



# Morecambe Offshore Windfarm: Generation Assets Environmental Statement

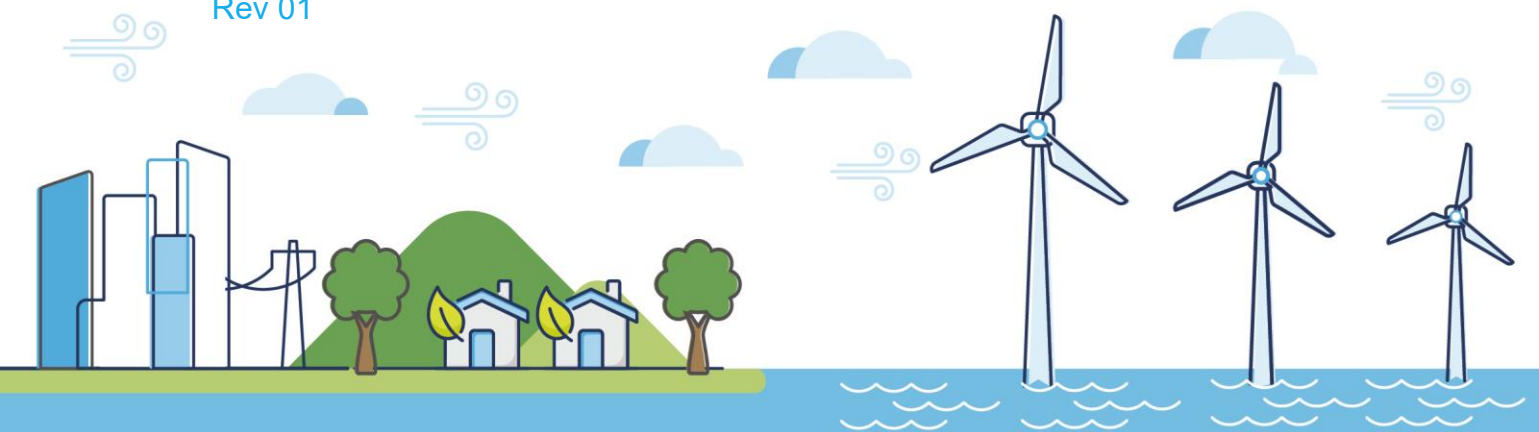
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Table 3.159 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 426

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Table 3.167 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **North Colonsay and Western Cliffs SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 442

Table 3.168 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **North Colonsay and Western Cliffs SPA** during **operation** of the

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Table 3.169 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **North Colonsay and Western Cliffs SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

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Table 3.170 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Canna and Sanday SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

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Table 3.171 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Canna and Sanday SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

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Table 3.172 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Canna and Sanday SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

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Table 3.173 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Canna and Sanday SPA** due to displacement from Morecambe OWF during. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

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Table 3.174 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Mingulay and Berneray SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

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Table 3.175 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Mingulay and Berneray SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

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Table 3.176 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Mingulay and Berneray SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

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Table 3.177 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Mingulay and Berneray SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 462

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Table 3.179 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 466

Table 3.180 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Shiant Isles SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 468

Table 3.181 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 470

Table 3.182 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Handa SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 472

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Table 3.184 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Handa SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 476

Table 3.185 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Handa SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 478



Table 3.186 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **St Kilda SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 480

Table 3.187 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 482

Table 3.188 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **St Kilda SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 484

Table 3.189 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 486

Table 3.190 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Cape Wrath SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 488

Table 3.191 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Cape Wrath SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 490

Table 3.192 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Cape Wrath SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 492

Table 3.193 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Cape Wrath SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 494

Table 3.194 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Flannan Isles SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of

displacement and mortality considered by the assessment are shown in grey cells. 496

Table 3.195 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Flannan Isles SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 498

Table 3.196 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Flannan Isles SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 500

Table 3.197 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Flannan Isles SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 502

Table 3.198 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 504

Table 3.199 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 506

Table 3.200 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 508

Table 3.201 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 510

Table 3.202 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **North Rona and Sula Sgeir SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 512

Table 3.203 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **North Rona and Sula Sgeir SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

514

Table 3.204 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **North Rona and Sula Sgeir SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

516

Table 3.205 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **North Rona and Sula Sgeir SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

518

Table 3.206 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Lambay Island SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

520

Table 3.207 Mean, LCI and UCI) displacement matrices showing change in mortality rate for **guillemot** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

522

Table 3.208 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Lambay Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

524

Table 3.209 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

526

Table 3.210 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

528

Table 3.211 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Saltee Islands SPA** due to displacement from



Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 530

Table 3.212 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Saltee Islands SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 532

Table 3.213 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 534

Table 3.214 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Ailsa Craig SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 536

Table 3.215 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Ailsa Craig SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 538

Table 3.216 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Ailsa Craig SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 540

Table 3.217 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Ailsa Craig SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 542

Table 3.218 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Ailsa Craig SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 544

Table 3.219 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Ailsa Craig SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 546

Table 3.220 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Ailsa Craig SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 548

Table 3.221 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Ailsa Craig SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 550

Table 3.222 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Flamborough and Filey Coast SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 552

Table 3.223 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Flamborough and Filey Coast SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 554

Table 3.224 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Flamborough and Filey Coast SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 556

Table 3.225 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Flamborough and Filey Coast SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 558

Table 3.226 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Outer Firth of Forth and St Andrews Bay Complex SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 560

Table 3.227 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Outer Firth of Forth and St Andrews Bay Complex SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 562

Table 3.228 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Outer Firth of Forth and St Andrews Bay Complex SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 564

Table 3.229 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Outer Firth of Forth and St Andrews Bay Complex SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 566

Table 3.230 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Grassholm SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 568

Table 3.231 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Grassholm SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 570

Table 3.232 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Grassholm SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 572

Table 3.233 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Grassholm SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 574

Table 3.234 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Grassholm SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 576

Table 3.235 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Grassholm SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 578

Table 3.236 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Grassholm SPA** during **operation** of the Project. Estimated

population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 580

Table 3.237 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Grassholm SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 582

Table 3.238 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **St Kilda SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 584

Table 3.239 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 586

Table 3.240 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **St Kilda SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 588

Table 3.241 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 590

Table 3.242 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **St Kilda SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 592

Table 3.243 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 594

Table 3.244 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **St Kilda SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 596

Table 3.245 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **St Kilda SPA** due to displacement from

Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 598

Table 3.246 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 600

Table 3.247 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 602

Table 3.248 Mean, lower confidence interval (LCI) and upper confidence interval (UCI) displacement matrices for **gannet** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 604

Table 3.249 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 606

Table 3.250 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 608

Table 3.251 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 610

Table 3.252 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 612



Table 3.253 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 614

Table 3.254 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **North Rona and Sula Sgeir SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 616

Table 3.255 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **North Rona and Sula Sgeir SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 618

Table 3.256 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **North Rona and Sula Sgeir SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 620

Table 3.257 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **North Rona and Sula Sgeir SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 622

Table 3.258 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **North Rona and Sula Sgeir SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 624

Table 3.259 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **North Rona and Sula Sgeir SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 626

Table 3.260 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **North Rona and Sula Sgeir SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of

displacement and mortality considered by the assessment are shown in grey cells. 628

Table 3.261 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **North Rona and Sula Sgeir SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 630

Table 3.262 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Noss SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 632

Table 3.263 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Noss SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 634

Table 3.264 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Noss SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 636

Table 3.265 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Noss SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 638

Table 3.266 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Noss SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 640

Table 3.267 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Noss SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 642

Table 3.268 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Noss SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 644

Table 3.269 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Noss SPA** due to displacement

from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 646

Table 3.270 Mean, lower confidence interval (LCI) and upper confidence interval (UCI) displacement matrices for **gannet** apportioned to **Hermaness, Saxa Vord and Valla Field SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 648

Table 3.271 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Hermaness, Saxa Vord and Valla SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 650

Table 3.272 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Hermaness, Saxa Vord and Valla SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 652

Table 3.273 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Hermaness, Saxa Vord and Valla SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 654

Table 3.274 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Hermaness, Saxa Vord and Valla SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 656

Table 3.275 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Hermaness, Saxa Vord and Valla SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 658

Table 3.276 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Hermaness, Saxa Vord and Valla SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 660



Table 3.277 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Hermaness, Saxa Vord and Valla SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 662

Table 3.278 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 664

Table 3.279 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 666

Table 3.280 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 668

Table 3.281 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 670

Table 3.282 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 672

Table 3.283 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 674

Table 3.284 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Saltee Islands SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 676

Table 3.285 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm

site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 678

Table 3.286 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **The Bull and the Cow Rocks SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 680

Table 3.287 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **The Bull and the Cow Rocks SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 682

Table 3.288 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **The Bull and the Cow Rocks SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 684

Table 3.289 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **The Bull and the Cow Rocks SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 686

Table 3.290 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **The Bull and the Cow Rocks SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 688

Table 3.291 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **The Bull and the Cow Rocks SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 690

Table 3.292 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **The Bull and the Cow Rocks SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 692

Table 3.293 Mean, lower confidence interval (LCI) and upper confidence interval (UCI) **year-round** displacement matrices showing change in mortality rate for

**gannet** apportioned to **The Bull and the Cow Rocks SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 694

Table 3.294 Mean, lower confidence interval (LCI) and upper confidence interval (UCI) displacement matrices for **gannet** apportioned to **Skelligs SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 696

Table 3.295 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Skelligs SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 700

Table 3.296 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 702

Table 3.297 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Skelligs SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 704

Table 3.298 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 706

Table 3.299 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Skelligs SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 708

Table 3.300 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 710

Table 3.301 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Rathlin Island SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of

displacement and mortality considered by the assessment are shown in grey cells. 712

Table 3.302 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 714

Table 3.303 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Rathlin Island SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 716

Table 3.304 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 718

Table 3.305 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Rathlin Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 720

Table 3.306 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 722

Table 3.307 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Farne Islands SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 724

Table 3.308 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Farne Islands SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 726

Table 3.309 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Farne Islands SPA** during **operation** of the Project in the **breeding season** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 728

Table 3.310 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Farne Islands SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 730

Table 3.311 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Farne Islands SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 732

Table 3.312 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Farne Islands SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 734

Table 3.313 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Forth Islands SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 736

Table 3.314 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Forth Islands SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 738

Table 3.315 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Forth Islands SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 740

Table 3.316 Mean, lower confidence interval (LCI) and upper confidence interval (UCI) displacement matrices showing change in mortality rate for **puffin** apportioned to **Forth Islands SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 742

Table 3.317 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Forth Islands SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 744

Table 3.318 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Forth Islands SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm



site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 746

Table 3.319 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Skomer, Skokholm and the seas off Pembrokeshire SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 748

Table 3.320 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Skomer, Skokholm and the seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 750

Table 3.321 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Skomer, Skokholm and the seas off Pembrokeshire SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 752

Table 3.322 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Skomer, Skokholm and the seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 754

Table 3.323 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Skomer, Skokholm and the seas off Pembrokeshire SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 756

Table 3.324 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Skomer, Skokholm and the seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 758

Table 3.325 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Shiant Isles SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 760

Table 3.326 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Shiant Isles SPA** due to displacement from



Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 762

Table 3.327 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Shiant Isles SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 764

Table 3.328 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 766

Table 3.329 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Shiant Isles SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 768

Table 3.330 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 770

Table 3.331 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **St Kilda SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 772

Table 3.332 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 774

Table 3.333 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **St Kilda SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 776

Table 3.334 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 778

Table 3.335 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **St Kilda SPA** during **operation** of the Project. Estimated population

based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 780

Table 3.336 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 782

Table 3.337 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Flannan Isles SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 784

Table 3.338 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Flannan Isles SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 786

Table 3.339 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Flannan Isles SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 788

Table 3.340 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Flannan Isles SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 790

Table 3.341 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Flannan Isles SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 792

Table 3.342 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Flannan Isles SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 794

Table 3.343 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 796

Table 3.344 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

798

Table 3.345 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

800

Table 3.346 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

802

Table 3.347 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

804

Table 3.348 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

806

Table 3.349 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Foula SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

808

Table 3.350 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Foula SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

810

Table 3.351 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Foula SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

812

Table 3.352 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Foula SPA** due to displacement from Morecambe

OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 814

Table 3.353 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Foula SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 816

Table 3.354 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Foula SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 818

Table 3.355 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Saxa Vord and Hermaness SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 820

Table 3.356 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Saxa Vord and Hermaness SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 822

Table 3.357 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Saxa Vord and Hermaness SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 824

Table 3.358 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Saxa Vord and Hermaness SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 826

Table 3.359 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Saxa Vord and Hermaness SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 828

Table 3.360 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Saxa Vord and Hermaness SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 830

Table 3.361 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Lambay Island SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 832

Table 3.362 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 834

Table 3.363 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Lambay Island SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 836

Table 3.364 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 838

Table 3.365 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Lambay Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 840

Table 3.366 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 842

Table 3.367 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 844

Table 3.368 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 846

Table 3.369 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of



displacement and mortality considered by the assessment are shown in grey cells. 848

Table 3.370 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 850

Table 3.371 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Saltee Islands SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 852

Table 3.372 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 854

Table 3.373 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Blasket Islands SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 856

Table 3.374 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Blasket Islands SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 858

Table 3.375 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Blasket Islands SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 860

Table 3.376 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Blasket Islands SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 862

Table 3.377 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Blasket Islands SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 864

Table 3.378 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Blasket Islands SPA** due to displacement



from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 866

Table 3.379 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Puffin Island SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 868

Table 3.380 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Puffin Island SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 870

Table 3.381 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Puffin Island SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 872

Table 3.382 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Puffin Island SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 874

Table 3.383 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Puffin Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 876

Table 3.384 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Puffin Island SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 878

Table 3.385 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Skelligs SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 880

Table 3.386 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 882

Table 3.387 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Skelligs SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 884

Table 3.388 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 886

Table 3.389 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Skelligs SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 888

Table 3.390 **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 890

Table 3.391 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Rathlin Island SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 892

Table 3.392 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 894

Table 3.393 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Rathlin Island SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 896

Table 3.394 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 898

Table 3.395 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Rathlin Island SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 900

Table 3.396 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 902

Table 3.397 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Rathlin Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 904

Table 3.398 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 906

Table 3.399 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 908

Table 3.400 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 910

Table 3.401 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 912

Table 3.402 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 914

Table 3.403 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 916

Table 3.404 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 918

Table 3.405 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 920

Table 3.406 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 922

Table 3.407 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Mingulay and Berneray SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 924

Table 3.408 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Mingulay and Berneray SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 926

Table 3.409 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Mingulay and Berneray SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 928

Table 3.410 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Mingulay and Berneray SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 930

Table 3.411 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Mingulay and Berneray SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area.

Ranges of displacement and mortality considered by the assessment are shown in grey cells. 932

Table 3.412 displacement matrices showing change in mortality rate for **razorbill** apportioned to **Mingulay and Berneray SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 934

Table 3.413 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Mingulay and Berneray SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 936

Table 3.414 Mean, lower confidence interval (LCI) and upper confidence interval (UCI) **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Mingulay and Berneray SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 938

Table 3.415 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Shiant Isles SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 940

Table 3.416 Mean, lower confidence interval (LCI) and upper confidence interval (UCI) displacement matrices showing change in mortality rate for **razorbill** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 942

Table 3.417 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Shiant Isles SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 944

Table 3.418 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 946

Table 3.419 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Shiant Isles SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of



displacement and mortality considered by the assessment are shown in grey cells. 948

Table 3.420 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 950

Table 3.421 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Shiant Isles SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 952

Table 3.422 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 954

Table 3.423 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Handa SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 956

Table 3.424 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Handa SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 958

Table 3.425 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Handa SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 960

Table 3.426 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Handa SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 962

Table 3.427 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Handa SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 964

Table 3.428 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Handa SPA** due to displacement from Morecambe



OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 966

Table 3.429 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Handa SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 968

Table 3.430 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Handa SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 970

Table 3.431 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Cape Wrath SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 972

Table 3.432 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Cape Wrath SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 974

Table 3.433 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Cape Wrath SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 976

Table 3.434 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Cape Wrath SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 978

Table 3.435 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Cape Wrath SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 980

Table 3.436 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Cape Wrath SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 982

Table 3.437 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Cape Wrath SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 984

Table 3.438 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Cape Wrath SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 986

Table 3.439 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Lambay Island SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 988

Table 3.440 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 990

Table 3.441 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Lambay Island SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 992

Table 3.442 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 994

Table 3.443 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Lambay Island SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 996

Table 3.444 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 998

Table 3.445 displacement matrices for **razorbill** apportioned to **Lambay Island SPA** during **operation** of the Project in the **spring migration** season. Estimated

population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1000

Table 3.446 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1002

Table 3.447 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Lambay Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1004

Table 3.448 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1006

Table 3.449 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Ireland's Eye SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1008

Table 3.450 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Ireland's Eye SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1010

Table 3.451 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Ireland's Eye SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1012

Table 3.452 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Ireland's Eye SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1014

Table 3.453 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Ireland's Eye SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1016

Table 3.454 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Ireland's Eye SPA** due to displacement from

Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1018

Table 3.455 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Ireland's Eye SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1020

Table 3.456 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Ireland's Eye SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1022

Table 3.457 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1024

Table 3.458 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1026

Table 3.459 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1028

Table 3.460 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1030

Table 3.461 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells. 1032

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## Glossary of Acronyms

AON/B/T	Apparently Occupied Nest/Burrow/Territory
BDMPS	Biologically Defined Minimum Population Scales
BTO	British Trust for Ornithology
CPGR	Counterfactual of Population Growth Rate
CPS	Counterfactual of Population Size
CRM	Collision Risk Model
CV	Coefficient of Variation
DCO	Development Consent Order
DEN	Denmark
EIA	Environmental Impact Assessment
ENS	England North Sea Coast
ES	Environmental Statement
EUC	Central Europe English Channel Coast
EUN	Central Europe North Sea Coast
EWB	England and Wales Bristol Channel
EWI	England and Wales Irish Sea
FAE	Faroe Islands
GIS	Geographical Information System
GSD	Ground Sample Distance
HAT	Highest Astronomical Tide
HPAI	Highly Pathogenic Avian Influenza
HRA	Habitats Regulations Assessment
ICE	Iceland
ICOL	Inch Cape Offshore Limited
IHC	Inner Hebrides – Coll and Tiree
IHI	Inner Hebrides – Islay
IHJ	Inner Hebrides – Jura
IHM	Inner Hebrides – Mull
IHS	Inner Hebrides – Skye and Lewis
IND	Individuals
JNCC	Joint Nature Conservation Committee
LCI	Lower Confidence Interval
NAF	Nocturnal Activity Factor
NIC	Northern Ireland Celtic Seas Coast



NIH	Northern Ireland Hebridean Seas Coast
NOR	Norway
ORK	Orkney
OSP	Offshore substation platform(s)
OWF	Offshore Windfarm
PCH	Proportion at Collision Height
PDE	Project Design Envelope
PEIR	Preliminary Environmental Information Report
PVA	Population Viability Analysis
RIAA	Report to Inform Appropriate Assessment
RIE	Republic of Ireland Celtic Seas eastern Coast
RIS	Republic of Ireland Celtic Seas southern Coast
sCRM	Stochastic Collision Risk Model
SCS	Scottish mainland Celtic Seas Coast
SD	Standard Deviation
SHS	Scottish mainland Hebridean Seas Coast
SMP	Seabird Monitoring Programme
SNCB	Statutory Nature Conservation Bodies
SNS	Scottish mainland North Sea Coast
SNH	Scottish Natural Heritage <sup>1</sup>
SOSSMAT	Strategic Ornithological Support Services Migrant Assessment Tool
SPA	Special Protection Area
SPA	Spanish North Coast (used in the SOSSMAT tool)
UCI	Upper Confidence Interval
UK	United Kingdom
WTG	Wind turbine generator

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<sup>1</sup> As of August 2020, Scottish Natural Heritage is known as NatureScot

## Glossary of Unit Terms

cm	Centimetre
km	kilometre
m	Metre
m/s	Metre per second
MW	Megawatts

## Glossary of Terminology

Applicant	Morecambe Offshore Windfarm Ltd
Biologically defined minimum population scale (BDMPS)	The estimated population size of a species within a defined biogeographic area during a biologically relevant season, as defined by Furness (2015). For many seabird species present in United Kingdom (UK) waters there are two defined biogeographic areas; UK Western waters and UK North Sea and Channel. However, some species have different defined BDMPS areas, dependent on the distribution and movements of the species population through the year. Furness (2015) defined the BDMPS for non-breeding seasons; the breeding season BDMPS is defined as the breeding population within foraging range from the project, plus non-breeders and immatures.
Generation Assets (the Project)	Generation assets associated with the Morecambe Offshore Windfarm. This is infrastructure in connection with electricity production, namely the fixed foundation wind turbine generators (WTGs), inter-array cables, offshore substation platform(s) (OSP(s)) and possible platform link cables to connect OSP(s).
Inter-array cables	Cables which link the WTGs to each other and the OSP(s).
Morgan and Morecambe Offshore Wind Farms: Transmission Assets	The transmission assets for the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm. This includes the OSP(s) <sup>2</sup> , interconnector cables, Morgan offshore booster station, offshore export cables, landfall site, onshore export cables, onshore substations, 400kV cables and associated grid connection infrastructure such as circuit breaker infrastructure.  Also referred to in this chapter as the Transmission Assets, for ease of reading.
Offshore export cables	The cables which would bring electricity from the offshore substation platform to the landfall.
Offshore substation platform(s)	A fixed structure located within the windfarm site, containing electrical equipment to aggregate the power from the WTGs and convert it into a more suitable form for export to shore.
Platform link cable	An electrical cable which links one or more OSP(s).
Stochastic Collision Risk Model (sCRM)	A programme used to assess the collision risk (estimated mortality) of seabirds to operational turbines of offshore windfarms. A stochastic CRM is used to account for uncertainty around input variables.

<sup>2</sup> At the time of writing the ES, a decision had been taken that the OSP(s) would remain solely within the Generation Assets application and would not be included within the Development Consent Order (DCO) application for the Transmission Assets. This decision post-dated the Preliminary Environmental Information Report (PEIR) that was prepared for the Transmission Assets. The OSP(s) are still included in the description of the Transmission Assets for the purposes of this Environmental Statement (ES) as the Cumulative Effect Assessment (CEA) carried out in respect of the Generation/Transmission Assets is based on the information available at Transmission Assets PEIR.

Study area	This is an area which is defined for each environmental Impact Assessment (EIA) topic which includes the windfarm site as well as potential spatial and temporal considerations of the impacts on relevant receptors. The study area for each EIA topic is intended to cover the area within which an effect can be reasonably expected.
Windfarm site	The area within which the WTGs, inter-array cables, OSP(s) and platform link cables will be present.
Wind turbine generator (WTG)	A fixed structure located within the windfarm site that converts the kinetic energy of wind into electrical energy.



MORECAMBE

12.1

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# 1 Introduction

1. The Morecambe Offshore Windfarm is a proposed offshore windfarm (OWF) located in the Eastern Irish Sea, approximately 30km from the Lancashire coast. When fully operational, it will have an anticipated nominal capacity of 480 megawatts (MW). The Morecambe Offshore Windfarm Generation Assets (the Project) relates to the infrastructure to be located within the windfarm site, namely wind turbine generators (WTGs), offshore substation platform(s) (OSP(s)), inter-array cables to connect WTGs to the OSPs, and possible platform link cables to connect OSPs.
2. This technical report supports **Chapter 12 Offshore Ornithology** (Document Reference 5.1.12) of the Environmental Statement (ES) and supporting Report to Inform the Appropriate Assessment (RIAA) (Document Reference 4.9), which consider the potential impacts of the Project on ornithological receptors. The report presents further details of several aspects of the Project assessment not included in the ES chapter and RIAA.
3. A summary of the data sources used in the assessment, survey methods and approach to data analysis are provided in **Section 1.1**, **Section 1.2** and **Section 2** respectively. Thereafter, results of the data analyses are presented in **Section 2.1.5**, supported by the two year aerial survey report prepared by HiDef Aerial Surveying Limited (HiDef), which is provided in **Appendix 12.2 Aerial Surveys Two Year Report March 2021 to February 2023** (Document Reference 5.2.12.2).
4. This report provides:
  - Information regarding the collection of baseline information from the site-specific surveys (**Section 1.1**, **Section 2** and **Appendix 12.2**)
  - Information how these survey data were treated to produce robust density and abundance estimates of offshore ornithology receptors within the offshore study area and other reporting regions, and presentation of these by survey (**Section 2.1**, **Appendix 12.2** and **Annex 1**). For species for which Collision Risk Modelling (CRM) has been carried out, density estimates of flying birds by month used for the modelling are also presented (**Section 2.1.2**)
  - A summary of species recorded during site-specific surveys (**Section 3.1**)
  - Outputs of calculations to apportion birds to Special Projection Areas (SPAs) during the breeding season (**Section 3.1.3**)
  - Outputs of collision risk modelling (**Section 3.1.4**), both for the 'standard' approach (**Section 3.1.4.1**) and for migratory species (**Section 3.1.4.2**)

- Outputs of calculations to estimate the magnitude of potential displacement effects during the Project operation and maintenance phase (**Section 3.1.5** (Environmental Impact Assessment (EIA) context) and **Section 3.1.6** (Habitats Regulations Assessment (HRA) context)
  - Apportioning calculations used for the HRA in-combination assessment (**Section 3.1.7**)
  - Outputs of Population Viability Analysis (PVA) for great black backed gull (EIA context) (**Section 3.1.8**) and lesser black-backed gull (HRA context) (**Section 3.1.9**)
5. Full details of aerial survey and analytical steps between image data collection and population and density estimates are provided in **Appendix 12.2** produced by the aerial survey contractor (HiDef).

## 1.1 Data sources

6. The key data source used in the ES offshore ornithology assessment was site specific monthly aerial surveys which aimed to characterise the baseline abundance and density of birds within the study area. Surveys recorded digital aerial video at high resolution over the study area, to capture activity of birds, marine mammals and other marine megafauna, plus human activity.
7. The study area ('survey area') included the extent of the development area (the windfarm site), plus a buffer of at least 4km additional distance west and south, and 10km additional distance north and east, in order to capture sea areas relevant to sea-duck and diver species in the vicinity of Liverpool Bay SPA. The total survey area extent was 651km<sup>2</sup> as shown in Figure 12.1 of **Chapter 12 Offshore Ornithology** of the ES.
8. The total programme of monthly aerial surveys spanned 24 months from March 2021 to February 2023, and has informed the ES and RIAA.
9. Further detail of the survey programme is provided in **Appendix 12.2**. Other desk-based data sources were used to inform **Chapter 12 Offshore Ornithology** of the ES, which are described in the relevant sections of the ES. This technical appendix is focussed on site-specific survey data and subsequent analysis to inform CRM and displacement estimates.

## 1.2 Survey methods

10. Digital aerial surveys were conducted using four HiDef Gen II cameras mounted on an aircraft flying a route which consisted of parallel strip transects of the survey area. Transects were oriented approximately north-east to south-west in order to run approximately perpendicular to depth contours along the study region's coast (i.e., parallel to gradients in depth, hence recording similar variation in marine habitat per transect).

11. Camera sensors were set to record an at-ground resolution of 2cm (Ground Sample Distance (GSD)). Each camera recorded video of a strip 125m wide, spaced 25m from the strip recorded by the adjacent camera. Total recording coverage of surveys was therefore a 500m wide strip per transect.
12. Further details of the survey method are provided in **Appendix 12.2**.

## 2 Data analysis

### 2.1 Bird abundance and density estimates

13. For survey data analysis, recordings from two of the four cameras were analysed, resulting in coverage of approximately 25% of the survey area from each survey flight. This accords with best practice guidance (Natural England, 2022a). Data analysis entailed i) reviewing the video footage to detect objects, and ii) allocation of detected objects to species or species group, with an audit of a 20% random sample at each stage requiring 90% agreement of detections/identifications, respectively.
14. Density and abundance estimates were calculated for the windfarm site, the windfarm site + 2km additional buffer distance, the windfarm site + 4km buffer distance and (for red-throated diver (HRA only)) the windfarm site + 10km buffer distance to the north and east, where this overlaps Liverpool Bay SPA.
15. Two datasets were taken forward through subsequent analyses – data containing records identified to species level, and another dataset of records identified to group level.
16. Final datasets of records identified to species level included ‘apportioned’ data. In apportioning, the ratio of records respectively identified to the level of (related) species (e.g., ratio of guillemot and razorbill records) was used to reclassify records formerly only identified to group level (in the example, identified to ‘large alcids/auks’) to species level.
17. Density and abundance (population) estimates were calculated using a non-parametric block bootstrap method with replacement where each strip transect was treated as an independent random sample of the study area. A total of 1,000 bootstrap iterations were carried out from which the mean density or abundance, plus Standard Deviation (SD), Coefficient of Variation (CV) and upper and lower 95% confidence intervals of the sample means, were calculated.
18. Density and abundance estimates of species spending a significant proportion of daily activity underwater were subject to correction for ‘availability bias’. Correction factors were applied to guillemot, razorbill and puffin (and harbour porpoise) using data from individual data-logger tagging studies.

19. Further details of bird abundance and density estimation are provided in **Appendix 12.2**. Density and abundance tables for all seabird species recorded during surveys are provided in **Annexes I-VI of Appendix 12.2**.

### 2.1.1 Breeding season apportioning

20. To inform the RIAA, apportioning of seven breeding seabird species present at the windfarm site during the breeding season has been undertaken using the theoretical approach described by NatureScot (2018). These species were:
- Manx shearwater
  - Gannet
  - Herring gull
  - Lesser black-backed gull
  - Kittiwake
  - Puffin
  - Razorbill
21. This approach uses three weighting factors to estimate the proportion of birds from relevant Special Protection Areas (SPAs): the relevant colony adult population; the distance of the SPA from the windfarm site; and the proportion of foraging range as sea. For each colony the relative weight was calculated using the following formula:
22. 
$$\text{Weight} = (\text{Colony Population} / \text{Sum of Populations}) \times (\text{Sum of Distance}^2 / \text{Colony Distance}^2) \times (1 / \text{Colony Sea Proportion} / \text{Sum of (1/Sea Proportions)})$$
23. Colony populations for the apportioning were taken from the most recent counts recorded in the Seabird Monitoring Programme (SMP) database (British Trust of Ornithology (BTO), 2023). The counts were provided as AON/B/T (Apparently Occupied Nest/Burrow/Territory) and individuals (IND) in the data from the SMP. The apportioning calculation uses the number of individuals as the colony population value (NatureScot, 2018). Assuming that there would be two individuals per AON/B/T, these counts were doubled to get the number of individuals. As recommended to Inch Cape Offshore Limited (ICOL, 2017) and subsequently in other applications, for razorbill, a correction value of 1.34 ( $k=0.67$  (doubled for no. individuals)) was applied to give a more accurate estimate of breeding adults. This correction predicted the number of pairs by multiplying the IND count by 0.67 (Mitchell *et al.*, 2004). The number of pairs was then doubled to get the corrected number of individuals, which was then used in the apportioning calculations.

24. Distance to colony across sea and proportion of foraging area as sea were calculated using Geographical Information System (GIS). Colonies within range of the site were determined by the mean max foraging range +1SD of each species.
25. The outputs of the calculations are presented in **Section 3.1.3**. The original GIS files and spreadsheet are available on request.

## 2.1.2 Collision Risk Modelling

### 2.1.2.1 Standard model

#### Methods and input parameters

26. The ‘standard’ CRM is applied to density estimates from baseline surveys for species flying within the OWF site (as opposed to the Migratory Species Model described in **Section 2.1.3**). Two standard models were available, the deterministic Band (2012) model and the stochastic (McGregor *et al.*, 2018) model.
27. The CRM for the Project has used the Stochastic CRM (sCRM) using the web-based ‘shiny app’. This accords with discussions with Natural England in July 2022, and best-practice guidance (Natural England, 2022b). Input parameters for the wind turbine array were derived from the Project Design Envelope (PDE). The Project parameters used in the model are presented in **Table 2.1**.

*Table 2.1 Parameters used in the sCRM*

Parameter	Value <sup>1</sup>
Turbine	14MW WTG
Number of WTGs	35
Number of blades	3
Max. blade width (m)	6.45
Average blade pitch (deg)	6
Rotor diameter (m)	260
Rotor radius (m)	130
Rotation speed (RPM)	7.64
Hub height above Highest Astronomical Tide (HAT) (m)	155
Air gap above HAT (m)	25
Tidal offset (HAT-MSL) (m)	4.82
Latitude <sup>2</sup> (deg N)	53.8



Parameter	Value <sup>1</sup>
Windfarm site width <sup>3</sup> (km)	10.52
Wind availability (average) (%)	92
Downtime (all months) (%)	1.5
HAT = Highest astrological tide, MSL = mean sea level	
<sup>1</sup> SD values have not been provided, and have therefore been set to zero for all relevant parameters <sup>2</sup> At the central point <sup>3</sup> The width is calculated as the diameter of a circle with the same area as the offshore windfarm site (for Morecambe 125km <sup>2</sup> ).	

28. The sCRM has been undertaken for all seabird species recorded flying within the windfarm site during the aerial surveys. The parameters used accord with guidance issued to the Project by Natural England in July 2022, utilising currently unpublished data from draft Statutory Nature Conservation Bodies (SNCB) guidance on CRM, including updated avoidance rates based on those presented in Ozsanlav-Harris *et al.* (2022). Natural England has stated that it wishes to see use of these data in preference to existing published guidance (e.g., in SNCBs 2014), recognising that there is a small risk that some values may be adjusted prior to final publication of the SNCB guidance. Where individual species data were not available, existing published values have been used. Seabird input parameters used in the sCRM are presented in **Table 2.2**.

Table 2.2 Seabird parameters used in the sCRM for the Morecambe Offshore Windfarm analysis

Species	Flight type	% flights upwind	Body Length m ( <sup>1</sup> Robinson 2005)	Wingspan m ( <sup>2</sup> Robinson 2005)	Flight speed m/s ( <sup>3</sup> Cook, 2014)	Nocturnal activity ( <sup>4</sup> Garthe and Hüppop 2004, Furness 2013)	Avoidance rate Ozsanlav-Harris et al, 2022; Natural England 2022)
<b>Red-throated diver</b> <i>Gavia stellata</i>	Flapping	50	0.61 <sup>1</sup>	1.11 <sup>2</sup>	14.5 <sup>3</sup>	0.0 <sup>4</sup>	0.991 (±0.0004)
<b>Manx shearwater</b> <i>Puffinus puffinus</i>	Flapping	50	0.34 <sup>1</sup>	0.82 <sup>2</sup>	14.1 (Spivey et al., 2014)	0.5 <sup>4</sup>	0.991 (±0.0004)
<b>Gannet</b> <i>Morus bassanus</i>	Flapping	50	0.94 (±0.0325)	1.72 (±0.0375)	14.9 (±0)	0.08 (±0.10)	0.993 (±0.0003)
<b>Little gull</b> <i>Hydrocoeleus minutus</i>	Flapping	50	0.26 <sup>1</sup>	0.78 <sup>2</sup>	11.50 <sup>3</sup>	0.25 <sup>4</sup>	0.993 (±0.0003)
<b>Kittiwake</b> <i>Rissa tridactyla</i>	Flapping	50	0.39 (±0.0.0005)	1.08 (±0.0625)	13.1(±0.40)	0.375±0.0637	0.993 (±0.0003)
<b>Black-headed gull</b> <i>Chroicocephalus ridibundus</i>	Flapping	50	0.36 <sup>1</sup>	1.05 <sup>2</sup>	9.50 <sup>3</sup>	0.5 <sup>4</sup>	0.995 (±0.0002)
<b>Common gull</b> <i>Larus canus</i>	Flapping	50	0.41 <sup>1</sup>	1.20 <sup>2</sup>	9.50 <sup>3</sup>	0.5 <sup>4</sup>	0.995 (±0.0002)
<b>Herring gull</b> <i>Larus argentatus</i>	Flapping	50	0.6 (±0.0225)	1.44 (±0.03)	12.8 (±1.80)	0.375±0.0637	0.994 (±0.0004)
<b>Lesser black-backed gull</b> <i>Larus fuscus</i>	Flapping	50	0.58 (±0.03)	1.42 (±0.0375)	13.1 (±1.90)	0.375±0.0637	0.994 (±0.0004)
<b>Great black-backed gull</b> <i>Larus marinus</i>	Flapping	50	0.71 (±0.035)	1.58 (±0.0375)	13.7 (1.20)	0.375±0.0637	0.994 (±0.0004)

Species	Flight type	% flights upwind	Body Length m ( <sup>1</sup> Robinson 2005)	Wingspan m ( <sup>2</sup> Robinson 2005)	Flight speed m/s ( <sup>3</sup> Cook, 2014)	Nocturnal activity ( <sup>4</sup> Garthe and Hüppop 2004, Furness 2013)	Avoidance rate Ozsanlav-Harris et al, 2022; Natural England 2022)
<b>Sandwich tern</b> <i>Thalasseus sandvicensis</i>	Flapping	50	0.38 (±0.005)	1 (±0.04)	10.3 (±3.4)	0.0 <sup>4</sup>	0.991 (±0.0004)
<b>Common tern</b> <i>Sterna hirundo</i>	Flapping	50	0.33 <sup>1</sup>	0.88 <sup>2</sup>	10.00 <sup>3</sup>	0.0 <sup>4</sup>	0.991 (±0.0004)
<b>Arctic tern</b> <i>Sterna paradisaea</i>	Flapping	50	0.34 <sup>1</sup>	0.80 <sup>2</sup>	(10.00) (based on common tern value)	0.0 <sup>4</sup>	0.991 (±0.0004)
<b>Guillemot</b> <i>Uria aalge</i>	Flapping	50	0.40 <sup>1</sup>	0.67 <sup>2</sup>	19.10 <sup>3</sup>	0.25 <sup>4</sup>	0.991 (±0.0004)
<b>Razorbill</b> <i>Alca torda</i>	Flapping	50	0.38 <sup>1</sup>	0.66 <sup>2</sup>	19.10 <sup>3</sup>	0.0 <sup>4</sup>	0.991 (±0.0004)

Note that SD values have been included for species were provided by Natural England (July 2022). For other species, where published values do not include SDs, these have been set to zero for the sCRM.

29. Bird density estimates used for the sCRM are presented in **Table 2.3**. These have been calculated by HiDef for flying birds recorded within the windfarm site. For gannet, densities are also shown at 70% of baseline values to reflect the 70% macro-avoidance rate used in the sCRM; this is in accordance with advice issued by Natural England in July 2022 and takes into account empirical evidence of macro-avoidance by this species, but is more precautionary than a recent Natural England commissioned study which calculated a mean macro-avoidance rate for gannet of 85.64% (Pavat *et al.* 2023).
30. In accordance with Natural England advice, sCRM results are only presented for Option 2 (flight heights assumed to be evenly distributed, proportion of birds flying at risk height as derived using flight height distribution data). Flight height distributions have been based on Johnston *et al.* (2014, a;b); site-specific flight height data have not been produced by HiDef and are not, therefore, used in the model.
31. The sCRM outputs are presented in **Section 3.1.4.1**. Full input and output data from the sCRM tool are available on request.

Table 2.3 Monthly flight densities (birds per km<sup>2</sup>) within the Morecambe Offshore windfarm site with no buffer (means with LCI and UCI 95% confidence intervals and SD) used in collision risk modelling.

Species		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Red-throated diver</b>	Mean birds/km <sup>2</sup>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
	LCI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	UCI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
	SD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
<b>Manx shearwater</b>	Mean birds/km <sup>2</sup>	0.00	0.00	0.00	0.02	1.17	0.73	7.13	4.16	0.02	0.00	0.00	0.00
	LCI	0.00	0.00	0.00	0.00	0.00	0.00	9.98	8.42	0.00	0.00	0.00	0.00
	UCI	0.00	0.00	0.00	0.00	2.17	1.59	0.47	0.95	0.00	0.00	0.00	0.00
	SD	0.00	0.00	0.00	0.04	1.24	0.85	6.01	3.22	0.04	0.00	0.00	0.00
<b>Gannet</b>	Mean birds/km <sup>2</sup>	0.00	0.00	0.00	0.05	0.14	0.02	0.09	1.05	0.15	0.00	0.02	0.00
	LCI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	UCI	0.00	0.00	0.00	0.18	0.48	0.13	0.37	2.89	0.52	0.00	0.13	0.00
	SD	0.00	0.00	0.00	0.06	0.16	0.04	0.12	1.04	0.15	0.00	0.04	0.00
<b>Gannet (density reduced to reflect 70% macro-avoidance)</b>	Mean birds/km <sup>2</sup>	0.00	0.00	0.00	0.01	0.04	0.01	0.03	0.32	0.04	0.00	0.01	0.00
	LCI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	UCI	0.00	0.00	0.00	0.05	0.14	0.04	0.11	0.87	0.16	0.00	0.04	0.00
	SD	0.00	0.00	0.00	0.02	0.05	0.01	0.04	0.31	0.04	0.00	0.01	0.00
<b>Little gull</b>	Mean birds/km <sup>2</sup>	0.16	0.34	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.91
	LCI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	UCI	0.53	1.12	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	2.52
	SD	0.18	0.38	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.95
<b>Kittiwake</b>	Mean birds/km <sup>2</sup>	0.07	0.18	1.01	0.48	1.25	1.10	1.40	1.16	2.02	0.14	0.71	0.50

Species		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Black-headed gull</b>	LCI	0.00	0.00	0.59	0.00	0.44	0.35	0.23	0.13	0.72	0.00	0.09	0.17
	UCI	0.21	0.36	1.41	1.20	2.36	1.83	3.55	2.45	3.98	0.30	1.45	1.06
	SD	0.06	0.09	0.21	0.42	0.50	1.10	1.10	0.71	1.06	0.08	0.42	0.23
	Mean birds/km <sup>2</sup>	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Common gull</b>	LCI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	UCI	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SD	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Mean birds/km <sup>2</sup>	0.11	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.13
<b>Herring gull</b>	LCI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	UCI	0.40	0.26	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.35	1.01
	SD	0.13	0.07	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.10	0.30
	Mean birds/km <sup>2</sup>	0.05	0.05	0.07	0.02	0.04	0.02	0.03	0.02	0.00	0.07	0.00	0.11
<b>Lesser black-backed gull</b>	LCI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	UCI	0.26	0.14	0.21	0.13	0.17	0.13	0.13	0.13	0.00	0.31	0.00	0.39
	SD	0.07	0.04	0.06	0.04	0.05	0.04	0.04	0.04	0.00	0.09	0.00	0.13
	Mean birds/km <sup>2</sup>	0.00	0.02	0.02	0.00	0.05	0.00	0.06	0.16	0.18	0.00	0.00	0.00
<b>Great black-backed gull</b>	LCI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	UCI	0.00	0.13	0.13	0.00	0.15	0.00	0.16	0.43	0.69	0.00	0.00	0.00
	SD	0.00	0.04	0.04	0.00	0.04	0.00	0.05	0.11	0.20	0.00	0.00	0.00
	Mean birds/km <sup>2</sup>	0.00	0.00	0.00	0.02	0.05	0.00	0.00	0.00	0.00	0.00	0.05	0.07
<b>Great black-backed gull</b>	LCI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	UCI	0.00	0.00	0.00	0.13	0.28	0.00	0.00	0.00	0.00	0.00	0.14	0.38
	SD	0.00	0.00	0.00	0.04	0.08	0.00	0.00	0.00	0.00	0.00	0.04	0.11



Species		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Sandwich tern</b>	Mean birds/km <sup>2</sup>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00
	LCI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	UCI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.00
	SD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00
<b>Common tern</b>	Mean birds/km <sup>2</sup>	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.13	0.00	0.00	0.00
	LCI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	UCI	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.52	0.00	0.00	0.00
	SD	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.17	0.00	0.00	0.00
<b>Arctic tern</b>	Mean birds/km <sup>2</sup>	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00	0.03	0.00	0.00	0.00
	LCI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	UCI	0.00	0.00	0.00	0.00	1.73	0.00	0.00	0.00	0.14	0.00	0.00	0.00
	SD	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.04	0.00	0.00	0.00
<b>Guillemot</b>	Mean birds/km <sup>2</sup>	0.05	0.12	0.28	0.05	0.19	0.12	0.23	0.00	0.00	0.23	0.07	0.43
	LCI	0.00	0.00	0.00	0.00	0.04	0.00	0.04	0.00	0.00	0.00	0.00	0.00
	UCI	0.18	0.27	0.94	0.18	0.44	0.66	0.49	0.00	0.00	0.96	0.30	1.17
	SD	0.06	0.08	0.31	0.06	0.11	0.18	0.12	0.00	0.00	0.28	0.09	0.42
<b>Razorbill</b>	Mean birds/km <sup>2</sup>	0.00	0.00	0.09	0.12	0.00	0.00	0.00	0.00	0.00	0.29	0.04	0.27
	LCI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	UCI	0.00	0.00	0.26	0.42	0.00	0.00	0.00	0.00	0.00	0.87	0.26	0.97
	SD	0.00	0.00	0.07	0.14	0.00	0.00	0.00	0.00	0.00	0.26	0.07	0.31

### 2.1.3 Migratory collision risk model

#### 2.1.3.1 Methods and input parameters

32. Collision risk for migrant populations was modelled using the BTO Strategic Ornithological Support Services Migrant Assessment Tool (SOSSMAT) and the Band (2012) spreadsheet tools, following author protocols (Wright *et al.* 2012, Band 2012).
33. Migration connection lines crossing the footprint of the windfarm site were selected using the 'Select By' spatial feature against a vector shapefile of the windfarm site in standard GIS software. The status of each connection line (0 (not crossing) or 1 (crossing) the windfarm site) was added to the SOSSMAT spreadsheet tool to filter lines by location. The Route Filter worksheet of the SOSSMAT file was updated as shown in **Table 2.4** to make broad inclusions and exclusions of sea-crossings in order to correctly estimate percentages of migrant populations crossing the windfarm site.
34. For migrant population sizes for each species (or species population), default population size values within the SOSSMAT spreadsheet and Wright *et al.* (2012) were used. In order to estimate a population Correction Factor for each species assessed, in line with Wright *et al.* (2012), first the approximate proportions of the total United Kingdom (UK) coastline spanned by i) Morecambe and Liverpool Bays, ii) Wales' west coast, iii) the north coast of Southwest England, iv) the English Channel coast, v) the east coast of England, vi) the east coast of Scotland and vii) the west coast of Scotland, were calculated. For each species assessed, the species maps in Wright *et al.* (2012) were then consulted to enable selection of all coastal stretches (among the seven above options) relevant to each species. The Morecambe and Liverpool Bay proportion (if present in the final selection) was then expressed as a percentage of the total relevant coastal proportion to produce a Correction Factor that represented the proportion of migration coastlines applicable to Morecambe and Liverpool Bay migrants. If Morecambe and Liverpool Bay were not present among the final selection for a species, the Correction Factor was 0. The calculation of Correction Factor for each species is shown in **Table 2.5**.
35. The SOSSMAT tool produced output estimated numbers of individuals of each species (or species population) crossing the windfarm site, which were used as inputs to the Band (2012) spreadsheet. These estimates are reported in **Table 2.6**.
36. Additional parameters required by the Band (2012) tool for assessing migrant collision risk were estimates produced using SOSSMAT above, plus i) proportion at rotor height, ii) width of migration corridor and iii) proportion of migratory flights upwind. Values used for these inputs are reported in **Table 2.6**. Biometrics

entered for migratory species into the Band (2012) tool are reported in ES **Chapter 12 Offshore Ornithology**.

37. Full input and output spreadsheets for the migratory CRM, together with Band (2012) spreadsheets, are available on request.

*Table 2.4 Selections made for the Project assessment in the Route Filter worksheet of the British Trust for Ornithology SOSS-Migration Assessment Tool (Wright et al. 2012)*

Start code	End code	Connection "START"	Connection "END"	Retained for project(s) i.e., only connections flagged with Y were used for assessment
EUC	(all)	Central Europe English Channel Coast	(all)	N
EUN	(all)	Central Europe North Sea Coast	(all)	N
DEN	(all)	Denmark	(all)	N
EWB	EWB	England and Wales Bristol Channel	England and Wales Bristol Channel	N
EWB	EWI	England and Wales Bristol Channel	England and Wales Irish Sea	Y
EWB	NIC	England and Wales Bristol Channel	Northern Ireland Celtic Seas coast	Y
EWB	SCS	England and Wales Bristol Channel	Scottish mainland Celtic Seas coast	Y
EWI	EWI	England and Wales Irish Sea	England and Wales Irish Sea	Y
EWI	NIC	England and Wales Irish Sea	Northern Ireland Celtic Seas coast	Y
EWI	SCS	England and Wales Irish Sea	Scottish mainland Celtic Seas coast	Y
ENS	(all)	England North Sea coast	(all)	N
FAE	(all)	Faroe Islands	(all)	N
ICE	(all)	Iceland	(all)	N
IHC	(all)	Inner Hebrides – Coll and Tiree	(all)	N
IHI	(all)	Inner Hebrides – Islay	(all)	N
IHJ	(all)	Inner Hebrides – Jura	(all)	N
IHM	(all)	Inner Hebrides – Mull	(all)	N

Start code	End code	Connection "START"	Connection "END"	Retained for project(s) i.e., only connections flagged with Y were used for assessment
IHS	(all)	Inner Hebrides – Skye and Lewis	(all)	N
NIC	SCS	Northern Ireland Celtic Seas coast	Scottish mainland Celtic Seas coast	Y
NIC	SHS	Northern Ireland Celtic Seas coast	Scottish mainland Hebridean Seas coast	N
NIC	WES	Northern Ireland Celtic Seas coast	Western Isles	N
NIH	(all)	Northern Ireland Hebridean Seas coast	(all)	N
NOR	(all)	Norway	(all)	N
ORK	(all)	Orkney	(all)	N
RIE	RIE	Republic of Ireland Celtic Seas eastern coast	Republic of Ireland Celtic Seas eastern coast	N
RIE	EWB	Republic of Ireland Celtic Seas eastern coast	England and Wales Bristol Channel	N
RIE	EWI	Republic of Ireland Celtic Seas eastern coast	England and Wales Irish Sea	Y
RIE	SCS	Republic of Ireland Celtic Seas eastern coast	Scottish mainland Celtic Seas coast	Y
RIE	SPA	Republic of Ireland Celtic Seas eastern coast	Spanish north coast	N
RIS	(all)	Republic of Ireland Celtic Seas southern coast	(all)	N
SCS	(all)	Scottish mainland Celtic Seas coast	(all)	N
SHS	(all)	Scottish mainland Hebridean Seas coast	(all)	N
SNS	(all)	Scottish mainland North Sea coast	(all)	N
SHE	(all)	Shetland	(all)	N
SPA	EWB	Spanish north coast	England and Wales Bristol Channel	N

Start code	End code	Connection "START"	Connection "END"	Retained for project(s) i.e., only connections flagged with Y were used for assessment
SPA	EWI	Spanish north coast	England and Wales Irish Sea	Y
SPA	ECW	Spanish north coast	England western English Channel coast	N
SPA	NIC	Spanish north coast	Northern Ireland Celtic Seas coast	Y
SPA	SCS	Spanish north coast	Scottish mainland Celtic Seas coast	Y

Table 2.5 Outline for calculations of population Correction Factor for each species (or species population) for use in British Trust for Ornithology SOSS-Migration Assessment Tool (Wright et al. 2012). Presence and absence of coastal stretches was determined from species maps in Wright et al. (2012).

Species	Morecambe and Liverpool Bays	Wales west coast	SW England north coast	England south coast	England east coast	Scotland east coast	Scotland west coast	Total % of GB coast	Morecambe as % of total (CORRECTION FACTOR)
<b>Bewick's swan</b>	8	12	8	15	17	18	22	100	8.00
<b>Whooper swan</b>	8	12			17	18	22	77	10.39
<b>Bean goose</b>					17	18		35	0.00
<b>Pink-footed goose</b>	8				17	18	22	65	12.31
<b>European white-fronted goose</b>				15	17			32	0.00
<b>Greenland white-fronted goose</b>	8	12					22	42	19.05
<b>Icelandic greylag goose</b>						18	22	40	0.00
<b>Barnacle goose (Greenland)</b>							22	22	0.00
<b>Barnacle goose (Svalbard)</b>	8				17	18		43	18.60
<b>Dark-bellied brent goose</b>				15	17			32	0.00
<b>Light-bellied brent goose (Canadian)</b>	8	12	8	15			22	65	12.31



Species	Morecambe and Liverpool Bays	Wales west coast	SW England north coast	England south coast	England east coast	Scotland east coast	Scotland west coast	Total % of GB coast	Morecambe as % of total (CORRECTION FACTOR)
Light-bellied brent goose (Svalbard)					17	18		35	0.00
Shelduck	8	12	8	15	17	18	22	100	8.00
Eurasian wigeon	8	12	8	15	17		22	82	9.76
Gadwall	8	12	8	15	17	18	22	100	8.00
Teal	8	12	8	15	17	18	22	100	8.00
Mallard	8	12	8	15	17	18	22	100	8.00
Pintail	8	12	8	15	17	18	22	100	8.00
Shoveler	8	12	8	15	17	18	22	100	8.00
Pochard	8	12	8	15	17	18	22	100	8.00
Tufted duck	8	12	8	15	17	18	22	100	8.00
Great scaup	8	12	8		17	18	22	85	9.41
Eider	8	12	8	15	17	18	22	100	8.00
Long-tailed duck	8	12	8	15	17	18	22	100	8.00
Common scoter	8	12	8	15	17	18	22	100	8.00
Velvet scoter	8			15	17	18	22	80	10.00
Goldeneye	8	12	8	15	17	18	22	100	8.00
Red-breasted merganser	8	12	8	15	17	18	22	100	8.00
Goosander (non-breeding)	8	12	8	15	17	18	22	100	8.00

Species	Morecambe and Liverpool Bays	Wales west coast	SW England north coast	England south coast	England east coast	Scotland east coast	Scotland west coast	Total % of GB coast	Morecambe as % of total (CORRECTION FACTOR)
<b>Goosander (breeding male moult migration)</b>	8			15	17	18	22	80	10.00
<b>Red-throated diver (breeding)</b>	8	12	8	15	17	18	22	100	8.00
<b>Red-throated diver (non-breeding)</b>	8	12	8	15	17	18	22	100	8.00
<b>Fulmar</b>	8	12	8	15	17	18	22	100	8.00
<b>Manx shearwater</b>	8	12	8	15	17	18	22	100	8.00
<b>Storm petrel</b>	8	12	8	15	17	18	22	100	8.00
<b>Leach's petrel</b>	8	12	8	15	17	18	22	100	8.00
<b>Gannet</b>	8	12	8	15	17	18	22	100	8.00
<b>Cormorant</b>	8	12	8	15	17	18	22	100	8.00
<b>Shag</b>	8	12	8	15	17	18	22	100	8.00
<b>Bittern</b>	8	12	8	15	17			60	13.33
<b>Little egret</b>			8	15				23	0.00
<b>Great crested grebe</b>	8	12	8	15	17	18		78	10.26
<b>Slavonian grebe</b>	8	12	8	15	17	18	22	100	8.00
<b>European honey buzzard</b>				15				15	0.00

Species	Morecambe and Liverpool Bays	Wales west coast	SW England north coast	England south coast	England east coast	Scotland east coast	Scotland west coast	Total % of GB coast	Morecambe as % of total (CORRECTION FACTOR)
Western marsh harrier	8		8	15	17			48	16.67
Hen harrier (breeding)	8	12	8	15	17	18	22	100	8.00
Hen harrier (non-breeding)				15	17	18		50	0.00
Montagu's harrier			8	15	17			40	0.00
Osprey	8	12	8	15	17	18		78	10.26
Merlin	8	12	8	15	17	18	22	100	8.00
Corncrake	8	12	8	15	17	18	22	100	8.00
Coot				15	17			32	0.00
Oystercatcher (breeding)	8	12	8	15	17	18	22	100	8.00
Oystercatcher (non-breeding)	8	12	8	15	17	18	22	100	8.00
Avocet (breeding)	8	12	8	15	17	18	22	100	8.00
Avocet (non-breeding)				15				15	0.00
Stone curlew				15				15	0.00
Ringed plover (breeding)	8	12	8	15	17	18	22	100	8.00
Ringed plover (non-breeding)	8	12	8	15	17	18	22	100	8.00

Species	Morecambe and Liverpool Bays	Wales west coast	SW England north coast	England south coast	England east coast	Scotland east coast	Scotland west coast	Total % of GB coast	Morecambe as % of total (CORRECTION FACTOR)
Dotterel (breeding and passage)	8	12	8	15	17	18		78	10.26
Dotterel (within breeding season)	8	12	8	15	17	18	22	100	8.00
Golden Plover (breeding)	8	12	8	15	17	18	22	100	8.00
Golden Plover (non-breeding)	8	12	8	15	17	18	22	100	8.00
Grey plover	8	12	8	15	17	18	22	100	8.00
Lapwing	8	12	8	15	17	18	22	100	8.00
Knot	8	12	8	15	17	18	22	100	8.00
Sanderling	8	12	8	15	17	18	22	100	8.00
Purple sandpiper	8				17	18	22	65	12.31
Dunlin <i>Calidris alpina schinzii</i> & <i>C.a.arctica</i> (passage)	8	12	8	15	17	18	22	100	8.00
Dunlin <i>Calidris alpina alpina</i> (passage & winter)	8	12	8	15	17	18		78	10.26
Ruff	8	12	8	15	17	18		78	10.26
Snipe	8	12	8	15	17	18	22	100	8.00

Species	Morecambe and Liverpool Bays	Wales west coast	SW England north coast	England south coast	England east coast	Scotland east coast	Scotland west coast	Total % of GB coast	Morecambe as % of total (CORRECTION FACTOR)
<b>Black-tailed godwit <i>Limosa limosa limosa</i></b>				15				15	0.00
<b>Black-tailed godwit <i>Limosa limosa islandica</i></b>	8	12	8	15	17	18	22	100	8.00
<b>Bar-tailed godwit</b>	8	12	8	15	17	18		78	10.26
<b>Whimbrel</b>	8	12	8	15	17	18	22	100	8.00
<b>Curlew (breeding)</b>	8	12	8	15	17	18	22	100	8.00
<b>Curlew (non-breeding)</b>	8	12	8	15	17	18	22	100	8.00
<b>Greenshank</b>	8	12	8	15	17	18	22	100	8.00
<b>Wood sandpiper</b>	8	12	8	15	17	18		78	10.26
<b>Redshank (British) (breeding)</b>	8	12	8	15	17	18	22	100	8.00
<b>Redshank (Iceland) (non-breeding)</b>	8	12	8	15	17	18	22	100	8.00
<b>Redshank (European) (non-breeding)</b>		12	8	15	17	18		70	0.00
<b>Turnstone</b>	8	12	8	15	17	18	22	100	8.00
<b>Red-necked phalarope</b>	8	12	8	15	17	18	22	100	8.00

Species	Morecambe and Liverpool Bays	Wales west coast	SW England north coast	England south coast	England east coast	Scotland east coast	Scotland west coast	Total % of GB coast	Morecambe as % of total (CORRECTION FACTOR)
Arctic skua	8	12	8	15	17	18	22	100	8.00
Great skua	8	12	8	15	17	18	22	100	8.00
Kittiwake	8	12	8	15	17	18	22	100	8.00
Black-headed gull	8	12	8	15	17	18	22	100	8.00
Mediterranean gull			8	15	17			40	0.00
Common gull	8	12	8		17	18	22	85	9.41
Lesser black-backed gull	8	12	8	15	17	18	22	100	8.00
Herring gull	8	12	8	15	17	18	22	100	8.00
Great Black-backed Gull	8	12	8	15	17	18	22	100	8.00
Little tern	8	12	8	15	17		22	82	9.76
Black tern				15	17			32	0.00
Sandwich tern	8	12	8	15	17	18		78	10.26
Common tern	8	12	8	15	17	18	22	100	8.00
Roseate tern	8	12	8	15	17			60	13.33
Arctic tern	8	12	8	15	17	18	22	100	8.00
Guillemot	8	12	8	15	17	18	22	100	8.00
Razorbill	8	12	8	15	17	18	22	100	8.00
Puffin	8	12	8	15	17	18	22	100	8.00
Short-eared owl	8	12	8	15	17	18	22	100	8.00



Species	Morecambe and Liverpool Bays	Wales west coast	SW England north coast	England south coast	England east coast	Scotland east coast	Scotland west coast	Total % of GB coast	Morecambe as % of total (CORRECTION FACTOR)
Nightjar	8	12	8	15	17			60	13.33
Woodlark				15	17			32	0.00
Dartford warbler				15				15	0.00
Aquatic warbler				15				15	0.00

Table 2.6 Parameters used in Band (2012) model for migrant collision risk for the Project

Taxon	Proportion at rotor height (%)	Width of migration corridor (km)	Proportion of migratory flights upwind
Swans	50	8	50
Geese	50		
Ducks	50 (except goldeneye and common scoter, i.e., sea-ducks 25)		
Divers	50		
Seabirds	(Cook <i>et al.</i> 2012) 50 (Petrels, shearwaters, auks, shag) 25 (Fulmar, cormorant, gannet) 10 (Great skua)		
Grebes	10		
Raptors	50		
Waders	50 (except godwits and golden plover 25, and curlew 1)		
Gulls	(Cook <i>et al.</i> 2012) 50 (Herring gull, lesser black-backed gull, kittiwake) 33 (Great black-backed gull)		

Taxon	Proportion at rotor height (%)	Width of migration corridor (km)	Proportion of migratory flights upwind
	25 (Black-headed gull, common gull)		
<b>Terns</b>	(Cook et al. 2012) 50 (Sandwich tern) 25 (Common tern) 3 (Arctic tern)		
<b>Owls and Nightjar</b>	50		

## 2.1.4 Displacement

38. Species were screened in or out of the construction and operation/maintenance phase displacement impact assessments as outlined in **Chapter 12 Offshore Ornithology** Table 12.19 and Table 12.20. For each species screened in for assessment, the seasons within the species' annual cycle were delineated, following the 'seasonal Biologically Defined Minimum Population Scale (BDMPS) periods' identified for the species by Furness (2015) except for common scoter, for which biologically relevant seasons were delineated using Cramp and Simmons (1983).
39. Having identified seasons for each species, their seasonal peak mean populations were determined, for each season, at the appropriate spatial scale (windfarm site + specified buffer area), as outlined in Section 12.6.3.1 of **Chapter 12 Offshore Ornithology**.
40. The buffer area (EIA context) for red-throated diver and common scoter was 4km. The buffer area for gannet, Manx shearwater and auks was 2km; this is in accordance with UK SNCB guidance (2017). The seasonal peak mean populations were considered to be the total number of individuals available to experience displacement by the Project. In displacement matrices, displacement values were 10% to 100% and mortality values were 1% to 100%. In accordance with UK SNCB guidance (2017), values considered to apply and for consideration in assessment were:
  - Red-throated diver: 100% Displacement, 1-10% Mortality
  - Common scoter: 90-100% Displacement, 1-10% Mortality
  - Gannet: 60-80% Displacement, 1% Mortality
  - Auks and shearwaters: 30-70% Displacement, 1-10% Mortality

### 2.1.5 Population Viability Analysis

41. The PVAs were undertaken using the Seabird PVA Tool developed by Natural England (Searle *et al.* 2019) via the 'Shiny App' interface, using the density independent run type. Although density dependence is a natural occurrence and prevents populations from growing exponentially, there was insufficient understanding of individual species parameters at the time of assessment to model density dependent processes (e.g., via survival rates, breeding productivity). Therefore, it was considered more appropriate to use density independent models for seabird assessments, despite their biological implausibility (would lead to an infinite increase or decline to extinction).
42. Environmental and demographic stochasticity were incorporated into the model. Environmental stochasticity accounts for the variation arising from environmental changes affecting individuals in the same group, and demographic stochasticity accounts for individual-level variation affecting the fate of individuals between age-classes. The use of stochastic models is recommended by SNCBs and produces more precautionary PVA outputs than deterministic models (Cook and Robinson, 2016).
43. The two metrics used to determine effects are the median of the ratio of impacted to un-impacted annual population growth rate (referred to as the Counterfactual of Population Growth Rate (CPGR) and the median of the ratio of impacted to un-impacted population size (referred to as the Counterfactual of Population Size (CPS)). The two metrics are integrally linked (because the predicted population size is a product of the annual population growth rate).

#### 2.1.5.1 EIA

44. A PVA was carried out for great black-backed gull, due to the predicted cumulative impact of collision mortality exceeding a 1% threshold in relation to the largest seasonal population of UK South-west and Channel BDMPS; 44,753 (the sum of adult and immature population estimates for all colonies within the BDMPS, calculated using data presented in Table 46 of Furness (2015) and following Natural England (2022c) advice). A 1% increase is the level that is regarded as the threshold for undertaking further assessments such as PVA for species' respective BDMPS regions.
45. Species parameters used in the model are provided in **Table 2.7**. Survival rates were derived from the national values presented in Horswill and Robinson (2015); since great black-backed gull juvenile and immature survival rates are unknown, Horswill and Robinson (2015) recommended using the survival rates of other large gull species when conducting population modelling for great black-backed

gull. Therefore, based on the approach taken in the Mona and Morgan PEIR (Morgan Offshore Wind Ltd, 2023; Mona Offshore Wind Ltd, 2023) the survival rates used in the PVA are based on adult and juvenile rates for herring gull as presented in Horswill & Robinson (2015).

*Table 2.7 Input parameters used in the EIA PVA*

<b>Parameter</b>	<b>Value</b>
PVA model run type	simplescenarios
Model to use for environmental stochasticity	betagamma
Model for density dependence	Nod.
Include demographic stochasticity in the model?	Yes
Number of simulations	5000
Random seed	10
Years for burn-in	4
Case study selected	None
Species chosen to set initial values	Great black-backed gull
Age at first breeding	5
Upper constraint on productivity in the model?	Yes, constrained to 3 per pair
Number of sub-populations	1
Are demographic rates applied separately to each subpopulation?	No
Units for initial population size	All individuals
Are baseline demographic rates specified separately for immatures?	Yes
Initial population values	44,753 in 2024
Productivity rate per pair	Mean 1.139, SD 0.533
Adult survival rate	Mean 0.834, SD 0.034
Immature survival rate – age glass 0 to 1	Mean 0.789, SD 0.092
Immature survival rate – age glass 1 to 2	Mean 0.834, SD 0.034
Immature survival rate – age glass 2 to 3	Mean 0.834, SD 0.034
Immature survival rate – age glass 3 to 4	Mean 0.834, SD 0.034

Parameter	Value	
Immature survival rate – age glass 4 to 5	Mean 0.834, SD 0.034	
Number of impact scenarios	1	
Are impacts applied separately to each subpopulation?	No	
Are impacts of scenarios specified separately for immatures?	No	
Are standard errors of impacts available?	No	
Should random seeds be matched for impact scenarios?	No	
Are impacts specified as a relative value or absolute harvest?	Relative	
Years in which impacts are assumed to begin and end	2028 to 2063	
Impact on productivity rate	None	
Impact on adult survival rate	Including Morecambe OWF 0.002616361	Excluding Morecambe OWF 0.002577257
First year to include in outputs	2028	
Final year to include in outputs	2063	
How should outputs be produced, in terms of ages?	Whole population	

### 2.1.5.2 HRA

46. A PVA was carried out for lesser black-backed gull, due to the predicted cumulative impact of collision mortality exceeding a 1% threshold in relation to the breeding adult populations of the SPA in question, calculated using data presented in Table 46 of Furness (2015) and following Natural England (2023) advice. A 1% increase is the level that is regarded as the threshold for undertaking further assessments such as PVA for species' respective BDMPS regions.
47. Species parameters used in the model are provided in **Table 2.8**. Survival rates were derived from the national values presented in Horswill and Robinson (2015); since lesser black-backed gull juvenile survival rates are unknown, Horswill and Robinson (2015) recommended using the survival rates of herring gull when conducting population modelling for lesser black-backed gull. Therefore, the survival rates used in the PVA are based on juvenile rates for herring gull and the



adult survival rates of lesser black-backed gulls as presented in Horswill & Robinson (2015).

*Table 2.8 Input parameters used in the HRA PVA*

<b>Parameter</b>	<b>Morecambe and Duddon Estuary SPA</b>	<b>Ribble and Alt Estuary SPA</b>
PVA model run type	simplescenarios	simplescenarios
Model to use for environmental stochasticity	betagamma	betagamma
Model for density dependence	Nod.	Nod.
Include demographic stochasticity in the model?	Yes	Yes
Number of simulations	5000	5000
Random seed	10	10
Years for burn-in	4	4
Case study selected	None	None
Species chosen to set initial values	Lesser black-backed gull	Lesser black-backed gull
Age at first breeding	5	5
Upper constraint on productivity in the model?	Yes, constrained to 4 per pair	Yes, constrained to 4 per pair
Number of sub-populations	1	1
Are demographic rates applied separately to each subpopulation?	No	No
Units for initial population size	Breeding Adults	Breeding Adults
Are baseline demographic rates specified separately for immatures?	Yes	Yes
Initial population values	1060 in 2022	8978 In 2022
Productivity rate per pair	Mean 0.530, SD 0.325	Mean 0.530, SD 0.325
Adult survival rate	Mean 0.885, SD 0.022	Mean 0.885, SD 0.022
Immature survival rate – age class 0 to 1	Mean 0.789, SD 0.092	Mean 0.789, SD 0.092
Immature survival rate – age class 1 to 2	Mean 0.855, SD 0.022	Mean 0.885, SD 0.022

Parameter	Morecambe and Duddon Estuary SPA		Ribble and Alt Estuary SPA	
Immature survival rate – age class 2 to 3	Mean 0.855, SD 0.022		Mean 0.885, SD 0.022	
Immature survival rate – age class 3 to 4	Mean 0.855, SD 0.022		Mean 0.885, SD 0.022	
Immature survival rate – age class 4 to 5	Mean 0.855, SD 0.022		Mean 0.885, SD 0.022	
Number of impact scenarios	1		1	
Are impacts applied separately to each subpopulation?	No		No	
Are impacts of scenarios specified separately for immatures?	No		No	
Are standard errors of impacts available?	No		No	
Should random seeds be matched for impact scenarios?	No		Yes	
Are impacts specified as a relative value or absolute harvest?	Relative		Relative	
Years in which impacts are assumed to begin and end	2028 to 2063		2028 to 2063	
Impact on productivity rate	None		None	
Impact on adult survival rate	Including Morecambe OWF 0.009659	Excluding Morecambe OWF 0.009480	Including Morecambe OWF 0.004430	Excluding Morecambe OWF 0.004326
First year to include in outputs	2028		2028	
Final year to include in outputs	2063		2063	
How should outputs be produced, in terms of ages?	Breeding Adults		Breeding Adults	

## 3 Results

### 3.1 Ornithology baseline

#### 3.1.1 Overview of bird species recorded

48. Population estimates for bird species were calculated using baseline data from the windfarm site and surrounding 4km buffer area (and also hybrid 10km buffer for red-throated diver) (**Table 3.1**). Occurrence estimated abundance and seasonal distribution for each species are outlined in species accounts below.

Table 3.1 Bird species apportioned population estimates (with 95% confidence intervals in parentheses) within the Morecambe Offshore Windfarm site + 4km buffer total area in 24 months of baseline surveys (March 2021 to February 2023), with species-specific seasons delineated (see \*)

Species	Year	J**	F	M	A	M	J	J	A	S	O	N	D
<b>Arctic skua</b> <i>Stercorarius parasiticus</i>	Mar 21-Feb 22	0	0	0	0	0	0	0	0	0	0	0	0
	Mar 22-Feb 23	0	0	0	0	0	0	0	0	4 (0 – 12)	0	0	0
<b>Arctic tern</b> <i>Sterna paradisaea</i>	Mar 21-Feb 22	0	0	0	0	0	0	0	13 (0 – 36)	9 (0 – 18)	0	0	0
	Mar 22-Feb 23	0	0	0	0	127 (57 – 200)	0	0	0	0	0	0	0
<b>Black-headed gull</b> <i>Chroicocephalus ridibundus</i>	Mar 21-Feb 22	0	4 (0 – 12)	0	0	0	0	0	0	0	0	0	0
	Mar 22-Feb 23	0	0	4 (0 – 12)	5 (0 – 12)	0	0	0	0	0	0	4 (0 – 12)	0
<b>Common gull</b> <i>Larus canus</i>	Mar 21-Feb 22	70 (36 – 109)	37 (16 – 63)	57 (12 – 109)	0	5 (0 – 16)	0	0	0	7 (0 – 21)	16 (0 – 35)	17 (0 – 36)	57 (20 – 100)
	Mar 22-Feb 23	16 (0 – 36)	30 (9 – 58)	4 (0 – 12)	4 (0 – 12)	1 (0 – 1)	0	0	9 (0 – 24)	0	8 (0 – 20)	64 (27 – 108)	132 (93 – 171)
<b>Common scoter</b>	Mar 21-		0	0	0	0	0	0	0	0	0	0	0

Species	Year	J**	F	M	A	M	J	J	A	S	O	N	D
<i>Melanitta nigra</i>	Feb 22	36 (0 – 108)											
	Mar 22-Feb 23	9 (0 – 20)	0	5 (0 – 12)	5 (0 – 12)	0	0	0	0	0	0	0	51 (0 – 133)
<b>Common tern</b> <i>Sterna hirundo</i>	Mar 21-Feb 22	0	0	0	0	0	0	0	8 (0 – 24)	27 (5 – 57)	0	0	0
	Mar 22-Feb 23	0	0	0	0	14 (2 – 32)	0	0	0	4 (0 – 12)	0	0	0
<b>Cormorant</b> <i>Phalacrocorax carbo</i>	Mar 21-Feb 22	0	0	0	0	0	0	0	0	0	0	0	0
	Mar 22-Feb 23	5 (0 – 13)	0	0	0	0	0	0	0	0	0	0	0
<b>Dunlin</b> <i>Calidris alpina</i>	Mar 21-Feb 22	0	0	0	0	0	0	0	0	0	0	0	0
	Mar 22-Feb 23	0	0	0	0	26 (0 – 67)	0	0	0	0	0	0	0
<b>Fulmar</b> <i>Fulmarus glacialis</i>	Mar 21-Feb 22	0	0	9 (0 – 20)	4 (0 – 12)	0	0	0	31 (12 – 57)	0	0	0	0
	Mar 22-	0	0	0	8 (0 – 24)	97 (23 – 210)	0	12 (0 – 27)	0	0	0	12 (0 – 24)	0

Species	Year	J**	F	M	A	M	J	J	A	S	O	N	D
	Feb 23												
<b>Gannet</b> <i>Morus bassanus</i>	Mar 21-Feb 22	0	0	29 (4 – 63)	13 (0 – 28)	68 (28 – 117)	9 (0 – 20)	288 (215 – 384)	864 (621 – 1160)	158 (78 – 245)	13 (0 – 25)	13 (0 – 37)	0
	Mar 22-Feb 23	0	0	0	36 (4 – 88)	467 (136 – 908)	53 (24 – 88)	188 (111 – 280)	133 (87 – 182)	40 (16 – 68)	28 (8 – 49)	9 (0 – 20)	0
<b>Great black-backed gull</b> <i>Larus marinus</i>	Mar 21-Feb 22	8 (0 – 20)	4 (0 – 12)	0	0	5 (0 – 12)	0	16 (4 – 31)	4 (0 – 12)	17 (0 – 43)	4 (0 – 12)	6 (0 – 14)	0
	Mar 22-Feb 23	9 (0 – 24)			17 (0 – 44)	88 (8 – 216)	0	0	5 (0 – 12)	5 (0 – 13)	21 (4 – 40)	9 (0 – 20)	17 (0 – 41)
<b>Great skua</b> <i>Stercorarius skua</i>	Mar 21-Feb 22	0	0	0	0	4 (0 – 12)	0	0	5 (0 – 16)	0	0	0	0
	Mar 22-Feb 23	0	0	0	0	0	0	0	0	0	0	0	0
<b>Guillemot</b> <i>Uria aalge</i>	Mar 21-Feb 22	1870 (1192 – 2627)	2575 (1839 – 3401)	5557 (4478 – 6644)	1011 (861 – 1154)	715 (461 – 1028)	895 (581 – 1281)	7260 (6011 – 8479)	13110 (9325 – 17151)	640 (340-955)	4286 (3064 – 5650)	3257 (2439 – 4408)	216 (128 – 333)
	Mar 22-Feb 23	939 (677 – 1195)	1031 (785 – 1280)	817 (495 – 1171)	1543 (1113 – 2057)	7639 (5207 – 11128)	3547 (2360 – 4882)	10929 (7957 – 14140)	11415 (10162-12929)	8957 (8136 – 9816)	7775 (6890 – 8766)	2737 (2217 – 3367)	3836 (3396 – 4338)



Species	Year	J**	F	M	A	M	J	J	A	S	O	N	D
<b>Herring gull</b> <i>Larus argentatus</i>	Mar 21-Feb 22	43 (4 – 101)	33 (16 – 52)	134 (55 – 236)	13 (0 – 31)	0	9 (0 – 25)	12 (0 – 28)	48 (0 – 137)	178 (10 – 469)	49 (0 – 144)	28 (4 – 57)	17 (0 – 36)
	Mar 22-Feb 23	134 (12 – 350)	60 (16 – 130)	24 (8 – 44)	49 (18 – 84)	198 (44 – 460)	21 (4 – 40)	49 (12 – 104)	50 (0 – 142)	17 (4 – 32)	57 (0 – 151)	132 (52 – 232)	162 (97 – 246)
<b>Kittiwake</b> <i>Rissa tridactyla</i>	Mar 21-Feb 22	27 (7 – 55)	53 (16 – 95)	611 (419 – 839)	221 (142 – 308)	423 (181 – 765)	417 (155 – 860)	217 (75 – 463)	2895 (681 – 5772)	3247 (1122 – 5937)	85 (40 – 135)	385 (243 – 563)	111 (76 – 144)
	Mar 22-Feb 23	105 (61 – 153)	236 (172 – 300)	511 (423 – 601)	998 (398 – 2060)	1015 (450 – 1968)	497 (362 – 633)	1290 (737 – 1987)	649 (473 – 850)	874 (564 – 1358)	317 (131 – 535)	433 (317 – 568)	386 (265 – 516)
<b>Lesser black-backed gull</b> <i>Larus fuscus</i>	Mar 21-Feb 22	5 (0 – 12)	17 (4 – 32)	5 (0 – 12)	0	4 (0 – 12)	0	33 (12 – 56)	129 (23 – 280)	136 (37 – 264)	5 (0 – 12)	0	0
	Mar 22-Feb 23	4 (0 – 12)	0	17 (0 – 36)	9 (0 – 20)	67 (13 – 148)	5 (0 – 12)	71 (34 – 115)	55 (20 – 97)	55 (8 – 119)	15 (0 – 40)	9 (0 – 20)	0
<b>Little gull</b> <i>Hydrocoloeus minutus</i>	Mar 21-Feb 22	12 (0 – 24)	13 (0 – 28)	36 (12 – 60)	0	0	0	0	0	0	0	13 (0 – 32)	9 (0 – 21)
	Mar 22-Feb 23	108 (43 – 185)	363 (196 – 554)	4 (0 – 12)	21 (8 – 36)	0	0	0	0	0	5 (0 – 13)	24 (4 – 49)	239 (170 – 308)
<b>Manx shearwater</b> <i>Puffinus puffinus</i>	Mar 21-Feb 22	0	0	0	25 (0 – 60)	43 (8 – 92)	0	8699 (4654)	3926 (2463 – 5760)	8 (0 – 21)	0	0	0

Species	Year	J**	F	M	A	M	J	J	A	S	O	N	D
								- 13401)					
	Mar 22-Feb 23	0	0	0	15 (0 - 33)	3697 (2183 - 5499)	2403 (711 - 4549)	1948 (1088 - 2921)	3344 (2004 - 4847)	786 (98 - 2087)	0	0	0
<b>Puffin</b> <i>Fratercula arctica</i>	Mar 21-Feb 22	0	0	12 (3 - 22)	29 (5 - 58)	0	0	85 (50 - 123)	45 (19 - 77)	0	0	9 (2 - 20)	0
	Mar 22-Feb 23	0	0	0	16 (2 - 38)	33 (12 - 56)	12 (0 - 30)	0	0	3 (0 - 6)	16 (5 - 29)	41 (16 - 68)	0
<b>Razorbill</b> <i>Alca torda</i>	Mar 21-Feb 22	164 (64 - 299)	524 (367 - 683)	736 (403 - 1181)	350 (150 - 606)	32 (11 - 62)	12 (0 - 29)	40 (15 - 73)	21 (1 - 49)	9 (0 - 24)	924 (555 - 1344)	471 (272 - 710)	126 (70 - 192)
	Mar 22-Feb 23	330 (197 - 482)	780 (543 - 1050)	525 (354 - 706)	265 (147 - 392)	175 (111 - 242)	255 (31 - 660)	35 (10 - 65)	0	1 (0 - 1)	799 (435 - 1275)	244 (127 - 373)	1282 (868 - 1702)
<b>Red-throated diver</b> <i>Gavia stellata</i> (square brackets = windfarm site + 10km estimated population)	Mar 21-Feb 22	0 [0]	4 (0 - 12) [9 (0 - 20)]	0 [0]	0 [8 (0 - 20)]	0 [0]	0 [0]	0 [0]	0 [0]	0 [0]	0 [0]	5 (0 - 12) [8 (0 - 20)]	12 (0 - 28) [51 (16 - 90)]
	Mar 22-Feb 23	0 [24 (0 - 57)]	0 [24 (4 - 49)]	8 (0 - 20) [64	0 [0]	0 [5 (0 - 13)]	0 [0]	0 [0]	0 [0]	0 [0]	0 [0]	0 [5 (0 - 13)]	12 (0 - 27) [5

Species	Year	J**	F	M	A	M	J	J	A	S	O	N	D
				(24 - 116)]									(0 - 12)]
<b>Sandwich tern</b> <i>Thalasseus sandvicensis</i>	Mar 21-Feb 22	0	0	0	0	0	0	0	0	43 (0 - 99)	13 (0 - 36)	0	0
	Mar 22-Feb 23	0	0	0	0	0	4 (0 - 12)	9 (0 - 31)	0	16 (0 - 36)	0	0	0
<b>Shag</b> <i>Gulosus aristotelis</i>	Mar 21-Feb 22	0	0	0	0	0	0	0	0	0	0	0	0
	Mar 22-Feb 23	0	0	0	0	0	0	0	8 (0 - 24)	0	0	0	0
<b>Snipe</b> <i>Gallinago gallinago</i>	Mar 21-Feb 22	0	0	0	0	0	0	0	0	0	8 (0 - 24)	0	0
	Mar 22-Feb 23	0	0	0	0	0	0	0	0	0	0	0	0

\* For seabird species, **dark blue** = breeding season (full breeding season in all species, based on Furness 2015, except common scoter, snipe, dunlin, black-headed gull and common gull from SNH 2014), **mid blue** = migratory periods (months which do not overlap with the migration free or full breeding season), white = non-breeding/winter breeding season.

\*\* The January 2023 survey was delayed to early February 2023 due to lack of available weather windows, therefore two surveys were carried out in February 2023 to compensate. The early February 2023 survey data are presented in the January column, and the late February 2023 data are presented in the February column.

### 3.1.2 Summary species accounts

49. The following sections provide an overview of species recorded during the two years of site-specific aerial surveys. The information summarises the apportioned peak abundance estimates (presented in **Annex 1**) within the windfarm site and buffers (2km, 4km and 10km) relevant to the assessment.

#### 3.1.2.1 Arctic skua

50. Arctic skua were recorded within the 4km buffer in September 2022 only, during the autumn migration period for the species (Furness 2015). The estimated peak windfarm site + 4km buffer population was four individuals. There were no records of Arctic skua within the windfarm site or 2km buffer.

#### 3.1.2.2 Arctic tern

51. Arctic tern and 'commic' tern (common tern/arctic tern indeterminate) were recorded during baseline surveys in August and September 2021, and May 2022. Although May and early August are classed by Furness (2015) as part of the Arctic tern breeding season, records during baseline surveys are considered to be of birds during return and post-breeding migration respectively, due to the timing, distance from breeding colonies and the representative foraging range around these colonies (Woodward *et al* 2019). September is also considered to be part of the return migration season.

52. Following apportioning of indeterminate common/arctic terns to species, the estimated peak windfarm site population of Arctic tern was 89 individuals in May 2022 (127 individuals in the windfarm site + 4km buffer).

#### 3.1.2.3 Black-headed gull

53. Black-headed gull were recorded in small numbers in February 2022 and March 2022 within the windfarm site, i.e., within the non-breeding period for the species. There were further records in April 2022 and November 2022 within the 2km and 4km buffers. The estimated peak windfarm site and windfarm site + 4km populations were four and five individuals respectively.

#### 3.1.2.4 Common gull

54. Common gull were recorded within the windfarm site predominantly during the species' non-breeding season (September to March inclusive) with a small number of occurrences during the breeding season (May 2021 and May 2022). Further occurrences were noted within the 2km and 4km buffers during the breeding season (April 2022 and August 2022); these were likely to be late returning/early post-breeding migrants respectively. The estimated peak windfarm

site and windfarm site + 4km buffer populations were 56 individuals and 132 individuals, respectively (both in December 2022).

#### **3.1.2.5 Common scoter**

55. Common scoter were recorded within the windfarm site in December 2022 and February 2023 (during the non-breeding period), with an estimated peak population of 28 individuals (51 individuals in the windfarm site + 4km buffer). There were further occurrences in the 4km buffer during January, March and April 2022.

#### **3.1.2.6 Common tern**

56. Common tern and 'commic' tern (common tern/arctic tern indeterminate) were recorded during baseline surveys in August and September 2021, and May 2022. Although May and early August are classed by Furness (2015) as part of the common tern breeding season, records during baseline surveys are considered to be of birds during return and post-breeding migration respectively, due to the timing, distance from breeding colonies and the representative foraging range for this species around these colonies (Woodward *et al* 2019). September is also considered to be part of the return migration season.
57. Following apportioning of indeterminate common/arctic terns to species, the estimated peak windfarm site population of common tern was 24 individuals in September 2022 (29 individuals in the windfarm site + 4km buffer area).

#### **3.1.2.7 Cormorant**

58. There was one occurrence of cormorant, in February 2023 within the 4km buffer only (this species was not recorded within the windfarm site or 2km buffer). The estimated peak windfarm site +4km buffer population was five individuals.

#### **3.1.2.8 Dunlin**

59. Dunlin occurred during May 2022 only within the windfarm site and buffers. The estimated peak windfarm site and windfarm site +4km buffer populations were five individuals and 26 individuals respectively. Although May is classed as part of the dunlin breeding season (SNH, 2014), records of this species during baseline surveys are considered to be of birds migrating through the site on return passage to breeding areas.

#### **3.1.2.9 Fulmar**

60. Fulmar were recorded in the windfarm site in March, April and August 2021, and May and July 2022; there were also records in the 4km buffer in April and November 2022. Numbers recorded were generally small, although there were peaks in August 2021 and May 2022. The estimated peak windfarm site and

windfarm site +4km populations were 45 individuals and 100 individuals, respectively (both in May 2022).

#### **3.1.2.10 Gannet**

61. Gannet occurred within the windfarm site + 4km buffer in all months of the species' defined breeding season (March to September; Furness 2015), with occurrences of birds within the windfarm site itself during all surveys between April and September. The estimated peak windfarm site and windfarm site + 4km buffer populations were 427 individuals and 864 individuals, respectively (both in August 2021).
62. Gannet were also recorded within the windfarm site albeit in smaller numbers in the autumn passage period (October, November; Furness 2015). The estimated peak windfarm site and windfarm site + 4km buffer populations during the autumn passage period were five and 28 individuals in November 2022 and October 2022 respectively. Within the return migration period (December to March), gannet were recorded within the 2km and 4km buffers in March 2021 only.

#### **3.1.2.11 Great black-backed gull**

63. Great black-backed gull were recorded within the windfarm site within the species' breeding season (August 2021, April and May 2022) and non-breeding season (November 2021, October to December 2022). There were further records in the 4km buffer in May, July, September, October and November 2021; January, February, August and September 2022, and February 2023).
64. The estimated peak windfarm site and windfarm site + 4km buffer populations during the breeding period were 31 and 88 individuals respectively (both May 2022). The estimated mean peak windfarm site and windfarm site + 4km buffer populations during the non-breeding period were 12 individuals (December 2022) and 21 individuals (October 2022) respectively.

#### **3.1.2.12 Great skua**

65. No great skua were recorded within the windfarm site during the first year of baseline surveys, but birds were recorded in the surrounding 2km and 4km buffers in May and August 2021 (i.e., within the species' breeding season or post-breeding migration). The estimated peak windfarm site + 4km population was five individuals. There were no records of great skua within the windfarm site and buffers during the second year of surveys; this species is known to have been significantly impacted by the ongoing Highly Pathogenic Avian Influenza (HPAI) outbreak, which has led to mass mortality of adult birds at UK colonies (Banyard *et al*, 2022).



### 3.1.2.13 Guillemot

66. Baseline surveys recorded guillemot in all months, including within the windfarm site in all months (i.e., within both the breeding and non-breeding seasons; Furness 2015). The estimated mean peak windfarm site and windfarm site + 4km populations during the breeding season were 4,418 individuals and 10,929 individuals respectively (both in July 2021). Taking into account availability bias, the estimated peak windfarm site and windfarm site + 4km buffer populations during the non-breeding season were 5,758 individuals and 13,110 individuals respectively (both in August 2021). Overall, guillemot was the most abundant of the three auk species within the windfarm site and buffer zones.

### 3.1.2.14 Herring gull

67. Baseline surveys recorded herring gull within the windfarm site in February, March, July and November 2021 during the first year of surveys; and all months except September 2022 in the second year of surveys. There were further occurrences in the 2km and 4km buffers in all surveyed months except May 2021. The estimated peak windfarm site and windfarm site + 4km populations were 66 individuals and 198 individuals respectively, both in May 2022.

### 3.1.2.15 Kittiwake

68. Kittiwake were recorded in all surveyed months within the windfarm site and buffers, with the highest numbers present at the end of the species' breeding season and beginning of the autumn migration period. The estimated mean peak windfarm site and windfarm site + 4km populations during the breeding season were 415 individuals and 2,895 individuals respectively (both in August 2021). The estimated peak windfarm site and windfarm site + 4km populations during the autumn migration period were 1,904 individuals and 3,247 individuals, respectively (both in September 2021).

### 3.1.2.16 Lesser black-backed gull

69. Baseline surveys recorded lesser black-backed gull in the windfarm site + 4km buffer area in all months except December, with occurrences in the windfarm site itself between February and October. The highest numbers were present at the end of the species' breeding season and beginning of the autumn migration period. The estimated mean peak windfarm site and windfarm site + 4km populations during the breeding season were 30 individuals and 129 individuals respectively (both in August 2021). The estimated peak windfarm site and windfarm site + 4km populations during the autumn migration period were 29 individuals and 136 individuals, respectively (both in September 2021).

### **3.1.2.17 Little gull**

70. Within the windfarm site, little gull were recorded exclusively within the species' non-breeding period (August to March). There were a small number of occurrences during the breeding period (April 2022) within the 2km and 4km buffers that were likely to have been birds on return migration. The estimated peak windfarm site and windfarm site + 4km buffer populations were 172 individuals and 363 individuals, in December 2022 and February 2023 respectively.

### **3.1.2.18 Manx shearwater**

71. Manx shearwater occurred within the windfarm site and buffers predominantly during the species' breeding season (April to August; Furness 2015) with smaller numbers recorded during the post-breeding migration period (September). The estimated peak windfarm site and windfarm site + 4km buffer populations during the breeding season were 4,465 individuals and 8,699 individuals respectively (both in July 2021). The estimated mean peak windfarm site and windfarm site + 4km buffer populations during the post-breeding period were 19 individuals and 786 individuals respectively.

### **3.1.2.19 Puffin**

72. During the species' breeding season, puffin were recorded within the windfarm site in July and August 2021, and April, May and June 2022. There were further occurrences in the non-breeding period, in March and November 2021, and October and November 2022. The estimated peak windfarm site and windfarm site + 4km breeding season populations were 23 individuals and 85 individuals respectively (both in July 2021). The estimated peak windfarm site and windfarm site + 4km buffer populations in the non-breeding period were 19 individuals and 41 individuals respectively (both in November 2022).

### **3.1.2.20 Razorbill**

73. Baseline surveys recorded razorbill in all surveyed months except September 2021 and August 2022, with the highest numbers of birds occurring during the species' post-breeding migration and winter periods. The estimated peak windfarm site and windfarm site + 4km buffer populations were 607 individuals and 1,282 individuals respectively (both in December 2022, which lies within the species' winter period).

### **3.1.2.21 Red-throated diver**

74. Red-throated divers were recorded during months within the species' autumn migration, wintering, and spring migration seasons (Furness 2015), within the windfarm site + 10km buffer area surveyed specifically for the species. Birds occurred within the windfarm site + 10km buffer area in April, November and

December 2021; February, March, May, November and December 2022; and February 2023. Birds occurred within the windfarm site in December 2021, March 2022 and December 2022 only. The estimated peak windfarm site, windfarm site + 4km buffer and windfarm site + 10km buffer populations were five individuals (March 2022), 13 individuals (December 2021) and 64 individuals (March 2022) respectively.

#### **3.1.2.22 Sandwich tern**

75. Sandwich tern were recorded during baseline surveys predominantly within the post-breeding migration period (September and October) although there were also occurrences within the 2km and 4km buffers during the breeding season (June and July 2022). Within the windfarm site, this species was recorded in September 2021 and September 2022 only. The estimated peak windfarm site and windfarm site + 4km buffer populations were 36 individuals and 43 individuals, respectively (both in September 2021).

#### **3.1.2.23 Shag**

76. Shag occurred during August 2022 within the 2km and 4km buffers only; there were no records within the windfarm site itself. Although August is classed as part of the shag breeding season (Furness 2015), records of this species during baseline surveys are considered likely to be post-breeding birds. The estimated peak windfarm site +4km buffer population was nine individuals.

#### **3.1.2.24 Snipe**

77. Snipe occurred within the 4km buffer only during one survey, in October 2021 which lies within the species' autumn passage period. The estimated peak windfarm site + 4km buffer population was nine individuals.

### 3.1.3 Apportioning impacts to SPA breeding seabird populations

78. The results of the breeding season apportioning for the seven breeding seabird species using the NatureScot apportioning tool (2018) are presented in **Table 3.2** to **Table 3.9**. Refer to **Section 2.1.1** for details of the apportioning approach. Further details on the contributions of non-SPA colonies can be found in **Annex 2**.

Table 3.2 Apportioning of Lesser Black-backed Gull present within the Project site to all qualifying SPA's with connectivity

Master Site	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Bowland Fells SPA</b>	29254	69.2	4788.50	2.443	1.9884	39.69%
<b>Ribble and Alt Estuaries SPA</b>	8978	43.66	1906.20	2.743	1.7210	34.36%
<b>Morecambe Bay and Duddon Estuary SPA</b>	1786	47.55	2261.19	2.545	0.2679	5.35%
<b>Lambay Island SPA</b>	952	165.17	27281.46	2.340	0.0109	0.22%
<b>Ailsa Craig SPA</b>	378	203.90	41576.84	2.259	0.0027	0.05%
<b>(All other Colonies in Range)</b>	(29920)	(36.27-235.38)	-	-	-	(20.33%)
<b>Totals</b>	<b>72320</b>	-	<b>4163085.21</b>	<b>432.045</b>	<b>5.0094</b>	-

Table 3.3 Apportioning of Lesser Black-backed Gull present within the Project site to Qualifying Coastal SPA's with connectivity

Master Site	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Ribble and Alt Estuaries SPA</b>	8978	43.66	1906.20	2.743	4.6391	60.94%
<b>Morecambe Bay and Duddon Estuary SPA</b>	1786	47.55	2261.19	2.550	0.7233	9.50%
<b>Lambay Island SPA</b>	952	165.17	27281.46	2.340	0.0293	0.39%
<b>Ailsa Craig SPA</b>	378	203.90	41576.84	2.259	0.0074	0.10%
<i>(All other Colonies in Range)</i>	9957	<i>(36.27-235.38)</i>	-	-	-	<i>(29.07%)</i>
<b>Totals</b>	<b>22051</b>	-	<b>1775963.64</b>	<b>224.250</b>	<b>7.6124</b>	-



Table 3.4 Apportioning of Manx Shearwater present within the Project site to qualifying SPA's with connectivity

Master Site	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfro SPA</b>	910312	277.61	77066.76	1.466	2.7085	76.54%
<b>Aberdaron Coast and Bardsey Island SPA</b>	32366	156.67	24544.24	1.480	0.3054	8.63%
<b>Rum SPA</b>	240000	433.11	187586.00	1.493	0.2988	8.44%
<b>Copeland Islands SPA</b>	9700	168.21	28294.27	1.467	0.0787	2.22%
<b>Blasket Islands SPA</b>	39068	611.54	373975.06	1.328	0.0217	0.61%
<b>Puffin Island SPA</b>	12658	580.47	336943.10	1.330	0.0078	0.22%
<b>St Kilda SPA</b>	9606	553.82	306711.05	1.478	0.0072	0.20%
<b>Cruagh SPA</b>	6572	623.30	388506.63	1.349	0.0036	0.10%
<b>Deenish Island and Scariff Island SPA</b>	4622	570.28	325214.72	1.333	0.0030	0.08%
<b>Skelligs SPA</b>	1476	581.59	338242.28	1.326	0.0009	0.03%
<i>(All other Colonies in Range)</i>	<i>(1299546)</i>	<i>(86.73-1077.13)</i>	-	-	-	<i>(2.91%)</i>
<b>Totals</b>	<b>1299546</b>	-	<b>11335803.6</b>	<b>55.756</b>	<b>3.5385</b>	-

Table 3.5 Apportioning of gannet present within the Project site to qualifying SPA's with connectivity

Master Site	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Ailsa Craig SPA</b>	66452	203.90	41576.84	1.530	0.6658	50.78%
<b>Grassholm SPA</b>	72022	276.61	76515.31	1.607	0.4118	31.41%
<b>Saltee Islands SPA</b>	9444	280.31	78572.58	1.510	0.0494	3.77%
<i>(All other Colonies in Range)</i>	<i>(7436)</i>	<i>(69.62-427.6)</i>	-	-	-	<i>(14.04%)</i>
<b>Totals</b>	<b>155354</b>	-	<b>653232.68</b>	<b>15.443</b>	<b>1.3112</b>	-

Table 3.6 Apportioning of herring gull present within the Project site to Qualifying SPA's with connectivity

Master Site	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Morecambe Bay and Duddon Estuary SPA</b>	1558	47.55	2261.19	2.028	0.1645	15.37%
<i>(All other Colonies in Range)</i>	<i>(12742)</i>	<i>(15.5-89.25)</i>	-	-	-	<i>(84.63%)</i>
<b>Totals</b>	<b>14300</b>	-	<b>223745.82</b>	<b>132.903</b>	<b>1.0703</b>	-

Table 3.7 Apportioning of kittiwake present within the Project Site to qualifying SPA's with connectivity

Master Site	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Rathlin Island SPA</b>	27560	245.00	60024.02	3.129	0.3006	6.27%
<b>Howth Head Coast SPA</b>	6162	170.25	28985.06	2.566	0.1141	2.38%
<b>Lambay Island SPA</b>	6640	165.171	27281.46	2.186	0.1113	2.32%
<b>Ireland's Eye SPA</b>	3220	170.319	29008.56	2.153	0.0500	1.04%
<b>Wicklow Head SPA</b>	1348	186.229	34681.24	2.358	0.0192	0.40%
<b>Saltee Islands SPA</b>	1700	280.31	78572.57	3.290	0.0149	0.31%
<b>Ailsa Craig SPA</b>	980	204.23	41708.26	2.602	0.0128	0.27%
<b><i>(All other Colonies in Range)</i></b>	<i>(29367)</i>	<i>(15.5-306.32)</i>	-	-	-	<i>(87.00%)</i>
<b>Totals</b>	<b>76977</b>	-	<b>2389300.53</b>	<b>148.366</b>	<b>4.7905</b>	-

Table 3.8 Apportioning of puffin present within the Project site to qualifying SPA's with connectivity

Master Site	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfro SPA	50699	276.09	76225.14	1.733	0.2759	54.40%
Lambay Island SPA	288	165.17	27281.46	2.296	0.0058	1.14%
Rathlin Island SPA	411	245.00	60024.02	1.957	0.0032	0.63%
<i>(All other Colonies in Range)</i>	<i>(4028)</i>	<i>(53.9-268.33)</i>	-	-	-	<i>(43.82%)</i>
<b>Totals</b>	<b>55426</b>	-	<b>1059505.40</b>	<b>79.828</b>	<b>0.5072</b>	-

Table 3.9 Apportioning of razorbill present within the Project site to qualifying SPA's with connectivity

Master Site	Colony Population (with 1.34 correction)	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
Lambay Island SPA	9853.02	165.17	27281.46	2.125	0.2374	24.74%
<i>(All other Colonies in Range)</i>	<i>(12219.46)</i>	<i>(53.09-170.87)</i>	-	-	-	<i>(75.26%)</i>
<b>Totals</b>	<b>22072.48</b>	-	<b>428890.21</b>	<b>62.828</b>	<b>0.9593</b>	-

### 3.1.4 Collision risk modelling

#### 3.1.4.1 Standard CRM

79. **Table 3.10** to **Table 3.25** present estimated monthly and annual collision estimates by species calculated from the sCRM (Option 2) for the Project.

Table 3.10 Red-throated diver – predicted collisions per month, stochastic CRM, Option 2, Nocturnal Activity Factor (NAF) 0

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Mean</b>	0	0	0	0	0	0	0	0	0	0	0	0.044	0.044
<b>SD</b>	0	0	0	0	0	0	0	0	0	0	0	0.079	0.079
<b>CV</b>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.791	1.791
<b>Median</b>	0	0	0	0	0	0	0	0	0	0	0	0.014	0.014
<b>2.5%</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>25%</b>	0	0	0	0	0	0	0	0	0	0	0	0.005	0.005
<b>75%</b>	0	0	0	0	0	0	0	0	0	0	0	0.045	0.045
<b>97.5%</b>	0	0	0	0	0	0	0	0	0	0	0	0.291	0.291

Table 3.11 Manx shearwater – predicted collisions per month, stochastic CRM, Option 2, NAF 0.5

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Mean</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>SD</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>CV</b>	n/a	n/a	n/a	1.13	1.069	1.105	1.056	1.025	1.121	n/a	n/a	n/a	0.872
<b>Median</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>2.5%</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>25%</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>75%</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>97.5%</b>	0	0	0	0	0	0	0	0	0	0	0	0	0



Table 3.12 Gannet – predicted collisions per month, stochastic CRM, Option 2, NAF 0.08 (excluding 70% macro-avoidance correction)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Mean</b>	0	0	0	0.132	0.378	0.058	0.253	2.921	0.396	0	0.066	0	4.204
<b>SD</b>	0	0	0	0.202	0.524	0.104	0.394	3.431	0.527	0	0.127	0	3.8
<b>CV</b>	n/a	n/a	n/a	1.532	1.388	1.784	1.556	1.174	1.331	n/a	1.925	n/a	0.904
<b>Median</b>	0	0	0	0	0	0	0	1.082	0.207	0	0	0	2.795
<b>2.5%</b>	0	0	0	0	0	0	0	0	0	0	0	0	0.233
<b>25%</b>	0	0	0	0	0	0	0	0.19	0.066	0	0	0	1.217
<b>75%</b>	0	0	0	0.202	0.654	0.096	0.388	5.194	0.507	0	0.099	0	6.501
<b>97.5%</b>	0	0	0	0.691	1.736	0.361	1.316	11.041	2.054	0	0.419	0	13.777

Table 3.13 Little gull – predicted collisions per month, stochastic CRM, Option 2 – NAF 0.25

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Mean</b>	0.328	0.647	0.044	0	0	0	0	0	0	0	0.047	1.852	2.918
<b>SD</b>	0.362	0.722	0.076	0	0	0	0	0	0	0	0.076	1.97	2.132
<b>CV</b>	1.103	1.117	1.723	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.602	1.064	0.731
<b>Median</b>	0.184	0.242	0	0	0	0	0	0	0	0	0	0	2.586
<b>2.5%</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>25%</b>	0	0	0	0	0	0	0	0	0	0	0	0	0.957
<b>75%</b>	0.641	1.277	0.089	0	0	0	0	0	0	0	0.086	3.675	4.698
<b>97.5%</b>	1.049	2.077	0.251	0	0	0	0	0	0	0	0.258	5.215	6.805

Table 3.14 Kittiwake – predicted collisions per month, stochastic CRM, Option 2 – NAF 0.375±0.0637

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Mean</b>	0.173	0.453	2.722	1.174	3.275	2.741	3.423	2.991	5.048	0.372	1.747	1.327	25.445
<b>SD</b>	0.154	0.243	0.725	1.094	1.386	1.127	2.897	1.984	2.859	0.231	1.125	0.645	6.423
<b>CV</b>	0.895	0.536	0.266	0.932	0.423	0.411	0.846	0.663	0.566	0.621	0.644	0.486	0.252
<b>Median</b>	0.134	0.445	2.695	0.535	3.057	2.732	1.563	2.909	3.784	0.354	1.45	1.174	24.943
<b>2.5%</b>	0	0	1.471	0	1.226	0.848	0.585	0.3	1.566	0	0.218	0.418	14.496
<b>25%</b>	0	0.283	2.173	0.208	2.27	1.81	1.006	1.249	2.64	0.203	0.784	0.868	20.707
<b>75%</b>	0.261	0.62	3.204	2.139	4.072	3.529	5.711	4.421	7.379	0.516	2.656	1.666	29.795
<b>97.5%</b>	0.516	0.941	4.355	3.298	6.658	4.977	9.635	7.071	11.006	0.884	4.025	2.93	39.152

Table 3.15 Black-headed gull – predicted collisions per month, stochastic CRM, Option 2 – NAF 0.5

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Mean</b>	0	0.066	0	0	0	0	0	0	0	0	0	0	0.066
<b>SD</b>	0	0.064	0	0	0	0	0	0	0	0	0	0	0.064
<b>CV</b>	n/a	0.977	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.977
<b>Median</b>	0	0.046	0	0	0	0	0	0	0	0	0	0	0.046
<b>2.5%</b>	0	0.004	0	0	0	0	0	0	0	0	0	0	0.004
<b>25%</b>	0	0.022	0	0	0	0	0	0	0	0	0	0	0.022
<b>75%</b>	0	0.088	0	0	0	0	0	0	0	0	0	0	0.088
<b>97.5%</b>	0	0.232	0	0	0	0	0	0	0	0	0	0	0.232

Table 3.16 Common gull – predicted collisions per month, stochastic CRM, Option 2 – NAF 0.5

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Mean</b>	0.354	0.213	0.073	0	0	0	0	0	0	0.076	0.439	1.236	2.392
<b>SD</b>	0.452	0.221	0.125	0	0	0	0	0	0	0.128	0.348	1.026	1.259
<b>CV</b>	1.275	1.036	1.721	n/a	n/a	n/a	n/a	n/a	n/a	1.676	0.793	0.83	0.526
<b>Median</b>	0	0.182	0	0	0	0	0	0	0	0	0.392	0.831	2.198
<b>2.5%</b>	0	0	0	0	0	0	0	0	0	0	0	0.129	0.641
<b>25%</b>	0	0	0	0	0	0	0	0	0	0	0.208	0.397	1.454
<b>75%</b>	0.682	0.315	0.132	0	0	0	0	0	0	0.139	0.659	1.912	3.081
<b>97.5%</b>	1.44	0.751	0.429	0	0	0	0	0	0	0.392	1.253	3.519	5.28

Table 3.17 Herring gull – predicted collisions per month, stochastic CRM, Option 2 – NAF 0.375±0.0637

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Mean</b>	0.408	0.38	0.579	0.188	0.356	0.171	0.298	0.18	0	0.594	0	0.995	4.149
<b>SD</b>	0.676	0.355	0.505	0.323	0.479	0.288	0.33	0.346	0	0.794	0	1.173	2.083
<b>CV</b>	1.656	0.934	0.873	1.717	1.345	1.685	1.108	1.924	n/a	1.337	n/a	1.179	0.502
<b>Median</b>	0	0.332	0.461	0	0	0	0.246	0	0	0	0	0.471	3.908
<b>2.5%</b>	0	0	0	0	0	0	0	0	0	0	0	0	0.968
<b>25%</b>	0	0	0.273	0	0	0	0	0	0	0	0	0	2.629
<b>75%</b>	0.727	0.571	0.818	0.338	0.644	0.317	0.407	0.311	0	1.053	0	1.855	5.324
<b>97.5%</b>	2.131	1.253	1.76	1.103	1.597	0.947	1.138	1.171	0	2.543	0	3.763	9.213

Table 3.18 Lesser black-backed gull – predicted collisions per month, stochastic CRM, Option 2 – NAF 0.375±0.0637

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Mean</b>	0	0.147	0.145	0	0.361	0	0.461	1.201	1.252	0	0	0	3.567
<b>SD</b>	0	0.253	0.278	0	0.374	0	0.43	0.975	1.571	0	0	0	2.268
<b>CV</b>	n/a	1.713	1.922	n/a	1.036	n/a	0.934	0.811	1.255	n/a	n/a	n/a	0.636
<b>Median</b>	0	0	0	0	0.306	0	0.379	0.948	0.58	0	0	0	3.027
<b>2.5%</b>	0	0	0	0	0	0	0	0	0	0	0	0	0.91
<b>25%</b>	0	0	0	0	0	0	0.163	0.514	0.221	0	0	0	2.007
<b>75%</b>	0	0.254	0.224	0	0.52	0	0.662	1.595	1.808	0	0	0	4.431
<b>97.5%</b>	0	0.8	0.936	0	1.268	0	1.517	3.581	5.629	0	0	0	9.239



Table 3.19 Great black-backed gull – predicted collisions per month, stochastic CRM, Option 2 – NAF 0.375±0.0637

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Mean</b>	0	0	0	0.209	0.45	0	0	0	0	0	0.446	0.645	1.75
<b>SD</b>	0	0	0	0.399	0.796	0	0	0	0	0	0.433	1.198	1.562
<b>CV</b>	n/a	n/a	n/a	1.905	1.768	n/a	n/a	n/a	n/a	n/a	0.972	1.856	0.892
<b>Median</b>	0	0	0	0	0	0	0	0	0	0	0.423	0	1.37
<b>2.5%</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>25%</b>	0	0	0	0	0	0	0	0	0	0	0	0	0.52
<b>75%</b>	0	0	0	0.38	0.85	0	0	0	0	0	0.652	1.214	2.552
<b>97.5%</b>	0	0	0	1.338	2.776	0	0	0	0	0	1.463	3.774	5.54

Table 3.20 Sandwich tern – predicted collisions per month, stochastic CRM, Option 2 – NAF 0.0

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Mean</b>	0	0	0	0	0	0	0	0	0.329	0	0	0	0.329
<b>SD</b>	0	0	0	0	0	0	0	0	0.284	0	0	0	0.284
<b>CV</b>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.862	n/a	n/a	n/a	0.862
<b>Median</b>	0	0	0	0	0	0	0	0	0.25	0	0	0	0.25
<b>2.5%</b>	0	0	0	0	0	0	0	0	0.019	0	0	0	0.019
<b>25%</b>	0	0	0	0	0	0	0	0	0.137	0	0	0	0.137
<b>75%</b>	0	0	0	0	0	0	0	0	0.42	0	0	0	0.42
<b>97.5%</b>	0	0	0	0	0	0	0	0	1.067	0	0	0	1.067

Table 3.21 Common tern – predicted collisions per month, stochastic CRM, Option 2 – NAF 0.0

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Mean</b>	0	0	0	0	0.076	0	0	0	0.14	0	0	0	0.216
<b>SD</b>	0	0	0	0	0.058	0	0	0	0.103	0	0	0	0.125
<b>CV</b>	n/a	n/a	n/a	n/a	0.763	n/a	n/a	n/a	0.734	n/a	n/a	n/a	0.579
<b>Median</b>	0	0	0	0	0.064	0	0	0	0.117	0	0	0	0.194
<b>2.5%</b>	0	0	0	0	0.004	0	0	0	0.006	0	0	0	0.048
<b>25%</b>	0	0	0	0	0.031	0	0	0	0.06	0	0	0	0.126
<b>75%</b>	0	0	0	0	0.11	0	0	0	0.202	0	0	0	0.285
<b>97.5%</b>	0	0	0	0	0.224	0	0	0	0.373	0	0	0	0.52

Table 3.22 Arctic tern – predicted collisions per month, stochastic CRM, Option 2 – NAF 0.0

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Mean</b>	0	0	0	0	0.351	0	0	0	0.019	0	0	0	0.37
<b>SD</b>	0	0	0	0	0.434	0	0	0	0.028	0	0	0	0.45
<b>CV</b>	n/a	n/a	n/a	n/a	1.236	n/a	n/a	n/a	1.476	n/a	n/a	n/a	1.218
<b>Median</b>	0	0	0	0	0.223	0	0	0	0.011	0	0	0	0.234
<b>2.5%</b>	0	0	0	0	0.008	0	0	0	0	0	0	0	0.01
<b>25%</b>	0	0	0	0	0.095	0	0	0	0.004	0	0	0	0.1
<b>75%</b>	0	0	0	0	0.431	0	0	0	0.021	0	0	0	0.447
<b>97.5%</b>	0	0	0	0	1.574	0	0	0	0.09	0	0	0	1.652

Table 3.23 Guillemot – predicted collisions per month, stochastic CRM, Option 2 – NAF 0.25

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Mean</b>	0.021	0.041	0.159	0.029	0.092	0.087	0.11	0	0	0.12	0.033	0.17	0.862
<b>SD</b>	0.046	0.087	0.374	0.069	0.191	0.202	0.226	0	0	0.275	0.074	0.358	1.622
<b>CV</b>	2.206	2.105	2.351	2.375	2.081	2.321	2.054	n/a	n/a	2.298	2.23	2.109	1.882
<b>Median</b>	0.001	0.002	0.004	0.001	0.003	0.002	0.004	0	0	0.003	0.001	0.005	0.035
<b>2.5%</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>25%</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>75%</b>	0.015	0.037	0.115	0.02	0.088	0.063	0.101	0	0	0.094	0.026	0.133	0.951
<b>97.5%</b>	0.153	0.328	1.227	0.221	0.644	0.683	0.786	0	0	0.923	0.267	1.282	5.563

Table 3.24 Razorbill – predicted collisions per month, stochastic CRM, Option 2 – NAF 0.0

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Mean</b>	0	0	0.051	0.094	0	0	0	0	0	0.158	0.027	0.121	0.451
<b>SD</b>	0	0	0.093	0.178	0	0	0	0	0	0.293	0.05	0.234	0.736
<b>CV</b>	n/a	n/a	1.832	1.892	n/a	n/a	n/a	n/a	n/a	1.85	1.902	1.928	1.633
<b>Median</b>	0	0	0.012	0.019	0	0	0	0	0	0.035	0.006	0.023	0.141
<b>2.5%</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>25%</b>	0	0	0	0.001	0	0	0	0	0	0.002	0	0.001	0.006
<b>75%</b>	0	0	0.052	0.101	0	0	0	0	0	0.179	0.03	0.131	0.593
<b>97.5%</b>	0	0	0.303	0.601	0	0	0	0	0	1.036	0.162	0.751	2.767

#### 3.1.4.2 Migratory species CRM

80. **Table 3.25** shows results of collision risk modelling for migrating bird species concerning the Project.
81. Mean collision risk for all migratory species was estimated at less than one collision per year, and close to zero for the majority of species, once the likely rate of avoidance was taken into account.



Table 3.25 Results of migratory species collision risk modelling (Band 2012 migrant collision risk Option 1 - final 6 columns) using input and output parameters of BTO SOSS-Migration Assessment Tool (Wright et al. 2012, all other columns)

Species	Estimated migrant population (Britain and/or Ireland)	Correction factor (%)	Percent crossing footprint (%)	Number crossing footprint	Proportion At Collision Height (PCH) %			Mean PCH		Lower PCH		Upper PCH	
					Mean PCH (%)	Lower PCH (%)	Upper PCH (%)	Collisions per annum (Band 2012, Option 1) assuming zero avoidance	Collisions per annum (Band 2012, Option 1) assuming 0.980 avoidance rate	Collisions per annum (Band 2012, Option 1) assuming zero avoidance	Collisions per annum (Band 2012, Option 1) assuming 0.980 avoidance rate	Collisions per annum (Band 2012, Option 1) assuming zero avoidance	Collisions per annum (Band 2012, Option 1) assuming 0.980 avoidance rate
Bewick's swan*	380	8	4.38%	1.3	50	10	90	0.05	<b>0.00</b>	0.01	0.00	0.09	0.00
Whooper swan	11000	10.39	2.27%	25.9	50	10	90	1.37	<b>0.03</b>	0.27	0.01	2.47	0.05
Pink-footed goose	360000	12.31	0.06%	26.7	30	5	75	0.64	<b>0.01</b>	0.11	0.00	1.60	0.03
Shelduck	61000	8	2.65%	129.5	15	0.1	60	1.46	<b>0.03</b>	0.01	0.00	5.84	0.12
Eurasian wigeon	440000	9.76	2.65%	1139.2	15	0.1	60	11.26	<b>0.23</b>	0.08	0.00	45.04	0.90
Teal	210000	8	2.65%	445.8	15	0.1	60	4.20	<b>0.08</b>	0.03	0.00	16.80	0.34
Pintail	29000	8	2.65%	61.6	15	0.1	60	0.66	<b>0.01</b>	0.00	0.00	2.64	0.05
Shoveler	18000	8	2.81%	40.5	15	0.1	60	0.41	<b>0.01</b>	0.00	0.00	1.64	0.03
Great scaup	5200	9.41	2.83%	13.8	15	0.1	60	0.13	<b>0.00</b>	0.00	0.00	0.52	0.01
Eider	60500	8	0.00%	0	15	0.1	60	0.00	<b>0.00</b>	0.00	0.00	0.00	0.00
Common scoter	100000	8	2.65%	212.3	1	0	11.6	0.14	<b>0.00</b>	0.00	0.00	1.62	0.03
Goldeneye	20000	8	2.65%	42.5	15	0.1	60	0.41	<b>0.01</b>	0.00	0.00	1.64	0.03
Red-breasted merganser	8400	8	2.68%	18	15	0.1	60	0.18	<b>0.00</b>	0.00	0.00	5.00	0.01
Red-throated diver (breeding)	1500	8	2.65%	3.2	2	0.1	22.4	0.00	<b>0.00</b>	0.00	0.00	0.00	0.00
Red-throated diver (non-breeding)	17000	8	2.65%	36.1	2	0.1	22.4	0.05	<b>0.00</b>	0.00	0.00	0.56	0.01
Fulmar	504756	8	1.76%	712.6	1	0	9.3	0.52	<b>0.01</b>	0.00	0.00	4.84	0.10
Manx shearwater	319499	8	1.76%	451.1	0.04	0.01	10.1	0.01	<b>0.00</b>	0.00	0.00	2.53	0.05
Storm petrel	33434	8	1.76%	47.2	2	0	2.5	0.06	<b>0.00</b>	0.00	0.00	0.08	0.00
Leach's petrel	64883	8	1.76%	91.6	2	0	2.5	0.13	<b>0.00</b>	0.00	0.00	0.16	0.00
Gannet	437092	8	1.76%	617.1	12.6	6.2	20.3	6.98	<b>0.14</b>	3.43	0.07	11.25	0.22
Cormorant	35000	8	1.76%	49.4	2	0.7	27.9	0.09	<b>0.00</b>	0.03	0.00	1.26	0.03

Species	Estimated migrant population (Britain and/or Ireland)	Correction factor (%)	Percent crossing footprint (%)	Number crossing footprint	Proportion At Collision Height (PCH) %			Mean PCH		Lower PCH		Upper PCH	
					Mean PCH (%)	Lower PCH (%)	Upper PCH (%)	Collisions per annum (Band 2012, Option 1) assuming zero avoidance	Collisions per annum (Band 2012, Option 1) assuming 0.980 avoidance rate	Collisions per annum (Band 2012, Option 1) assuming zero avoidance	Collisions per annum (Band 2012, Option 1) assuming 0.980 avoidance rate	Collisions per annum (Band 2012, Option 1) assuming zero avoidance	Collisions per annum (Band 2012, Option 1) assuming 0.980 avoidance rate
<b>Shag</b>	110000	8	2.66%	233.8	12.6	1.6	74.5	2.33	<b>0.05</b>	0.30	0.01	13.78	0.28
<b>Great crested grebe</b>	19000	10.26	3.32%	64.8	10	1	40	0.46	<b>0.01</b>	0.05	0.00	1.84	0.04
<b>Bittern</b>	600	13.33	6.07%	4.9	50	5	95	0.26	<b>0.01</b>	0.03	0.00	0.49	0.01
<b>Marsh harrier</b>	402	16.67	0.00%	0	50	25	100	0.00	<b>0.00</b>	0.00	0.00	0.00	0.00
<b>Hen harrier (breeding)</b>	1140	8	3.04%	2.8	50	25	100	0.13	<b>0.00</b>	0.07	0.00	0.26	0.01
<b>Hen harrier (non-breeding)</b>	750	0	0.00%	0	50	25	100	0.00	<b>0.00</b>	0.00	0.00	0.00	0.00
<b>Merlin</b>	2660	8	2.65%	5.6	50	25	100	0.20	<b>0.00</b>	0.10	0.00	0.40	0.01
<b>Oystercatcher (breeding)</b>	113000	8	2.66%	240.2	25	5	75	4.11	<b>0.08</b>	0.82	0.02	12.33	0.25
<b>Oystercatcher (non-breeding)</b>	320000	8	2.65%	679.4	25	5	75	11.62	<b>0.23</b>	2.32	0.05	34.86	0.70
<b>Ringed plover (breeding)</b>	10876	8	2.66%	23.1	25	5	75	0.35	<b>0.01</b>	0.07	0.00	1.05	0.02
<b>Ringed plover (non-breeding)</b>	34000	8	2.65%	72.2	25	5	75	1.09	<b>0.02</b>	0.22	0.00	3.27	0.07
<b>Golden Plover (breeding)</b>	45200	8	2.65%	96	25	5	75	1.44	<b>0.03</b>	0.29	0.01	4.32	0.09
<b>Golden Plover (non-breeding)</b>	400000	8	2.65%	849.2	25	5	75	12.76	<b>0.26</b>	2.55	0.05	38.28	0.77
<b>Grey plover</b>	43000	8	2.65%	91.3	25	5	75	1.37	<b>0.03</b>	0.27	0.01	4.11	0.08
<b>Lapwing</b>	620000	8	2.65%	1316.3	25	5	75	21.60	<b>0.43</b>	4.32	0.09	64.80	1.30
<b>Knot</b>	320000	8	2.65%	679.4	25	5	75	9.78	<b>0.20</b>	1.96	0.04	29.34	0.59
<b>Sanderling</b>	16000	8	2.65%	34	25	5	75	0.48	<b>0.01</b>	0.10	0.00	1.44	0.03
<b>Dunlin <i>Calidris alpina schinzii</i> &amp; <i>C.a.arctica</i> (passage)</b>	19800	8	2.65%	42.0	25	5	75	0.60	<b>0.01</b>	0.12	0.00	1.80	0.04
<b>Dunlin <i>Calidris alpina alpina</i></b>	350000	10.26	3.74%	1343.1	25	5	75	19.04	<b>0.38</b>	3.81	0.08	57.12	1.14

Species	Estimated migrant population (Britain and/or Ireland)	Correction factor (%)	Percent crossing footprint (%)	Number crossing footprint	Proportion At Collision Height (PCH) %			Mean PCH		Lower PCH		Upper PCH	
					Mean PCH (%)	Lower PCH (%)	Upper PCH (%)	Collisions per annum (Band 2012, Option 1) assuming zero avoidance	Collisions per annum (Band 2012, Option 1) assuming 0.980 avoidance rate	Collisions per annum (Band 2012, Option 1) assuming zero avoidance	Collisions per annum (Band 2012, Option 1) assuming 0.980 avoidance rate	Collisions per annum (Band 2012, Option 1) assuming zero avoidance	Collisions per annum (Band 2012, Option 1) assuming 0.980 avoidance rate
(passage & winter)													
<b>Black-tailed godwit</b> <i>Limosa limosa islandica</i>	43000	8	2.65%	91.3	25	5	75	1.54	<b>0.03</b>	0.31	0.01	4.62	0.09
<b>Bar-tailed godwit</b>	38000	10.26	3.33%	129.7	25	5	75	2.04	<b>0.04</b>	0.41	0.01	6.12	0.12
<b>Curlew (breeding)</b>	214000	8	2.65%	454.5	25	5	75	7.47	<b>0.15</b>	1.49	0.03	22.41	0.45
<b>Curlew (non-breeding)</b>	140000	8	2.65%	297.2	25	5	75	4.88	<b>0.10</b>	0.98	0.02	14.64	0.29
<b>Redshank (British) (breeding)</b>	77600	8	2.65%	164.7	25	5	75	2.45	<b>0.05</b>	0.49	0.01	7.35	0.15
<b>Redshank (Iceland) (non-breeding)</b>	120000	8	2.65%	254.8	25	5	75	3.79	<b>0.08</b>	0.76	0.02	11.37	0.23
<b>Redshank (European) (non-breeding)</b>	n/a	0	0.00%	0	25	5	75	0.00	<b>0.00</b>	0.00	0.00	0.00	0.00
<b>Turnstone</b>	48000	8	2.65%	101.9	25	5	75	1.48	<b>0.03</b>	0.30	0.01	4.44	0.09
<b>Great skua</b>	19268	8	1.76%	27.2	6	3.4	18	0.12	<b>0.00</b>	0.07	0.00	0.36	0.01
<b>Kittiwake</b>	759784	8	1.76%	1072.6	15	11.6	17.5	11.11	<b>0.22</b>	8.59	0.17	12.96	0.26
<b>Black-headed gull</b>	2200000	8	2.65%	4670.7	14	5.6	26.2	48.11	<b>0.96</b>	19.24	0.38	90.03	1.80
<b>Common gull</b>	700000	9.41	2.88%	1899.3	22	18.8	31	32.17	<b>0.64</b>	27.49	0.55	45.33	0.91
<b>Lesser black-backed gull</b>	120000	8	2.65%	254.8	28	20.1	44.4	5.58	<b>0.11</b>	4.01	0.08	8.85	0.18
<b>Herring gull</b>	730000	8	2.65%	1549.8	32	24.7	43	39.53	<b>0.79</b>	30.51	0.61	53.12	1.06
<b>Great Black-backed Gull</b>	76000	8	2.65%	161.4	33	27.9	44.7	4.42	<b>0.09</b>	3.74	0.07	5.99	0.12
<b>Sandwich tern</b>	24980	10.26	3.21%	82.2	7	6.1	15.1	0.46	<b>0.01</b>	0.40	0.01	0.99	0.02
<b>Common tern</b>	23676	8	2.65%	50.3	7	4.2	10.7	0.24	<b>0.00</b>	0.14	0.00	0.37	0.01

Species	Estimated migrant population (Britain and/or Ireland)	Correction factor (%)	Percent crossing footprint (%)	Number crossing footprint	Proportion At Collision Height (PCH) %			Mean PCH		Lower PCH		Upper PCH	
					Mean PCH (%)	Lower PCH (%)	Upper PCH (%)	Collisions per annum (Band 2012, Option 1) assuming zero avoidance	Collisions per annum (Band 2012, Option 1) assuming 0.980 avoidance rate	Collisions per annum (Band 2012, Option 1) assuming zero avoidance	Collisions per annum (Band 2012, Option 1) assuming 0.980 avoidance rate	Collisions per annum (Band 2012, Option 1) assuming zero avoidance	Collisions per annum (Band 2012, Option 1) assuming 0.980 avoidance rate
<b>Arctic tern</b>	106776	8	2.65%	226.7	7	0.5	13	1.12	<b>0.02</b>	0.08	0.00	2.08	0.04
<b>Guillemot</b>	2841800	8	1.76%	4012	0.4	0	10.3	1.01	<b>0.02</b>	0.00	0.00	26.01	0.52
<b>Razorbill</b>	377152	8	1.76%	532.4	2.7	0	14	0.92	<b>0.02</b>	0.00	0.00	4.77	0.10
<b>Puffin</b>	1158378	8	1.76%	1635.4	0.01	0	9.6	0.01	<b>0.00</b>	0.00	0.00	9.60	0.19
<b>Short-eared owl</b>	7000	8	2.65%	14.9	50	10	95	0.56	<b>0.01</b>	0.11	0.00	1.06	0.02

\* Population is Ireland only - all birds are assumed to be crossing to Ireland

### 3.1.5 Displacement matrices – EIA

82. **Table 3.26** to **Table 3.63** report estimated numbers and estimated change in percentage mortality rate due to displacement by the Project, for seabird species in each defined season (Furness, 2015) of their annual cycle (with relevance and connectivity to the Project).
83. In displacement mortality estimates, the seasonal peak mean population (of the windfarm site and specified surrounding buffer area) is used as the estimated number of individuals available to be displaced by the Project. Estimated numbers of individuals subject to mortality due to displacement per year are reported in table cells, for varying rates of a) displacement (from 10% to 100%) and b) mortality (from 1% to 100%).
84. For example, for common scoter (as presented in **Table 3.32**), the mean estimated number of individuals available to be displaced by the Project is the estimated mean population of the windfarm site + 4km buffer area; 43 individuals. For this population, predicted displacement mortality assuming 100% displacement and 100% mortality would be 43 individuals per year.
85. For the ranges of displacement and mortality most likely to apply (in accordance with UK SNCB guidance, 2017), and of most relevance to assessment, the corresponding cells in the matrix are highlighted in grey. The advised range of displacement most likely to apply for common scoter is 90-100%, with mortality as a result of displacement advised as to range from 1% to 10%. The mean estimated displacement mortality is therefore zero to four individuals per year (**Table 3.32**).
86. A change in percentage mortality rate due to displacement is also calculated for each species, with the estimated additional mortalities due to displacement by the Project expressed as percentages of the estimated baseline mortality in the region's population, based on a reference population size and a reference baseline mortality rate of the species per published sources.
87. For example for common scoter, the reference regional population is 141,801 individuals, and the baseline mortality is 33,749 annually (0.238 of population) based on the inverse of a weighted mean of published adult and juvenile survival rates for the species (0.762, Horswill & Robinson 2015). A displacement mortality of four individuals per year (i.e. assuming 100% displacement and 10% mortality in **Table 3.32**) would therefore represent an estimated increase of 0.01% in mortality rate (**Table 3.33**).

Table 3.26 Mean, LCI and UCI displacement matrices for red-throated diver from the Project in the autumn migration season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
	1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	1	1	1	2
	90%	0	0	0	0	0	0	0	1	1	2	2
	100%	0	0	0	0	0	0	0	1	1	2	2

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	0	1	1	2	4	5
	50%	0	0	0	0	0	1	1	2	3	5	6
	60%	0	0	0	0	0	1	1	2	4	6	7
	70%	0	0	0	0	0	1	2	2	4	7	8
	80%	0	0	0	0	0	1	2	3	5	8	9
	90%	0	0	0	0	1	1	2	3	5	8	11
	100%	0	0	0	0	1	1	2	4	6	9	12



Table 3.27 Mean, LCI and UCI displacement matrices showing change in mortality rate for red-throated diver due to displacement from Morecambe OWF in the autumn migration season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.07%	0.08%
	50%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	60%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	70%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.14%
	80%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.17%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.15%	0.19%
	100%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.17%	0.21%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%	
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.18%	0.23%	
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%	
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%	
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.46%	0.58%	
	60%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.35%	0.55%	0.69%	
	70%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.65%	0.81%	
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.28%	0.46%	0.74%	0.92%	
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.83%	1.04%	
	100%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.92%	1.15%	

Table 3.28 Mean, LCI and UCI displacement matrices for red-throated diver from Morecambe OWF in the winter season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	3
	40%	0	0	0	0	0	0	1	1	2	4	5
	50%	0	0	0	0	0	1	1	2	3	5	6
	60%	0	0	0	0	0	1	1	2	3	6	7
	70%	0	0	0	0	0	1	2	2	4	6	8
	80%	0	0	0	0	0	1	2	3	5	7	9
	90%	0	0	0	0	1	1	2	3	5	8	10
	100%	0	0	0	0	1	1	2	3	6	9	12

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	1	2	3
	20%	0	0	0	0	0	1	1	2	3	4	5
	30%	0	0	0	0	0	1	2	2	4	7	8
	40%	0	0	0	0	1	1	2	3	5	9	11
	50%	0	0	0	1	1	1	3	4	7	11	14
	60%	0	0	0	1	1	2	3	5	8	13	16
	70%	0	0	1	1	1	2	4	6	10	15	19
	80%	0	0	1	1	1	2	4	7	11	18	22
	90%	0	0	1	1	1	2	5	7	12	20	25
	100%	0	1	1	1	1	3	5	8	14	22	27

Table 3.29 Mean, LCI and UCI displacement matrices showing change in mortality rate for **red-throated diver** due to displacement from Morecambe OWF in the **winter** season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	20%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.60%
	30%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	40%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.60%	0.96%	1.20%
	50%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.30%	0.45%	0.75%	1.20%	1.50%
	60%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.54%	0.90%	1.44%	1.79%
	70%	0.02%	0.04%	0.06%	0.08%	0.10%	0.21%	0.42%	0.63%	1.05%	1.68%	2.09%
	80%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.48%	0.72%	1.20%	1.91%	2.39%
	90%	0.03%	0.05%	0.08%	0.11%	0.13%	0.27%	0.54%	0.81%	1.35%	2.15%	2.69%
	100%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.60%	0.90%	1.50%	2.39%	2.99%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.57%	0.71%	
	20%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.43%	0.71%	1.14%	1.42%	
	30%	0.02%	0.04%	0.06%	0.09%	0.11%	0.21%	0.43%	0.64%	1.06%	1.70%	2.13%	
	40%	0.03%	0.06%	0.09%	0.11%	0.14%	0.28%	0.57%	0.85%	1.42%	2.27%	2.84%	
	50%	0.04%	0.07%	0.11%	0.14%	0.18%	0.35%	0.71%	1.06%	1.77%	2.84%	3.55%	
	60%	0.04%	0.09%	0.13%	0.17%	0.21%	0.43%	0.85%	1.28%	2.13%	3.41%	4.26%	
	70%	0.05%	0.10%	0.15%	0.20%	0.25%	0.50%	0.99%	1.49%	2.48%	3.97%	4.97%	
	80%	0.06%	0.11%	0.17%	0.23%	0.28%	0.57%	1.14%	1.70%	2.84%	4.54%	5.68%	
	90%	0.06%	0.13%	0.19%	0.26%	0.32%	0.64%	1.28%	1.92%	3.19%	5.11%	6.39%	
	100%	0.07%	0.14%	0.21%	0.28%	0.35%	0.71%	1.42%	2.13%	3.55%	5.68%	7.10%	

Table 3.30 Mean, LCI and UCI displacement matrices for **red-throated diver** from Morecambe OWF in the **spring migration** season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	1	2
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	1	1	1	2	3
	60%	0	0	0	0	0	0	1	1	2	3	4
	70%	0	0	0	0	0	0	1	1	2	3	4
	80%	0	0	0	0	0	0	1	1	2	4	5
	90%	0	0	0	0	0	1	1	2	3	4	5
	100%	0	0	0	0	0	1	1	2	3	5	6



LCI		Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	
	20%	0	0	0	0	0	0	0	0	0	0	0	
	30%	0	0	0	0	0	0	0	0	0	0	0	
	40%	0	0	0	0	0	0	0	0	0	0	0	
	50%	0	0	0	0	0	0	0	0	0	0	0	
	60%	0	0	0	0	0	0	0	0	0	0	0	
	70%	0	0	0	0	0	0	0	0	0	0	0	
	80%	0	0	0	0	0	0	0	0	0	0	0	
	90%	0	0	0	0	0	0	0	0	0	0	0	
	100%	0	0	0	0	0	0	0	0	0	0	0	
UCI		Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	1	1	2	
	20%	0	0	0	0	0	0	1	1	2	3	3	
	30%	0	0	0	0	0	0	1	1	2	4	5	
	40%	0	0	0	0	0	1	1	2	3	5	6	
	50%	0	0	0	0	0	1	2	2	4	6	8	
	60%	0	0	0	0	0	1	2	3	5	8	10	
	70%	0	0	0	0	1	1	2	3	6	9	11	
	80%	0	0	0	1	1	1	3	4	6	10	13	
	90%	0	0	0	1	1	1	3	4	7	12	14	
	100%	0	0	0	1	1	2	3	5	8	13	16	

Table 3.31 Mean, LCI and UCI displacement matrices showing change in mortality rate for **red-throated diver** due to displacement from Morecambe OWF in the **spring migration** season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.14%	0.17%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.23%	0.29%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.33%	0.41%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.47%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.16%	0.26%	0.42%	0.52%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.47%	0.58%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%	
	20%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%	
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%	
	40%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.31%	0.50%	0.63%	
	50%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.78%	
	60%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.19%	0.28%	0.47%	0.75%	0.94%	
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.33%	0.55%	0.88%	1.10%	
	80%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.25%	0.38%	0.63%	1.00%	1.25%	
	90%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.42%	0.71%	1.13%	1.41%	
	100%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.31%	0.47%	0.78%	1.25%	1.57%	

Table 3.32 Mean, LCI and UCI displacement matrices for **common scoter** from Morecambe OWF in the **non-breeding** season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	1	1	2	3	5	9	11
	30%	0	0	0	1	1	1	3	4	6	10	13
	40%	0	0	1	1	1	2	3	5	9	14	17
	50%	0	0	1	1	1	2	4	6	11	17	22
	60%	0	1	1	1	1	3	5	8	13	21	26
	70%	0	1	1	1	2	3	6	9	15	24	30
	80%	0	1	1	1	2	3	7	10	17	28	34
	90%	0	1	1	2	2	4	8	12	19	31	39
	100%	0	1	1	2	2	4	9	13	22	34	43

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	1	3	4	7	10	13
	20%	0	1	1	1	2	3	7	10	16	26	33
	30%	0	1	1	2	2	4	8	12	20	31	39
	40%	1	1	2	2	3	5	10	16	26	42	52
	50%	1	1	2	3	3	7	13	20	33	52	65
	60%	1	2	2	3	4	8	16	24	39	63	78
	70%	1	2	3	4	5	9	18	27	46	73	92
	80%	1	2	3	4	5	10	21	31	52	84	105
	90%	1	2	4	5	6	12	24	35	59	94	118
	100%	1	3	4	5	7	13	26	39	65	105	131

Table 3.33 Mean, LCI and UCI displacement matrices showing change in mortality rate for **common scoter** due to displacement from Morecambe OWF in the **non-breeding** season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	80%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	90%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	100%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%	
	30%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%	
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%	
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%	
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%	
	70%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%	
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.25%	0.31%	
	90%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%	
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%	



Table 3.34 Mean, LCI and UCI displacement matrices for **Manx shearwater** from Morecambe OWF in the **breeding** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	5	9	14	19	24	47	94	141	235	376	471
	20%	9	19	28	38	47	94	188	282	471	753	941
	30%	14	28	42	56	71	141	282	423	706	1129	1412
	40%	19	38	56	75	94	188	376	565	941	1506	1882
	50%	24	47	71	94	118	235	471	706	1176	1882	2353
	60%	28	56	85	113	141	282	565	847	1412	2258	2823
	70%	33	66	99	132	165	329	659	988	1647	2635	3294
	80%	38	75	113	151	188	376	753	1129	1882	3011	3764
	90%	42	85	127	169	212	423	847	1270	2117	3388	4235
	100%	47	94	141	188	235	471	941	1412	2353	3764	4705

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	2	2	3	4	8	16	23	39	63	78
	20%	2	3	5	6	8	16	31	47	78	125	157
	30%	2	5	7	9	12	23	47	70	117	188	235
	40%	3	6	9	13	16	31	63	94	157	251	313
	50%	4	8	12	16	20	39	78	117	196	313	392
	60%	5	9	14	19	23	47	94	141	235	376	470
	70%	5	11	16	22	27	55	110	164	274	438	548
	80%	6	13	19	25	31	63	125	188	313	501	626
	90%	7	14	21	28	35	70	141	211	352	564	705
	100%	8	16	23	31	39	78	157	235	392	626	783
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	10	20	30	40	50	100	200	300	501	801	1001
	20%	20	40	60	80	100	200	400	601	1001	1602	2002
	30%	30	60	90	120	150	300	601	901	1502	2402	3003
	40%	40	80	120	160	200	400	801	1201	2002	3203	4004
	50%	50	100	150	200	250	501	1001	1502	2503	4004	5005
	60%	60	120	180	240	300	601	1201	1802	3003	4805	6006
	70%	70	140	210	280	350	701	1401	2102	3504	5606	7007
	80%	80	160	240	320	400	801	1602	2402	4004	6406	8008
	90%	90	180	270	360	450	901	1802	2703	4505	7207	9009
	100%	100	200	300	400	501	1001	2002	3003	5005	8008	10010

Table 3.35 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** due to displacement from Morecambe OWF in the **breeding** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	30%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.60%
	40%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.64%	0.79%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.79%	0.99%
	60%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.60%	0.95%	1.19%
	70%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.42%	0.70%	1.11%	1.39%
	80%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.79%	1.27%	1.59%
	90%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.54%	0.89%	1.43%	1.79%
	100%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.40%	0.60%	0.99%	1.59%	1.99%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.13%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.17%
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%
	80%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	90%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	100%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.26%	0.33%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.13%	0.21%	0.34%	0.42%
	20%	0.01%	0.02%	0.03%	0.03%	0.04%	0.08%	0.17%	0.25%	0.42%	0.68%	0.85%
	30%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.25%	0.38%	0.63%	1.01%	1.27%
	40%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.34%	0.51%	0.85%	1.35%	1.69%
	50%	0.02%	0.04%	0.06%	0.08%	0.11%	0.21%	0.42%	0.63%	1.06%	1.69%	2.11%
	60%	0.03%	0.05%	0.08%	0.10%	0.13%	0.25%	0.51%	0.76%	1.27%	2.03%	2.54%
	70%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.59%	0.89%	1.48%	2.37%	2.96%
	80%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.68%	1.01%	1.69%	2.71%	3.38%
	90%	0.04%	0.08%	0.11%	0.15%	0.19%	0.38%	0.76%	1.14%	1.90%	3.04%	3.80%
	100%	0.04%	0.08%	0.13%	0.17%	0.21%	0.42%	0.85%	1.27%	2.11%	3.38%	4.23%

Table 3.36 Mean, LCI and UCI displacement matrices for **Manx shearwater** from Morecambe OWF in the **autumn migration** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	3	5	8	11	13	27	53	80	133	212	265
	20%	5	11	16	21	27	53	106	159	265	424	530
	30%	8	16	24	32	40	80	159	239	398	636	795
	40%	11	21	32	42	53	106	212	318	530	848	1060
	50%	13	27	40	53	66	133	265	398	663	1060	1325
	60%	16	32	48	64	80	159	318	477	795	1272	1590
	70%	19	37	56	74	93	186	371	557	928	1484	1855
	80%	21	42	64	85	106	212	424	636	1060	1696	2120
	90%	24	48	72	95	119	239	477	716	1193	1908	2385
	100%	27	53	80	106	133	265	530	795	1325	2120	2650

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	3	4	5	7	13	26	39	65	105	131
	20%	3	5	8	10	13	26	52	79	131	209	262
	30%	4	8	12	16	20	39	79	118	196	314	393
	40%	5	10	16	21	26	52	105	157	262	419	524
	50%	7	13	20	26	33	65	131	196	327	524	655
	60%	8	16	24	31	39	79	157	236	393	628	785
	70%	9	18	27	37	46	92	183	275	458	733	916
	80%	10	21	31	42	52	105	209	314	524	838	1047
	90%	12	24	35	47	59	118	236	353	589	942	1178
	100%	13	26	39	52	65	131	262	393	655	1047	1309
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
		10%	4	9	13	18	22	44	89	133	222	356
Displacement	20%	9	18	27	36	44	89	178	267	445	712	889
	30%	13	27	40	53	67	133	267	400	667	1067	1334
	40%	18	36	53	71	89	178	356	534	889	1423	1779
	50%	22	44	67	89	111	222	445	667	1112	1779	2224
	60%	27	53	80	107	133	267	534	800	1334	2135	2668
	70%	31	62	93	125	156	311	623	934	1556	2490	3113
	80%	36	71	107	142	178	356	712	1067	1779	2846	3558
	90%	40	80	120	160	200	400	800	1201	2001	3202	4002
	100%	44	89	133	178	222	445	889	1334	2224	3558	4447

Table 3.37 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** due to displacement from Morecambe OWF in the **autumn migration** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.52%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.64%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.39%	0.62%	0.77%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.83%	1.03%
	90%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%
	100%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.29%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.31%	0.38%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.22%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.43%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.65%
	40%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.69%	0.87%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.87%	1.08%
	60%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.65%	1.04%	1.30%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.45%	0.76%	1.21%	1.51%
	80%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.38%	1.73%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.97%	1.56%	1.95%
	100%	0.02%	0.04%	0.06%	0.09%	0.11%	0.22%	0.43%	0.65%	1.08%	1.73%	2.16%



Table 3.38 Mean, LCI and UCI displacement matrices for **Manx shearwater** from Morecambe OWF in the **spring migration** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	2	3	5	6	8	16	32	49	81	129	162
	20%	3	6	10	13	16	32	65	97	162	259	323
	30%	5	10	15	19	24	49	97	146	243	388	485
	40%	6	13	19	26	32	65	129	194	323	517	647
	50%	8	16	24	32	40	81	162	243	404	647	809
	60%	10	19	29	39	49	97	194	291	485	776	970
	70%	11	23	34	45	57	113	226	340	566	906	1132
	80%	13	26	39	52	65	129	259	388	647	1035	1294
	90%	15	29	44	58	73	146	291	437	728	1164	1455
	100%	16	32	49	65	81	162	323	485	809	1294	1617

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	5	9	14	19	24	47	94	141	236	377	471
	20%	9	19	28	38	47	94	188	283	471	754	942
	30%	14	28	42	57	71	141	283	424	707	1130	1413
	40%	19	38	57	75	94	188	377	565	942	1507	1884
	50%	24	47	71	94	118	236	471	707	1178	1884	2355
	60%	28	57	85	113	141	283	565	848	1413	2261	2826
	70%	33	66	99	132	165	330	659	989	1649	2638	3297
	80%	38	75	113	151	188	377	754	1130	1884	3014	3768
	90%	42	85	127	170	212	424	848	1272	2120	3391	4239
	100%	47	94	141	188	236	471	942	1413	2355	3768	4710

Table 3.39 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** due to displacement from Morecambe OWF in the **spring migration** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.31%	0.39%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.44%	0.55%
	80%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.31%	0.50%	0.63%
	90%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.57%	0.71%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.79%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	0%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%	
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%	
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.34%	0.55%	0.69%	
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.28%	0.46%	0.73%	0.92%	
	50%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.92%	1.15%	
	60%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.41%	0.69%	1.10%	1.38%	
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.28%	1.60%	
	80%	0.02%	0.04%	0.06%	0.07%	0.09%	0.18%	0.37%	0.55%	0.92%	1.47%	1.83%	
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.21%	0.41%	0.62%	1.03%	1.65%	2.06%	
	100%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.69%	1.15%	1.83%	2.29%	

Table 3.40 Mean, LCI and UCI displacement matrices for **gannet** from Morecambe OWF in the **breeding** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	2	3	5	11	16	27	43	54
	20%	1	2	3	4	5	11	22	32	54	87	108
	30%	2	3	5	6	8	16	32	49	81	130	162
	40%	2	4	6	9	11	22	43	65	108	173	216
	50%	3	5	8	11	14	27	54	81	135	216	271
	60%	3	6	10	13	16	32	65	97	162	260	325
	70%	4	8	11	15	19	38	76	114	189	303	379
	80%	4	9	13	17	22	43	87	130	216	346	433
	90%	5	10	15	19	24	49	97	146	243	390	487
	100%	5	11	16	22	27	54	108	162	271	433	541

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	2	3	5	8	13	16
	20%	0	1	1	1	2	3	6	10	16	26	32
	30%	0	1	1	2	2	5	10	14	24	38	48
	40%	1	1	2	3	3	6	13	19	32	51	64
	50%	1	2	2	3	4	8	16	24	40	64	80
	60%	1	2	3	4	5	10	19	29	48	77	96
	70%	1	2	3	4	6	11	22	34	56	90	112
	80%	1	3	4	5	6	13	26	38	64	102	128
	90%	1	3	4	6	7	14	29	43	72	115	144
	100%	2	3	5	6	8	16	32	48	80	128	160
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	2	2	3	4	8	16	24	40	65	81
	20%	2	3	5	6	8	16	32	49	81	129	162
	30%	2	5	7	10	12	24	49	73	121	194	243
	40%	3	6	10	13	16	32	65	97	162	259	324
	50%	4	8	12	16	20	40	81	121	202	324	405
	60%	5	10	15	19	24	49	97	146	243	388	486
	70%	6	11	17	23	28	57	113	170	283	453	567
	80%	6	13	19	26	32	65	129	194	324	518	647
	90%	7	15	22	29	36	73	146	219	364	583	728
	100%	8	16	24	32	40	81	162	243	405	647	809

Table 3.41 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** due to displacement from Morecambe OWF in the **breeding** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.06%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.17%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.22%	0.28%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.26%	0.33%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.44%	0.55%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.07%	0.08%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	70%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	80%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.10%	0.13%
	90%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
	100%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.07%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.20%	0.25%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.16%	0.26%	0.33%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.21%	0.33%	0.41%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.25%	0.40%	0.49%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.46%	0.58%
	80%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.66%
	90%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.59%	0.74%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.25%	0.41%	0.66%	0.82%



Table 3.42 Mean, LCI and UCI displacement matrices for **gannet** from Morecambe OWF in the **autumn migration** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	1	1	2	4	6	10	12
	20%	0	0	1	1	1	2	5	7	12	20	25
	30%	0	1	1	1	2	4	7	11	19	30	37
	40%	0	1	1	2	2	5	10	15	25	40	50
	50%	1	1	2	2	3	6	12	19	31	50	62
	60%	1	1	2	3	4	7	15	22	37	59	74
	70%	1	2	3	3	4	9	17	26	43	69	87
	80%	1	2	3	4	5	10	20	30	50	79	99
	90%	1	2	3	4	6	11	22	33	56	89	111
	100%	1	2	4	5	6	12	25	37	62	99	124

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	6	9	15	19
	20%	0	1	1	2	2	4	8	11	19	30	38
	30%	1	1	2	2	3	6	11	17	28	45	57
	40%	1	2	2	3	4	8	15	23	38	60	76
	50%	1	2	3	4	5	9	19	28	47	76	94
	60%	1	2	3	5	6	11	23	34	57	91	113
	70%	1	3	4	5	7	13	26	40	66	106	132
	80%	2	3	5	6	8	15	30	45	76	121	151
	90%	2	3	5	7	9	17	34	51	85	136	170
	100%	2	4	6	8	9	19	38	57	94	151	189

Table 3.43 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** due to displacement from Morecambe OWF in the **autumn migration** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.08%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	90%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.11%
	100%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.06%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%	
	60%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%	
	70%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%	
	80%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%	
	90%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.17%	
	100%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.15%	0.18%	

Table 3.44 Mean, LCI and UCI displacement matrices for **gannet** from Morecambe OWF in the **spring migration** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	2
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	2	3	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	0	1	1	2	4	5
	70%	0	0	0	0	0	1	1	2	3	4	6
	80%	0	0	0	0	0	1	1	2	3	5	6
	90%	0	0	0	0	0	1	1	2	4	6	7
	100%	0	0	0	0	0	1	2	2	4	6	8

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	2
	20%	0	0	0	0	0	0	1	1	2	3	3
	30%	0	0	0	0	0	0	1	1	2	4	5
	40%	0	0	0	0	0	1	1	2	3	5	6
	50%	0	0	0	0	0	1	2	2	4	6	8
	60%	0	0	0	0	0	1	2	3	5	8	10
	70%	0	0	0	0	1	1	2	3	6	9	11
	80%	0	0	0	1	1	1	3	4	6	10	13
	90%	0	0	0	1	1	1	3	4	7	12	14
	100%	0	0	0	1	1	2	3	5	8	13	16

Table 3.45 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** due to displacement from Morecambe OWF in the **spring migration** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	



Table 3.46 Mean, LCI and UCI displacement matrices for **guillemot** from Morecambe OWF in the **breeding** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	6	13	19	25	32	64	127	191	319	510	637
	20%	13	25	38	51	64	127	255	382	637	1020	1275
	30%	19	38	57	76	96	191	382	574	956	1530	1912
	40%	25	51	76	102	127	255	510	765	1275	2040	2550
	50%	32	64	96	127	159	319	637	956	1594	2550	3187
	60%	38	76	115	153	191	382	765	1147	1912	3060	3825
	70%	45	89	134	178	223	446	892	1339	2231	3570	4462
	80%	51	102	153	204	255	510	1020	1530	2550	4080	5099
	90%	57	115	172	229	287	574	1147	1721	2868	4590	5737
	100%	64	127	191	255	319	637	1275	1912	3187	5099	6374

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	4	8	12	16	20	40	79	119	198	317	397
	20%	8	16	24	32	40	79	159	238	397	635	794
	30%	12	24	36	48	60	119	238	357	595	952	1191
	40%	16	32	48	63	79	159	317	476	794	1270	1587
	50%	20	40	60	79	99	198	397	595	992	1587	1984
	60%	24	48	71	95	119	238	476	714	1191	1905	2381
	70%	28	56	83	111	139	278	556	833	1389	2222	2778
	80%	32	63	95	127	159	317	635	952	1587	2540	3175
	90%	36	71	107	143	179	357	714	1071	1786	2857	3572
	100%	40	79	119	159	198	397	794	1191	1984	3175	3968
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	10	19	29	38	48	95	190	285	476	761	951
	20%	19	38	57	76	95	190	381	571	951	1522	1903
	30%	29	57	86	114	143	285	571	856	1427	2283	2854
	40%	38	76	114	152	190	381	761	1142	1903	3045	3806
	50%	48	95	143	190	238	476	951	1427	2379	3806	4757
	60%	57	114	171	228	285	571	1142	1713	2854	4567	5709
	70%	67	133	200	266	333	666	1332	1998	3330	5328	6660
	80%	76	152	228	304	381	761	1522	2283	3806	6089	7612
	90%	86	171	257	343	428	856	1713	2569	4281	6850	8563
	100%	95	190	285	381	476	951	1903	2854	4757	7612	9514

Table 3.47 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** due to displacement from Morecambe OWF in the **breeding** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	20%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.23%	0.39%	0.62%	0.78%
	30%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.17%
	40%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.31%	0.47%	0.78%	1.25%	1.56%
	50%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.97%	1.56%	1.95%
	60%	0.02%	0.05%	0.07%	0.09%	0.12%	0.23%	0.47%	0.70%	1.17%	1.87%	2.33%
	70%	0.03%	0.05%	0.08%	0.11%	0.14%	0.27%	0.54%	0.82%	1.36%	2.18%	2.72%
	80%	0.03%	0.06%	0.09%	0.12%	0.16%	0.31%	0.62%	0.93%	1.56%	2.49%	3.11%
	90%	0.04%	0.07%	0.11%	0.14%	0.18%	0.35%	0.70%	1.05%	1.75%	2.80%	3.50%
	100%	0.04%	0.08%	0.12%	0.16%	0.19%	0.39%	0.78%	1.17%	1.95%	3.11%	3.89%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.24%	0.39%	0.48%
	30%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.36%	0.58%	0.73%
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.19%	0.29%	0.48%	0.78%	0.97%
	50%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.61%	0.97%	1.21%
	60%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.29%	0.44%	0.73%	1.16%	1.45%
	70%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.34%	0.51%	0.85%	1.36%	1.70%
	80%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.97%	1.55%	1.94%
	90%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.44%	0.65%	1.09%	1.74%	2.18%
	100%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.48%	0.73%	1.21%	1.94%	2.42%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.46%	0.58%
	20%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%
	30%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.39%	1.74%
	40%	0.02%	0.05%	0.07%	0.09%	0.12%	0.23%	0.46%	0.70%	1.16%	1.86%	2.32%
	50%	0.03%	0.06%	0.09%	0.12%	0.15%	0.29%	0.58%	0.87%	1.45%	2.32%	2.90%
	60%	0.03%	0.07%	0.10%	0.14%	0.17%	0.35%	0.70%	1.05%	1.74%	2.79%	3.48%
	70%	0.04%	0.08%	0.12%	0.16%	0.20%	0.41%	0.81%	1.22%	2.03%	3.25%	4.07%
	80%	0.05%	0.09%	0.14%	0.19%	0.23%	0.46%	0.93%	1.39%	2.32%	3.72%	4.65%
	90%	0.05%	0.10%	0.16%	0.21%	0.26%	0.52%	1.05%	1.57%	2.61%	4.18%	5.23%
	100%	0.06%	0.12%	0.17%	0.23%	0.29%	0.58%	1.16%	1.74%	2.90%	4.65%	5.81%

Table 3.48 Mean, LCI and UCI displacement matrices for **guillemot** from Morecambe OWF in the **non-breeding** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	8	17	25	33	42	83	166	249	416	665	831
	20%	17	33	50	67	83	166	333	499	831	1330	1663
	30%	25	50	75	100	125	249	499	748	1247	1996	2494
	40%	33	67	100	133	166	333	665	998	1663	2661	3326
	50%	42	83	125	166	208	416	831	1247	2079	3326	4157
	60%	50	100	150	200	249	499	998	1497	2494	3991	4989
	70%	58	116	175	233	291	582	1164	1746	2910	4656	5820
	80%	67	133	200	266	333	665	1330	1996	3326	5322	6652
	90%	75	150	225	299	374	748	1497	2245	3742	5987	7483
	100%	83	166	249	333	416	831	1663	2494	4157	6652	8315

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	6	12	18	24	30	61	122	183	304	487	609
	20%	12	24	37	49	61	122	243	365	609	974	1217
	30%	18	37	55	73	91	183	365	548	913	1460	1826
	40%	24	49	73	97	122	243	487	730	1217	1947	2434
	50%	30	61	91	122	152	304	609	913	1521	2434	3043
	60%	37	73	110	146	183	365	730	1095	1826	2921	3651
	70%	43	85	128	170	213	426	852	1278	2130	3408	4260
	80%	49	97	146	195	243	487	974	1460	2434	3894	4868
	90%	55	110	164	219	274	548	1095	1643	2738	4381	5477
	100%	61	122	183	243	304	609	1217	1826	3043	4868	6085
UCI		Mortality										
Displacement	10%	12	24	36	48	60	120	241	361	602	964	1205
	20%	24	48	72	96	120	241	482	723	1205	1928	2409
	30%	36	72	108	145	181	361	723	1084	1807	2891	3614
	40%	48	96	145	193	241	482	964	1446	2409	3855	4819
	50%	60	120	181	241	301	602	1205	1807	3012	4819	6024
	60%	72	145	217	289	361	723	1446	2169	3614	5783	7228
	70%	84	169	253	337	422	843	1687	2530	4217	6747	8433
	80%	96	193	289	386	482	964	1928	2891	4819	7710	9638
	90%	108	217	325	434	542	1084	2169	3253	5421	8674	10843
	100%	120	241	361	482	602	1205	2409	3614	6024	9638	12047

Table 3.49 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** due to displacement from Morecambe OWF in the **non-breeding** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.51%
	20%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.31%	0.51%	0.82%	1.02%
	30%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.31%	0.46%	0.77%	1.22%	1.53%
	40%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.41%	0.61%	1.02%	1.63%	2.04%
	50%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.51%	0.77%	1.28%	2.04%	2.55%
	60%	0.03%	0.06%	0.09%	0.12%	0.15%	0.31%	0.61%	0.92%	1.53%	2.45%	3.06%
	70%	0.04%	0.07%	0.11%	0.14%	0.18%	0.36%	0.71%	1.07%	1.79%	2.86%	3.57%
	80%	0.04%	0.08%	0.12%	0.16%	0.20%	0.41%	0.82%	1.22%	2.04%	3.27%	4.08%
	90%	0.05%	0.09%	0.14%	0.18%	0.23%	0.46%	0.92%	1.38%	2.30%	3.67%	4.59%
	100%	0.05%	0.10%	0.15%	0.20%	0.26%	0.51%	1.02%	1.53%	2.55%	4.08%	5.10%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.19%	0.30%	0.37%
	20%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.60%	0.75%
	30%	0.01%	0.02%	0.03%	0.04%	0.06%	0.11%	0.22%	0.34%	0.56%	0.90%	1.12%
	40%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.30%	0.45%	0.75%	1.20%	1.49%
	50%	0.02%	0.04%	0.06%	0.07%	0.09%	0.19%	0.37%	0.56%	0.93%	1.49%	1.87%
	60%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.45%	0.67%	1.12%	1.79%	2.24%
	70%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.52%	0.78%	1.31%	2.09%	2.61%
	80%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.60%	0.90%	1.49%	2.39%	2.99%
	90%	0.03%	0.07%	0.10%	0.13%	0.17%	0.34%	0.67%	1.01%	1.68%	2.69%	3.36%
	100%	0.04%	0.07%	0.11%	0.15%	0.19%	0.37%	0.75%	1.12%	1.87%	2.99%	3.74%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.59%	0.74%
	20%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.30%	0.44%	0.74%	1.18%	1.48%
	30%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.44%	0.67%	1.11%	1.77%	2.22%
	40%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.59%	0.89%	1.48%	2.37%	2.96%
	50%	0.04%	0.07%	0.11%	0.15%	0.18%	0.37%	0.74%	1.11%	1.85%	2.96%	3.70%
	60%	0.04%	0.09%	0.13%	0.18%	0.22%	0.44%	0.89%	1.33%	2.22%	3.55%	4.44%
	70%	0.05%	0.10%	0.16%	0.21%	0.26%	0.52%	1.04%	1.55%	2.59%	4.14%	5.18%
	80%	0.06%	0.12%	0.18%	0.24%	0.30%	0.59%	1.18%	1.77%	2.96%	4.73%	5.92%
	90%	0.07%	0.13%	0.20%	0.27%	0.33%	0.67%	1.33%	2.00%	3.33%	5.32%	6.66%
	100%	0.07%	0.15%	0.22%	0.30%	0.37%	0.74%	1.48%	2.22%	3.70%	5.92%	7.40%



Table 3.50 Mean, LCI and UCI displacement matrices for **razorbill** from Morecambe OWF in the **breeding** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	1	1	3	5	8	13	20	25
	20%	1	1	2	2	3	5	10	15	25	40	50
	30%	1	2	2	3	4	8	15	23	38	61	76
	40%	1	2	3	4	5	10	20	30	50	81	101
	50%	1	3	4	5	6	13	25	38	63	101	126
	60%	2	3	5	6	8	15	30	45	76	121	151
	70%	2	4	5	7	9	18	35	53	88	141	177
	80%	2	4	6	8	10	20	40	61	101	162	202
	90%	2	5	7	9	11	23	45	68	114	182	227
	100%	3	5	8	10	13	25	50	76	126	202	252

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	3	4	7	8
	50%	0	0	0	0	1	1	2	3	5	8	11
	60%	0	0	0	1	1	1	3	4	6	10	13
	70%	0	0	0	1	1	1	3	4	7	12	15
	80%	0	0	1	1	1	2	3	5	8	13	17
	90%	0	0	1	1	1	2	4	6	9	15	19
	100%	0	0	1	1	1	2	4	6	11	17	21
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	2	3	6	12	18	30	48	60
	20%	1	2	4	5	6	12	24	36	60	97	121
	30%	2	4	5	7	9	18	36	54	91	145	181
	40%	2	5	7	10	12	24	48	73	121	194	242
	50%	3	6	9	12	15	30	60	91	151	242	302
	60%	4	7	11	15	18	36	73	109	181	290	363
	70%	4	8	13	17	21	42	85	127	212	339	423
	80%	5	10	15	19	24	48	97	145	242	387	484
	90%	5	11	16	22	27	54	109	163	272	436	544
	100%	6	12	18	24	30	60	121	181	302	484	605

Table 3.51 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** due to displacement from Morecambe OWF in the **breeding** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.21%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.21%	0.34%	0.43%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	90%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
	100%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.36%	0.57%	0.71%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.02%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.02%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.02%	0.03%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	0.04%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	0.04%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.04%	0.05%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.04%	0.05%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.05%	0.06%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.14%	0.17%	
	20%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%	
	30%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.51%	
	40%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.20%	0.34%	0.55%	0.68%	
	50%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.68%	0.85%	
	60%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.31%	0.51%	0.82%	1.02%	
	70%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.60%	0.96%	1.20%	
	80%	0.01%	0.03%	0.04%	0.05%	0.07%	0.14%	0.27%	0.41%	0.68%	1.09%	1.37%	
	90%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.31%	0.46%	0.77%	1.23%	1.54%	
	100%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.34%	0.51%	0.85%	1.37%	1.71%	

Table 3.52 Mean, LCI and UCI displacement matrices for **razorbill** from Morecambe OWF in the **autumn migration** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	3	3	7	14	21	35	56	69
	20%	1	3	4	6	7	14	28	42	69	111	139
	30%	2	4	6	8	10	21	42	62	104	167	208
	40%	3	6	8	11	14	28	56	83	139	222	278
	50%	3	7	10	14	17	35	69	104	174	278	347
	60%	4	8	12	17	21	42	83	125	208	333	416
	70%	5	10	15	19	24	49	97	146	243	389	486
	80%	6	11	17	22	28	56	111	167	278	444	555
	90%	6	12	19	25	31	62	125	187	312	500	625
	100%	7	14	21	28	35	69	139	208	347	555	694

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	1	2	3	6	9	15	25	31
	20%	1	1	2	2	3	6	12	19	31	49	62
	30%	1	2	3	4	5	9	19	28	46	74	93
	40%	1	2	4	5	6	12	25	37	62	99	124
	50%	2	3	5	6	8	15	31	46	77	124	155
	60%	2	4	6	7	9	19	37	56	93	148	185
	70%	2	4	6	9	11	22	43	65	108	173	216
	80%	2	5	7	10	12	25	49	74	124	198	247
	90%	3	6	8	11	14	28	56	83	139	223	278
	100%	3	6	9	12	15	31	62	93	155	247	309
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	2	3	4	5	11	21	32	53	86	107
	20%	2	4	6	9	11	21	43	64	107	171	214
	30%	3	6	10	13	16	32	64	96	160	257	321
	40%	4	9	13	17	21	43	86	128	214	342	428
	50%	5	11	16	21	27	53	107	160	267	428	535
	60%	6	13	19	26	32	64	128	193	321	514	642
	70%	7	15	22	30	37	75	150	225	374	599	749
	80%	9	17	26	34	43	86	171	257	428	685	856
	90%	10	19	29	39	48	96	193	289	481	770	963
	100%	11	21	32	43	53	107	214	321	535	856	1070

Table 3.53 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** due to displacement from Morecambe OWF in the **autumn migration** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.26%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.51%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.46%	0.58%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	40%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.14%	0.17%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	90%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	100%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	30%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	60%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.59%
	70%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.35%	0.55%	0.69%
	80%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.63%	0.79%
	90%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.45%	0.71%	0.89%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.79%	0.99%



Table 3.54 Mean, LCI and UCI displacement matrices for **razorbill** from Morecambe OWF in the **winter** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	3	3	7	13	20	33	52	65
	20%	1	3	4	5	7	13	26	39	65	104	130
	30%	2	4	6	8	10	20	39	59	98	156	195
	40%	3	5	8	10	13	26	52	78	130	208	260
	50%	3	7	10	13	16	33	65	98	163	260	326
	60%	4	8	12	16	20	39	78	117	195	313	391
	70%	5	9	14	18	23	46	91	137	228	365	456
	80%	5	10	16	21	26	52	104	156	260	417	521
	90%	6	12	18	23	29	59	117	176	293	469	586
	100%	7	13	20	26	33	65	130	195	326	521	651

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	2	3	5	8	13	16
	20%	0	1	1	1	2	3	6	10	16	25	32
	30%	0	1	1	2	2	5	10	14	24	38	48
	40%	1	1	2	3	3	6	13	19	32	51	64
	50%	1	2	2	3	4	8	16	24	40	64	80
	60%	1	2	3	4	5	10	19	29	48	76	95
	70%	1	2	3	4	6	11	22	33	56	89	111
	80%	1	3	4	5	6	13	25	38	64	102	127
	90%	1	3	4	6	7	14	29	43	72	114	143
	100%	2	3	5	6	8	16	32	48	80	127	159
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	3	4	5	6	13	26	39	65	104	130
	20%	3	5	8	10	13	26	52	78	130	208	259
	30%	4	8	12	16	19	39	78	117	195	311	389
	40%	5	10	16	21	26	52	104	156	259	415	519
	50%	6	13	19	26	32	65	130	195	324	519	649
	60%	8	16	23	31	39	78	156	234	389	623	778
	70%	9	18	27	36	45	91	182	272	454	727	908
	80%	10	21	31	42	52	104	208	311	519	830	1038
	90%	12	23	35	47	58	117	234	350	584	934	1168
	100%	13	26	39	52	65	130	259	389	649	1038	1297

Table 3.55 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** due to displacement from Morecambe OWF in the **winter** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.11%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.21%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.26%	0.32%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.21%	0.34%	0.43%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.54%
	60%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
	70%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.60%	0.75%
	80%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.69%	0.86%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.19%	0.29%	0.48%	0.77%	0.96%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.54%	0.86%	1.07%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	40%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.10%	0.13%
	60%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.15%	0.18%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.17%	0.21%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	100%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.21%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.21%	0.34%	0.43%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
	40%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.68%	0.85%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.85%	1.07%
	60%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.38%	0.64%	1.02%	1.28%
	70%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.30%	0.45%	0.75%	1.20%	1.49%
	80%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.34%	0.51%	0.85%	1.37%	1.71%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.38%	0.58%	0.96%	1.54%	1.92%
	100%	0.02%	0.04%	0.06%	0.09%	0.11%	0.21%	0.43%	0.64%	1.07%	1.71%	2.13%

Table 3.56 Mean, LCI and UCI displacement matrices for **razorbill** from Morecambe OWF in the **spring migration** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	2	2	4	8	11	19	31	38
	20%	1	2	2	3	4	8	15	23	38	61	76
	30%	1	2	3	5	6	11	23	34	57	92	114
	40%	2	3	5	6	8	15	31	46	76	122	153
	50%	2	4	6	8	10	19	38	57	95	153	191
	60%	2	5	7	9	11	23	46	69	114	183	229
	70%	3	5	8	11	13	27	53	80	134	214	267
	80%	3	6	9	12	15	31	61	92	153	244	305
	90%	3	7	10	14	17	34	69	103	172	275	343
	100%	4	8	11	15	19	38	76	114	191	305	382

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	6	11	17	21
	20%	0	1	1	2	2	4	9	13	21	34	43
	30%	1	1	2	3	3	6	13	19	32	51	64
	40%	1	2	3	3	4	9	17	26	43	68	85
	50%	1	2	3	4	5	11	21	32	53	85	107
	60%	1	3	4	5	6	13	26	38	64	102	128
	70%	1	3	4	6	7	15	30	45	75	120	149
	80%	2	3	5	7	9	17	34	51	85	137	171
	90%	2	4	6	8	10	19	38	58	96	154	192
	100%	2	4	6	9	11	21	43	64	107	171	214
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	2	3	6	12	17	29	46	58
	20%	1	2	3	5	6	12	23	35	58	93	116
	30%	2	3	5	7	9	17	35	52	87	139	174
	40%	2	5	7	9	12	23	46	70	116	186	232
	50%	3	6	9	12	14	29	58	87	145	232	290
	60%	3	7	10	14	17	35	70	104	174	278	348
	70%	4	8	12	16	20	41	81	122	203	325	406
	80%	5	9	14	19	23	46	93	139	232	371	464
	90%	5	10	16	21	26	52	104	157	261	417	522
	100%	6	12	17	23	29	58	116	174	290	464	580

Table 3.57 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** due to displacement from Morecambe OWF in the **spring migration** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	30%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.11%
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.21%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.20%	0.25%
	80%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.23%	0.28%
	90%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	100%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.28%	0.35%

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	60%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.12%
	70%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	80%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	100%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.11%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.21%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.27%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.26%	0.32%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.30%	0.38%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.21%	0.34%	0.43%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.14%	0.24%	0.39%	0.48%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.54%



Table 3.58 Mean, LCI and UCI displacement matrices for **puffin** from Morecambe OWF in the **breeding** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	0	1	2	2	4	6	8
	30%	0	0	0	0	1	1	2	3	6	9	12
	40%	0	0	0	1	1	2	3	5	8	12	15
	50%	0	0	1	1	1	2	4	6	10	15	19
	60%	0	0	1	1	1	2	5	7	12	19	23
	70%	0	1	1	1	1	3	5	8	14	22	27
	80%	0	1	1	1	2	3	6	9	15	25	31
	90%	0	1	1	1	2	3	7	10	17	28	35
	100%	0	1	1	2	2	4	8	12	19	31	39

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	2
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	2	2	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	0	1	1	2	4	5
	70%	0	0	0	0	0	1	1	2	3	4	5
	80%	0	0	0	0	0	1	1	2	3	5	6
	90%	0	0	0	0	0	1	1	2	3	6	7
	100%	0	0	0	0	0	1	2	2	4	6	8
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	2	4	6	8
	20%	0	0	0	1	1	2	3	5	8	13	16
	30%	0	0	1	1	1	2	5	7	12	19	24
	40%	0	1	1	1	2	3	6	10	16	26	32
	50%	0	1	1	2	2	4	8	12	20	32	40
	60%	0	1	1	2	2	5	10	15	24	39	48
	70%	1	1	2	2	3	6	11	17	28	45	56
	80%	1	1	2	3	3	6	13	19	32	52	64
	90%	1	1	2	3	4	7	15	22	36	58	73
	100%	1	2	2	3	4	8	16	24	40	64	81

Table 3.59 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** due to displacement from Morecambe OWF in the **breeding** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%

Table 3.60 Mean, LCI and UCI displacement matrices for **puffin** from Morecambe OWF in the **non-breeding** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	2	4	6	8
	50%	0	0	0	0	0	1	2	3	5	8	10
	60%	0	0	0	0	1	1	2	4	6	9	12
	70%	0	0	0	1	1	1	3	4	7	11	14
	80%	0	0	0	1	1	2	3	5	8	13	16
	90%	0	0	1	1	1	2	4	5	9	14	18
	100%	0	0	1	1	1	2	4	6	10	16	20

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	1	1	1	2
	100%	0	0	0	0	0	0	0	1	1	1	2
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	4	5
	20%	0	0	0	0	1	1	2	3	5	8	10
	30%	0	0	0	1	1	2	3	5	8	12	15
	40%	0	0	1	1	1	2	4	6	10	16	20
	50%	0	1	1	1	1	3	5	8	13	20	25
	60%	0	1	1	1	2	3	6	9	15	24	30
	70%	0	1	1	1	2	4	7	11	18	28	36
	80%	0	1	1	2	2	4	8	12	20	32	41
	90%	0	1	1	2	2	5	9	14	23	37	46
	100%	1	1	2	2	3	5	10	15	25	41	51

Table 3.61 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** due to displacement from Morecambe OWF in the **non-breeding** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.02%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.02%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.02%	0.03%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%	0.03%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%	0.04%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%	0.04%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.05%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%	
	90%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%	
	100%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%	



Table 3.62 Mean, LCI and UCI displacement matrices for **shag** from Morecambe OWF in the **non-breeding** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1	2
	50%	0	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	0	1	1	1	2	3
	80%	0	0	0	0	0	0	0	1	1	2	3	3
	90%	0	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	0	1	1	2	3	4

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	1	1	2	3	5	6
	30%	0	0	0	0	0	1	1	2	3	6	7
	40%	0	0	0	0	0	1	2	3	5	7	9
	50%	0	0	0	0	1	1	2	3	6	9	12
	60%	0	0	0	1	1	1	3	4	7	11	14
	70%	0	0	0	1	1	2	3	5	8	13	16
	80%	0	0	1	1	1	2	4	6	9	15	18
	90%	0	0	1	1	1	2	4	6	10	17	21
	100%	0	0	1	1	1	2	5	7	12	18	23

Table 3.63 Mean, LCI and UCI displacement matrices showing change in mortality rate for **shag** due to displacement from Morecambe OWF in the **non-breeding** season. Estimated population based on Windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.04%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.06%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	90%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	100%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%	
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%	
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%	
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.26%	0.32%	
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%	
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%	
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.51%	
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.46%	0.58%	
100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%		

### 3.1.6 Displacement matrices – HRA

88. **Table 3.64** to **Table 3.475** report estimated numbers and estimated change in percentage mortality rate due to displacement by the Project, for individual SPA seabird colonies in each defined season (Furness, 2015) of their annual cycle and year round (with relevance and connectivity to the Project).
89. In displacement mortality estimates, the most recent SMP database counts for each SPA colony are used as the estimated number of individuals available to be displaced by the Project. Estimated numbers of individuals subject to mortality due to displacement are reported in table cells, for varying rates of a) displacement (from 10% to 100%) and b) mortality (from 1% to 100%).
90. For the ranges of displacement and mortality most likely to apply (in accordance with SNCB guidance, 2017), and of most relevance to assessment, the corresponding cells in the matrix are highlighted in grey. The advised range varies between species.
91. A change in percentage mortality rate due to displacement is calculated for each species in each relevant SPA, with the estimated additional mortalities due to displacement by the Project expressed as percentages of the estimated baseline mortality in the SPA's population. These are based on reference population size and a reference baseline mortality rate of the species per published sources.

Table 3.64 Mean, LCI and UCI displacement matrices for **common scoter** apportioned to **Liverpool Bay SPA** during the **construction phase** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	1	1	2	3	5	9	11
	30%	0	0	0	1	1	1	3	4	6	10	13
	40%	0	0	1	1	1	2	4	6	10	15	19
	50%	0	0	1	1	1	2	4	6	11	17	22
	60%	0	1	1	1	1	3	5	8	13	21	26
	70%	0	1	1	1	2	3	6	9	15	24	30
	80%	0	1	1	1	2	3	7	10	17	28	34
	90%	0	1	1	2	2	4	8	12	19	31	39
	100%	0	1	1	2	2	4	9	13	22	34	43

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	1	3	4	7	10	13
	20%	0	1	1	1	2	3	7	10	16	26	33
	30%	0	1	1	2	2	4	8	12	20	31	39
	40%	1	1	2	2	3	6	12	18	29	47	59
	50%	1	1	2	3	3	7	13	20	33	52	65
	60%	1	2	2	3	4	8	16	24	39	63	78
	70%	1	2	3	4	5	9	18	27	46	73	92
	80%	1	2	3	4	5	10	21	31	52	84	105
	90%	1	2	4	5	6	12	24	35	59	94	118
	100%	1	3	4	5	7	13	26	39	65	105	131

Table 3.65 Mean, LCI and UCI displacement matrices showing change in mortality rate for **common scoter** apportioned to **Liverpool Bay SPA** due to displacement from Morecambe OWF during the **construction** phase in the **non-breeding** season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	80%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	90%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	100%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%



LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	30%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.14%	0.17%
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%
	70%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.25%	0.31%
	90%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%

Table 3.66 Mean, LCI and UCI **year-round** displacement matrices for **common scoter** apportioned to **Liverpool Bay SPA** during the **construction phase** of the Project. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	1	1	2	3	5	9	11
	30%	0	0	0	1	1	1	3	4	6	10	13
	40%	0	0	1	1	1	2	4	6	10	15	19
	50%	0	0	1	1	1	2	4	6	11	17	22
	60%	0	1	1	1	1	3	5	8	13	21	26
	70%	0	1	1	1	2	3	6	9	15	24	30
	80%	0	1	1	1	2	3	7	10	17	28	34
	90%	0	1	1	2	2	4	8	12	19	31	39
	100%	0	1	1	2	2	4	9	13	22	34	43

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	1	3	4	7	10	13
	20%	0	1	1	1	2	3	7	10	16	26	33
	30%	0	1	1	2	2	4	8	12	20	31	39
	40%	1	1	2	2	3	6	12	18	29	47	59
	50%	1	1	2	3	3	7	13	20	33	52	65
	60%	1	2	2	3	4	8	16	24	39	63	78
	70%	1	2	3	4	5	9	18	27	46	73	92
	80%	1	2	3	4	5	10	21	31	52	84	105
	90%	1	2	4	5	6	12	24	35	59	94	118
	100%	1	3	4	5	7	13	26	39	65	105	131

Table 3.67 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **common scoter** apportioned to **Liverpool Bay SPA** due to displacement from Morecambe OWF during the **construction phase**. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	80%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	90%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	100%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%	
	30%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%	
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.14%	0.17%	
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%	
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%	
	70%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%	
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.25%	0.31%	
	90%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%	
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%	

Table 3.68 Mean, LCI and UCI displacement matrices for **common scoter** apportioned to **Liverpool Bay SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	1	1	2	3	5	9	11
	30%	0	0	0	1	1	1	3	4	6	10	13
	40%	0	0	1	1	1	2	3	5	9	14	17
	50%	0	0	1	1	1	2	4	6	11	17	22
	60%	0	1	1	1	1	3	5	8	13	21	26
	70%	0	1	1	1	2	3	6	9	15	24	30
	80%	0	1	1	1	2	3	7	10	17	28	34
	90%	0	1	1	2	2	4	8	12	19	31	39
	100%	0	1	1	2	2	4	9	13	22	34	43

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	1	3	4	7	10	13
	20%	0	1	1	1	2	3	7	10	16	26	33
	30%	0	1	1	2	2	4	8	12	20	31	39
	40%	1	1	2	2	3	5	10	16	26	42	52
	50%	1	1	2	3	3	7	13	20	33	52	65
	60%	1	2	2	3	4	8	16	24	39	63	78
	70%	1	2	3	4	5	9	18	27	46	73	92
	80%	1	2	3	4	5	10	21	31	52	84	105
	90%	1	2	4	5	6	12	24	35	59	94	118
	100%	1	3	4	5	7	13	26	39	65	105	131

Table 3.69 Mean, LCI and UCI displacement matrices showing change in mortality rate for **common scoter** apportioned to **Liverpool Bay SPA** due to displacement from Morecambe OWF during operation in the **non-breeding** season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	80%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	90%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	100%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%	
	30%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%	
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%	
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%	
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%	
	70%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%	
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.25%	0.31%	
	90%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%	
100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%		

Table 3.70 Mean, LCI and UCI **year-round** displacement matrices for **common scoter** apportioned to **Liverpool Bay SPA** during **operation** of the Project. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	1	1	2	3	5	9	11
	30%	0	0	0	1	1	1	3	4	6	10	13
	40%	0	0	1	1	1	2	3	5	9	14	17
	50%	0	0	1	1	1	2	4	6	11	17	22
	60%	0	1	1	1	1	3	5	8	13	21	26
	70%	0	1	1	1	2	3	6	9	15	24	30
	80%	0	1	1	1	2	3	7	10	17	28	34
	90%	0	1	1	2	2	4	8	12	19	31	39
	100%	0	1	1	2	2	4	9	13	22	34	43

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	1	3	4	7	10	13
	20%	0	1	1	1	2	3	7	10	16	26	33
	30%	0	1	1	2	2	4	8	12	20	31	39
	40%	1	1	2	2	3	5	10	16	26	42	52
	50%	1	1	2	3	3	7	13	20	33	52	65
	60%	1	2	2	3	4	8	16	24	39	63	78
	70%	1	2	3	4	5	9	18	27	46	73	92
	80%	1	2	3	4	5	10	21	31	52	84	105
	90%	1	2	4	5	6	12	24	35	59	94	118
	100%	1	3	4	5	7	13	26	39	65	105	131

Table 3.71 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **common scoter** apportioned to **Liverpool Bay SPA** due to displacement from Morecambe OWF during operation. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	80%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	90%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	100%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%	
	30%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%	
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%	
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%	
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%	
	70%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%	
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.25%	0.31%	
	90%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%	
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%	

Table 3.72 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Aberdaron Coast and Bardsey Island SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	2	2	4	8	12	20	32	41
	20%	1	2	2	3	4	8	16	24	41	65	81
	30%	1	2	4	5	6	12	24	37	61	97	122
	40%	2	3	5	6	8	16	32	49	81	130	162
	50%	2	4	6	8	10	20	41	61	102	162	203
	60%	2	5	7	10	12	24	49	73	122	195	244
	70%	3	6	9	11	14	28	57	85	142	227	284
	80%	3	6	10	13	16	32	65	97	162	260	325
	90%	4	7	11	15	18	37	73	110	183	292	365
	100%	4	8	12	16	20	41	81	122	203	325	406

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	5	7
	20%	0	0	0	1	1	1	3	4	7	11	14
	30%	0	0	1	1	1	2	4	6	10	16	20
	40%	0	1	1	1	1	3	5	8	14	22	27
	50%	0	1	1	1	2	3	7	10	17	27	34
	60%	0	1	1	2	2	4	8	12	20	32	41
	70%	0	1	1	2	2	5	9	14	24	38	47
	80%	1	1	2	2	3	5	11	16	27	43	54
	90%	1	1	2	2	3	6	12	18	30	49	61
	100%	1	1	2	3	3	7	14	20	34	54	68
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	2	3	3	4	9	17	26	43	69	86
	20%	2	3	5	7	9	17	35	52	86	138	173
	30%	3	5	8	10	13	26	52	78	130	207	259
	40%	3	7	10	14	17	35	69	104	173	276	346
	50%	4	9	13	17	22	43	86	130	216	346	432
	60%	5	10	16	21	26	52	104	155	259	415	518
	70%	6	12	18	24	30	60	121	181	302	484	605
	80%	7	14	21	28	35	69	138	207	346	553	691
	90%	8	16	23	31	39	78	155	233	389	622	777
	100%	9	17	26	35	43	86	173	259	432	691	864

Table 3.73 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Aberdaron Coast and Bardsey Island SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.19%	0.29%	0.48%	0.77%	0.96%
	20%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.96%	1.54%	1.93%
	30%	0.03%	0.06%	0.09%	0.12%	0.14%	0.29%	0.58%	0.87%	1.45%	2.32%	2.89%
	40%	0.04%	0.08%	0.12%	0.15%	0.19%	0.39%	0.77%	1.16%	1.93%	3.09%	3.86%
	50%	0.05%	0.10%	0.14%	0.19%	0.24%	0.48%	0.96%	1.45%	2.41%	3.86%	4.82%
	60%	0.06%	0.12%	0.17%	0.23%	0.29%	0.58%	1.16%	1.74%	2.89%	4.63%	5.79%
	70%	0.07%	0.14%	0.20%	0.27%	0.34%	0.68%	1.35%	2.03%	3.38%	5.40%	6.75%
	80%	0.08%	0.15%	0.23%	0.31%	0.39%	0.77%	1.54%	2.32%	3.86%	6.18%	7.72%
	90%	0.09%	0.17%	0.26%	0.35%	0.43%	0.87%	1.74%	2.61%	4.34%	6.95%	8.68%
	100%	0.10%	0.19%	0.29%	0.39%	0.48%	0.96%	1.93%	2.89%	4.82%	7.72%	9.65%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	20%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.26%	0.32%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.14%	0.24%	0.39%	0.48%
	40%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
	50%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.64%	0.80%
	60%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.19%	0.29%	0.48%	0.77%	0.96%
	70%	0.01%	0.02%	0.03%	0.04%	0.06%	0.11%	0.22%	0.34%	0.56%	0.90%	1.12%
	80%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.29%
	90%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.29%	0.43%	0.72%	1.16%	1.45%
	100%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.29%	1.61%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.04%	0.06%	0.08%	0.10%	0.21%	0.41%	0.62%	1.03%	1.64%	2.05%
	20%	0.04%	0.08%	0.12%	0.16%	0.21%	0.41%	0.82%	1.23%	2.05%	3.29%	4.11%
	30%	0.06%	0.12%	0.18%	0.25%	0.31%	0.62%	1.23%	1.85%	3.08%	4.93%	6.16%
	40%	0.08%	0.16%	0.25%	0.33%	0.41%	0.82%	1.64%	2.46%	4.11%	6.57%	8.21%
	50%	0.10%	0.21%	0.31%	0.41%	0.51%	1.03%	2.05%	3.08%	5.13%	8.21%	10.27%
	60%	0.12%	0.25%	0.37%	0.49%	0.62%	1.23%	2.46%	3.70%	6.16%	9.86%	12.32%
	70%	0.14%	0.29%	0.43%	0.57%	0.72%	1.44%	2.87%	4.31%	7.19%	11.50%	14.37%
	80%	0.16%	0.33%	0.49%	0.66%	0.82%	1.64%	3.29%	4.93%	8.21%	13.14%	16.43%
	90%	0.18%	0.37%	0.55%	0.74%	0.92%	1.85%	3.70%	5.54%	9.24%	14.78%	18.48%
	100%	0.21%	0.41%	0.62%	0.82%	1.03%	2.05%	4.11%	6.16%	10.27%	16.43%	20.53%

Table 3.74 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Aberdaron Coast and Bardsey Island SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	4	5
	20%	0	0	0	0	1	1	2	3	5	9	11
	30%	0	0	0	1	1	2	3	5	8	13	16
	40%	0	0	1	1	1	2	4	7	11	17	22
	50%	0	1	1	1	1	3	5	8	14	22	27
	60%	0	1	1	1	2	3	7	10	16	26	33
	70%	0	1	1	2	2	4	8	11	19	30	38
	80%	0	1	1	2	2	4	9	13	22	35	43
	90%	0	1	1	2	2	5	10	15	24	39	49
	100%	1	1	2	2	3	5	11	16	27	43	54

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	1	2	3
	20%	0	0	0	0	0	1	1	2	3	4	5
	30%	0	0	0	0	0	1	2	2	4	6	8
	40%	0	0	0	0	1	1	2	3	5	9	11
	50%	0	0	0	1	1	1	3	4	7	11	13
	60%	0	0	0	1	1	2	3	5	8	13	16
	70%	0	0	1	1	1	2	4	6	9	15	19
	80%	0	0	1	1	1	2	4	6	11	17	21
	90%	0	0	1	1	1	2	5	7	12	19	24
	100%	0	1	1	1	1	3	5	8	13	21	27
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	3	5	7	9
	20%	0	0	1	1	1	2	4	5	9	15	18
	30%	0	1	1	1	1	3	5	8	14	22	27
	40%	0	1	1	1	2	4	7	11	18	29	36
	50%	0	1	1	2	2	5	9	14	23	36	46
	60%	1	1	2	2	3	5	11	16	27	44	55
	70%	1	1	2	3	3	6	13	19	32	51	64
	80%	1	1	2	3	4	7	15	22	36	58	73
	90%	1	2	2	3	4	8	16	25	41	66	82
	100%	1	2	3	4	5	9	18	27	46	73	91

Table 3.75 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Aberdaron Coast and Bardsey Island SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.52%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.64%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.39%	0.62%	0.77%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.83%	1.03%
	90%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%
	100%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.29%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.31%	0.38%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.22%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.43%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.65%
	40%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.69%	0.87%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.87%	1.08%
	60%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.65%	1.04%	1.30%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.45%	0.76%	1.21%	1.51%
	80%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.38%	1.73%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.97%	1.56%	1.95%
	100%	0.02%	0.04%	0.06%	0.09%	0.11%	0.22%	0.43%	0.65%	1.08%	1.73%	2.16%

Table 3.76 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Aberdaron Coast and Bardsey Island SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	3
	20%	0	0	0	0	0	1	1	2	3	5	7
	30%	0	0	0	0	0	1	2	3	5	8	10
	40%	0	0	0	1	1	1	3	4	7	11	13
	50%	0	0	0	1	1	2	3	5	8	13	17
	60%	0	0	1	1	1	2	4	6	10	16	20
	70%	0	0	1	1	1	2	5	7	12	19	23
	80%	0	1	1	1	1	3	5	8	13	21	26
	90%	0	1	1	1	1	3	6	9	15	24	30
	100%	0	1	1	1	2	3	7	10	17	26	33

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	3	5	8	10
	20%	0	0	1	1	1	2	4	6	10	15	19
	30%	0	1	1	1	1	3	6	9	14	23	29
	40%	0	1	1	2	2	4	8	12	19	31	39
	50%	0	1	1	2	2	5	10	14	24	39	48
	60%	1	1	2	2	3	6	12	17	29	46	58
	70%	1	1	2	3	3	7	14	20	34	54	68
	80%	1	2	2	3	4	8	15	23	39	62	77
	90%	1	2	3	3	4	9	17	26	43	69	87
	100%	1	2	3	4	5	10	19	29	48	77	96

Table 3.77 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Aberdaron Coast and Bardsey Island SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.31%	0.39%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.44%	0.55%
	80%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.31%	0.50%	0.63%
	90%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.57%	0.71%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.79%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%	
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%	
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.34%	0.55%	0.69%	
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.28%	0.46%	0.73%	0.92%	
	50%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.92%	1.15%	
	60%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.41%	0.69%	1.10%	1.38%	
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.28%	1.60%	
	80%	0.02%	0.04%	0.06%	0.07%	0.09%	0.18%	0.37%	0.55%	0.92%	1.47%	1.83%	
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.21%	0.41%	0.62%	1.03%	1.65%	2.06%	
	100%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.69%	1.15%	1.83%	2.29%	

Table 3.78 Mean, LCI and UCI **year-round** displacement matrices for **Manx shearwater** apportioned to **Aberdaron Coast and Bardsey Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	2	2	5	10	15	25	39	49
	20%	1	2	3	4	5	10	20	30	49	79	99
	30%	1	3	4	6	7	15	30	44	74	118	148
	40%	2	4	6	8	10	20	39	59	99	158	197
	50%	2	5	7	10	12	25	49	74	123	197	247
	60%	3	6	9	12	15	30	59	89	148	237	296
	70%	3	7	10	14	17	35	69	104	173	276	345
	80%	4	8	12	16	20	39	79	118	197	316	395
	90%	4	9	13	18	22	44	89	133	222	355	444
	100%	5	10	15	20	25	49	99	148	247	395	493

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	3	5	8	9
	20%	0	0	1	1	1	2	4	6	9	15	19
	30%	0	1	1	1	1	3	6	8	14	23	28
	40%	0	1	1	2	2	4	8	11	19	30	38
	50%	0	1	1	2	2	5	9	14	24	38	47
	60%	1	1	2	2	3	6	11	17	28	45	57
	70%	1	1	2	3	3	7	13	20	33	53	66
	80%	1	2	2	3	4	8	15	23	38	60	76
	90%	1	2	3	3	4	8	17	25	42	68	85
	100%	1	2	3	4	5	9	19	28	47	76	94
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	2	3	4	5	11	21	32	53	84	105
	20%	2	4	6	8	11	21	42	63	105	168	210
	30%	3	6	9	13	16	32	63	95	158	252	315
	40%	4	8	13	17	21	42	84	126	210	336	421
	50%	5	11	16	21	26	53	105	158	263	421	526
	60%	6	13	19	25	32	63	126	189	315	505	631
	70%	7	15	22	29	37	74	147	221	368	589	736
	80%	8	17	25	34	42	84	168	252	421	673	841
	90%	9	19	28	38	47	95	189	284	473	757	946
	100%	11	21	32	42	53	105	210	315	526	841	1051

Table 3.79 Mean, LCI and UCI year-round displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Aberdaron Coast and Bardsey Island SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.23%	0.35%	0.59%	0.94%	1.17%
	20%	0.02%	0.05%	0.07%	0.09%	0.12%	0.23%	0.47%	0.70%	1.17%	1.88%	2.35%
	30%	0.04%	0.07%	0.11%	0.14%	0.18%	0.35%	0.70%	1.06%	1.76%	2.81%	3.52%
	40%	0.05%	0.09%	0.14%	0.19%	0.23%	0.47%	0.94%	1.41%	2.35%	3.75%	4.69%
	50%	0.06%	0.12%	0.18%	0.23%	0.29%	0.59%	1.17%	1.76%	2.93%	4.69%	5.86%
	60%	0.07%	0.14%	0.21%	0.28%	0.35%	0.70%	1.41%	2.11%	3.52%	5.63%	7.04%
	70%	0.08%	0.16%	0.25%	0.33%	0.41%	0.82%	1.64%	2.46%	4.10%	6.57%	8.21%
	80%	0.09%	0.19%	0.28%	0.38%	0.47%	0.94%	1.88%	2.81%	4.69%	7.50%	9.38%
	90%	0.11%	0.21%	0.32%	0.42%	0.53%	1.06%	2.11%	3.17%	5.28%	8.44%	10.55%
	100%	0.12%	0.23%	0.35%	0.47%	0.59%	1.17%	2.35%	3.52%	5.86%	9.38%	11.73%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.34%	0.54%	0.67%
	40%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	50%	0.01%	0.02%	0.03%	0.04%	0.06%	0.11%	0.22%	0.34%	0.56%	0.90%	1.12%
	60%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.27%	0.40%	0.67%	1.08%	1.35%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.31%	0.47%	0.79%	1.26%	1.57%
	80%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.54%	0.90%	1.44%	1.79%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.40%	0.61%	1.01%	1.62%	2.02%
	100%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.45%	0.67%	1.12%	1.79%	2.24%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.05%	0.07%	0.10%	0.12%	0.25%	0.50%	0.75%	1.25%	2.00%	2.50%
	20%	0.05%	0.10%	0.15%	0.20%	0.25%	0.50%	1.00%	1.50%	2.50%	4.00%	5.00%
	30%	0.07%	0.15%	0.22%	0.30%	0.37%	0.75%	1.50%	2.25%	3.75%	6.00%	7.50%
	40%	0.10%	0.20%	0.30%	0.40%	0.50%	1.00%	2.00%	3.00%	5.00%	8.00%	9.99%
	50%	0.12%	0.25%	0.37%	0.50%	0.62%	1.25%	2.50%	3.75%	6.25%	9.99%	12.49%
	60%	0.15%	0.30%	0.45%	0.60%	0.75%	1.50%	3.00%	4.50%	7.50%	11.99%	14.99%
	70%	0.17%	0.35%	0.52%	0.70%	0.87%	1.75%	3.50%	5.25%	8.75%	13.99%	17.49%
	80%	0.20%	0.40%	0.60%	0.80%	1.00%	2.00%	4.00%	6.00%	9.99%	15.99%	19.99%
	90%	0.22%	0.45%	0.67%	0.90%	1.12%	2.25%	4.50%	6.75%	11.24%	17.99%	22.49%
	100%	0.25%	0.50%	0.75%	1.00%	1.25%	2.50%	5.00%	7.50%	12.49%	19.99%	24.99%

Table 3.80 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Copeland Islands SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	1	1	2	3	5	8	10
	20%	0	0	1	1	1	2	4	6	10	17	21
	30%	0	1	1	1	2	3	6	9	16	25	31
	40%	0	1	1	2	2	4	8	13	21	33	42
	50%	1	1	2	2	3	5	10	16	26	42	52
	60%	1	1	2	3	3	6	13	19	31	50	63
	70%	1	1	2	3	4	7	15	22	37	58	73
	80%	1	2	3	3	4	8	17	25	42	67	84
	90%	1	2	3	4	5	9	19	28	47	75	94
	100%	1	2	3	4	5	10	21	31	52	84	104

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	1	2
	20%	0	0	0	0	0	0	1	1	2	3	3
	30%	0	0	0	0	0	1	1	2	3	4	5
	40%	0	0	0	0	0	1	1	2	3	6	7
	50%	0	0	0	0	0	1	2	3	4	7	9
	60%	0	0	0	0	1	1	2	3	5	8	10
	70%	0	0	0	0	1	1	2	4	6	10	12
	80%	0	0	0	1	1	1	3	4	7	11	14
	90%	0	0	0	1	1	2	3	5	8	13	16
	100%	0	0	1	1	1	2	3	5	9	14	17
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	7	11	18	22
	20%	0	1	1	2	2	4	9	13	22	36	44
	30%	1	1	2	3	3	7	13	20	33	53	67
	40%	1	2	3	4	4	9	18	27	44	71	89
	50%	1	2	3	4	6	11	22	33	56	89	111
	60%	1	3	4	5	7	13	27	40	67	107	133
	70%	2	3	5	6	8	16	31	47	78	124	156
	80%	2	4	5	7	9	18	36	53	89	142	178
	90%	2	4	6	8	10	20	40	60	100	160	200
	100%	2	4	7	9	11	22	44	67	111	178	222

Table 3.81 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Copeland Islands SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.20%	0.34%	0.54%	0.68%
	20%	0.01%	0.03%	0.04%	0.05%	0.07%	0.14%	0.27%	0.41%	0.68%	1.09%	1.36%
	30%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.41%	0.61%	1.02%	1.63%	2.04%
	40%	0.03%	0.05%	0.08%	0.11%	0.14%	0.27%	0.54%	0.82%	1.36%	2.18%	2.72%
	50%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.68%	1.02%	1.70%	2.72%	3.40%
	60%	0.04%	0.08%	0.12%	0.16%	0.20%	0.41%	0.82%	1.22%	2.04%	3.27%	4.08%
	70%	0.05%	0.10%	0.14%	0.19%	0.24%	0.48%	0.95%	1.43%	2.38%	3.81%	4.76%
	80%	0.05%	0.11%	0.16%	0.22%	0.27%	0.54%	1.09%	1.63%	2.72%	4.36%	5.44%
	90%	0.06%	0.12%	0.18%	0.24%	0.31%	0.61%	1.22%	1.84%	3.06%	4.90%	6.12%
	100%	0.07%	0.14%	0.20%	0.27%	0.34%	0.68%	1.36%	2.04%	3.40%	5.44%	6.81%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.36%	0.45%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.45%	0.57%
	60%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.20%	0.34%	0.54%	0.68%
	70%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.63%	0.79%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.73%	0.91%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.31%	0.51%	0.82%	1.02%
	100%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.91%	1.13%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.29%	0.43%	0.72%	1.16%	1.45%
	20%	0.03%	0.06%	0.09%	0.12%	0.14%	0.29%	0.58%	0.87%	1.45%	2.32%	2.90%
	30%	0.04%	0.09%	0.13%	0.17%	0.22%	0.43%	0.87%	1.30%	2.17%	3.48%	4.34%
	40%	0.06%	0.12%	0.17%	0.23%	0.29%	0.58%	1.16%	1.74%	2.90%	4.63%	5.79%
	50%	0.07%	0.14%	0.22%	0.29%	0.36%	0.72%	1.45%	2.17%	3.62%	5.79%	7.24%
	60%	0.09%	0.17%	0.26%	0.35%	0.43%	0.87%	1.74%	2.61%	4.34%	6.95%	8.69%
	70%	0.10%	0.20%	0.30%	0.41%	0.51%	1.01%	2.03%	3.04%	5.07%	8.11%	10.14%
	80%	0.12%	0.23%	0.35%	0.46%	0.58%	1.16%	2.32%	3.48%	5.79%	9.27%	11.58%
	90%	0.13%	0.26%	0.39%	0.52%	0.65%	1.30%	2.61%	3.91%	6.52%	10.43%	13.03%
	100%	0.14%	0.29%	0.43%	0.58%	0.72%	1.45%	2.90%	4.34%	7.24%	11.58%	14.48%

Table 3.82 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Copeland Islands SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	2	4	6	8
	50%	0	0	0	0	0	1	2	3	5	8	10
	60%	0	0	0	0	1	1	2	4	6	10	12
	70%	0	0	0	1	1	1	3	4	7	11	14
	80%	0	0	0	1	1	2	3	5	8	13	16
	90%	0	0	1	1	1	2	4	5	9	14	18
	100%	0	0	1	1	1	2	4	6	10	16	20

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	1	2	3
	40%	0	0	0	0	0	0	1	1	2	3	4
	50%	0	0	0	0	0	0	1	1	2	4	5
	60%	0	0	0	0	0	1	1	2	3	5	6
	70%	0	0	0	0	0	1	1	2	3	5	7
	80%	0	0	0	0	0	1	2	2	4	6	8
	90%	0	0	0	0	0	1	2	3	4	7	9
	100%	0	0	0	0	0	1	2	3	5	8	10
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	3
	20%	0	0	0	0	0	1	1	2	3	5	7
	30%	0	0	0	0	0	1	2	3	5	8	10
	40%	0	0	0	1	1	1	3	4	7	11	13
	50%	0	0	0	1	1	2	3	5	8	13	17
	60%	0	0	1	1	1	2	4	6	10	16	20
	70%	0	0	1	1	1	2	5	7	12	19	23
	80%	0	1	1	1	1	3	5	8	13	21	27
	90%	0	1	1	1	1	3	6	9	15	24	30
	100%	0	1	1	1	2	3	7	10	17	27	33

Table 3.83 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Copeland Islands SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.52%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.64%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.39%	0.62%	0.77%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.83%	1.03%
	90%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%
	100%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.29%

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.31%	0.38%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.36%	0.45%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.45%	0.57%
	60%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.20%	0.34%	0.54%	0.68%
	70%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.63%	0.79%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.73%	0.91%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.31%	0.51%	0.82%	1.02%
	100%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.91%	1.13%

Table 3.84 Mean, LCI and UCI displacement matrices for **Manx Shearwater** apportioned to **Copeland Islands SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	0	1	1	2	4	5
	50%	0	0	0	0	0	1	1	2	3	5	6
	60%	0	0	0	0	0	1	1	2	4	6	7
	70%	0	0	0	0	0	1	2	3	4	7	8
	80%	0	0	0	0	0	1	2	3	5	8	10
	90%	0	0	0	0	1	1	2	3	5	9	11
	100%	0	0	0	0	1	1	2	4	6	10	12

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	0	1	1	2	4	6	7
	30%	0	0	0	0	1	1	2	3	5	8	11
	40%	0	0	0	1	1	1	3	4	7	11	14
	50%	0	0	1	1	1	2	4	5	9	14	18
	60%	0	0	1	1	1	2	4	6	11	17	21
	70%	0	0	1	1	1	2	5	7	12	20	25
	80%	0	1	1	1	1	3	6	8	14	23	28
	90%	0	1	1	1	2	3	6	9	16	25	32
	100%	0	1	1	1	2	4	7	11	18	28	35

Table 3.85 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Copeland Islands SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.31%	0.39%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.44%	0.55%
	80%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.31%	0.50%	0.63%
	90%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.57%	0.71%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.79%



LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.34%	0.55%	0.69%
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.28%	0.46%	0.73%	0.92%
	50%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.92%	1.15%
	60%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.41%	0.69%	1.10%	1.38%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.28%	1.60%
	80%	0.02%	0.04%	0.06%	0.07%	0.09%	0.18%	0.37%	0.55%	0.92%	1.47%	1.83%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.21%	0.41%	0.62%	1.03%	1.65%	2.06%
	100%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.69%	1.15%	1.83%	2.29%

Table 3.86 Mean, LCI and UCI **year-round** displacement matrices for **Manx shearwater** apportioned to **Copeland Islands SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	1	3	4	7	11	14
	20%	0	1	1	1	1	3	5	8	14	22	27
	30%	0	1	1	2	2	4	8	12	20	33	41
	40%	1	1	2	2	3	5	11	16	27	44	55
	50%	1	1	2	3	3	7	14	20	34	55	68
	60%	1	2	2	3	4	8	16	25	41	65	82
	70%	1	2	3	4	5	10	19	29	48	76	95
	80%	1	2	3	4	5	11	22	33	55	87	109
	90%	1	2	4	5	6	12	25	37	61	98	123
	100%	1	3	4	5	7	14	27	41	68	109	136

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	1	2	3
	20%	0	0	0	0	0	1	1	2	3	4	5
	30%	0	0	0	0	0	1	2	2	4	7	8
	40%	0	0	0	0	1	1	2	3	5	9	11
	50%	0	0	0	1	1	1	3	4	7	11	14
	60%	0	0	0	1	1	2	3	5	8	13	16
	70%	0	0	1	1	1	2	4	6	10	15	19
	80%	0	0	1	1	1	2	4	7	11	17	22
	90%	0	0	1	1	1	2	5	7	12	20	24
	100%	0	1	1	1	1	3	5	8	14	22	27
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	1	1	3	6	9	15	23	29
	20%	1	1	2	2	3	6	12	17	29	46	58
	30%	1	2	3	3	4	9	17	26	44	70	87
	40%	1	2	3	5	6	12	23	35	58	93	116
	50%	1	3	4	6	7	15	29	44	73	116	145
	60%	2	3	5	7	9	17	35	52	87	139	174
	70%	2	4	6	8	10	20	41	61	102	163	203
	80%	2	5	7	9	12	23	46	70	116	186	232
	90%	3	5	8	10	13	26	52	78	131	209	262
	100%	3	6	9	12	15	29	58	87	145	232	291

Table 3.87 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Copeland Islands SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.44%	0.71%	0.89%
	20%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.53%	0.89%	1.42%	1.78%
	30%	0.03%	0.05%	0.08%	0.11%	0.13%	0.27%	0.53%	0.80%	1.33%	2.13%	2.66%
	40%	0.04%	0.07%	0.11%	0.14%	0.18%	0.36%	0.71%	1.07%	1.78%	2.84%	3.55%
	50%	0.04%	0.09%	0.13%	0.18%	0.22%	0.44%	0.89%	1.33%	2.22%	3.55%	4.44%
	60%	0.05%	0.11%	0.16%	0.21%	0.27%	0.53%	1.07%	1.60%	2.66%	4.26%	5.33%
	70%	0.06%	0.12%	0.19%	0.25%	0.31%	0.62%	1.24%	1.87%	3.11%	4.97%	6.22%
	80%	0.07%	0.14%	0.21%	0.28%	0.36%	0.71%	1.42%	2.13%	3.55%	5.68%	7.11%
	90%	0.08%	0.16%	0.24%	0.32%	0.40%	0.80%	1.60%	2.40%	4.00%	6.39%	7.99%
	100%	0.09%	0.18%	0.27%	0.36%	0.44%	0.89%	1.78%	2.66%	4.44%	7.11%	8.88%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	20%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.28%	0.35%
	30%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.42%	0.53%
	40%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.57%	0.71%
	50%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.44%	0.71%	0.88%
	60%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.85%	1.06%
	70%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.25%	0.37%	0.62%	0.99%	1.24%
	80%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.42%	0.71%	1.13%	1.42%
	90%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.27%	1.59%
	100%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.35%	0.53%	0.88%	1.42%	1.77%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.04%	0.06%	0.08%	0.09%	0.19%	0.38%	0.57%	0.95%	1.51%	1.89%
	20%	0.04%	0.08%	0.11%	0.15%	0.19%	0.38%	0.76%	1.14%	1.89%	3.03%	3.79%
	30%	0.06%	0.11%	0.17%	0.23%	0.28%	0.57%	1.14%	1.70%	2.84%	4.54%	5.68%
	40%	0.08%	0.15%	0.23%	0.30%	0.38%	0.76%	1.51%	2.27%	3.79%	6.06%	7.57%
	50%	0.09%	0.19%	0.28%	0.38%	0.47%	0.95%	1.89%	2.84%	4.73%	7.57%	9.47%
	60%	0.11%	0.23%	0.34%	0.45%	0.57%	1.14%	2.27%	3.41%	5.68%	9.09%	11.36%
	70%	0.13%	0.27%	0.40%	0.53%	0.66%	1.33%	2.65%	3.98%	6.63%	10.60%	13.25%
	80%	0.15%	0.30%	0.45%	0.61%	0.76%	1.51%	3.03%	4.54%	7.57%	12.12%	15.15%
	90%	0.17%	0.34%	0.51%	0.68%	0.85%	1.70%	3.41%	5.11%	8.52%	13.63%	17.04%
	100%	0.19%	0.38%	0.57%	0.76%	0.95%	1.89%	3.79%	5.68%	9.47%	15.15%	18.94%

Table 3.88 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	4	7	11	14	18	36	72	108	180	288	360
	20%	7	14	22	29	36	72	144	216	360	576	720
	30%	11	22	32	43	54	108	216	324	540	864	1080
	40%	14	29	43	58	72	144	288	432	720	1152	1440
	50%	18	36	54	72	90	180	360	540	900	1440	1800
	60%	22	43	65	86	108	216	432	648	1080	1728	2161
	70%	25	50	76	101	126	252	504	756	1260	2017	2521
	80%	29	58	86	115	144	288	576	864	1440	2305	2881
	90%	32	65	97	130	162	324	648	972	1620	2593	3241
	100%	36	72	108	144	180	360	720	1080	1800	2881	3601

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	2	3	6	12	18	30	48	60
	20%	1	2	4	5	6	12	24	36	60	96	120
	30%	2	4	5	7	9	18	36	54	90	144	180
	40%	2	5	7	10	12	24	48	72	120	192	240
	50%	3	6	9	12	15	30	60	90	150	240	300
	60%	4	7	11	14	18	36	72	108	180	288	360
	70%	4	8	13	17	21	42	84	126	210	336	420
	80%	5	10	14	19	24	48	96	144	240	384	480
	90%	5	11	16	22	27	54	108	162	270	432	540
	100%	6	12	18	24	30	60	120	180	300	480	600
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	8	15	23	31	38	77	153	230	383	613	766
	20%	15	31	46	61	77	153	306	460	766	1226	1532
	30%	23	46	69	92	115	230	460	690	1149	1839	2299
	40%	31	61	92	123	153	306	613	919	1532	2452	3065
	50%	38	77	115	153	192	383	766	1149	1915	3065	3831
	60%	46	92	138	184	230	460	919	1379	2299	3678	4597
	70%	54	107	161	215	268	536	1073	1609	2682	4291	5363
	80%	61	123	184	245	306	613	1226	1839	3065	4904	6129
	90%	69	138	207	276	345	690	1379	2069	3448	5516	6896
	100%	77	153	230	306	383	766	1532	2299	3831	6129	7662

Table 3.89 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	20%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.49%	0.61%
	30%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.46%	0.73%	0.91%
	40%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.37%	0.61%	0.97%	1.22%
	50%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.46%	0.76%	1.22%	1.52%
	60%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.37%	0.55%	0.91%	1.46%	1.83%
	70%	0.02%	0.04%	0.06%	0.09%	0.11%	0.21%	0.43%	0.64%	1.06%	1.70%	2.13%
	80%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.49%	0.73%	1.22%	1.95%	2.43%
	90%	0.03%	0.05%	0.08%	0.11%	0.14%	0.27%	0.55%	0.82%	1.37%	2.19%	2.74%
	100%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.61%	0.91%	1.52%	2.43%	3.04%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.28%	0.35%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.41%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.36%	0.46%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.65%
	20%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.65%	1.04%	1.29%
	30%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.97%	1.55%	1.94%
	40%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.52%	0.78%	1.29%	2.07%	2.59%
	50%	0.03%	0.06%	0.10%	0.13%	0.16%	0.32%	0.65%	0.97%	1.62%	2.59%	3.24%
	60%	0.04%	0.08%	0.12%	0.16%	0.19%	0.39%	0.78%	1.17%	1.94%	3.11%	3.88%
	70%	0.05%	0.09%	0.14%	0.18%	0.23%	0.45%	0.91%	1.36%	2.27%	3.63%	4.53%
	80%	0.05%	0.10%	0.16%	0.21%	0.26%	0.52%	1.04%	1.55%	2.59%	4.14%	5.18%
	90%	0.06%	0.12%	0.17%	0.23%	0.29%	0.58%	1.17%	1.75%	2.91%	4.66%	5.83%
	100%	0.06%	0.13%	0.19%	0.26%	0.32%	0.65%	1.29%	1.94%	3.24%	5.18%	6.47%

Table 3.90 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	2	4	5	6	12	23	35	59	94	117
	20%	2	5	7	9	12	23	47	70	117	188	235
	30%	4	7	11	14	18	35	70	106	176	282	352
	40%	5	9	14	19	23	47	94	141	235	376	469
	50%	6	12	18	23	29	59	117	176	293	469	587
	60%	7	14	21	28	35	70	141	211	352	563	704
	70%	8	16	25	33	41	82	164	246	411	657	821
	80%	9	19	28	38	47	94	188	282	469	751	939
	90%	11	21	32	42	53	106	211	317	528	845	1056
	100%	12	23	35	47	59	117	235	352	587	939	1174

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	2	3	6	12	17	29	46	58
	20%	1	2	3	5	6	12	23	35	58	93	116
	30%	2	3	5	7	9	17	35	52	87	139	174
	40%	2	5	7	9	12	23	46	70	116	185	232
	50%	3	6	9	12	14	29	58	87	145	232	290
	60%	3	7	10	14	17	35	70	104	174	278	348
	70%	4	8	12	16	20	41	81	122	203	325	406
	80%	5	9	14	19	23	46	93	139	232	371	464
	90%	5	10	16	21	26	52	104	156	261	417	522
	100%	6	12	17	23	29	58	116	174	290	464	579
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	2	4	6	8	10	20	39	59	98	158	197
	20%	4	8	12	16	20	39	79	118	197	315	394
	30%	6	12	18	24	30	59	118	177	295	473	591
	40%	8	16	24	32	39	79	158	236	394	630	788
	50%	10	20	30	39	49	98	197	295	492	788	984
	60%	12	24	35	47	59	118	236	354	591	945	1181
	70%	14	28	41	55	69	138	276	413	689	1103	1378
	80%	16	32	47	63	79	158	315	473	788	1260	1575
	90%	18	35	53	71	89	177	354	532	886	1418	1772
	100%	20	39	59	79	98	197	394	591	984	1575	1969

Table 3.91 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	30%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	60%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.59%
	70%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.35%	0.56%	0.69%
	80%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.63%	0.79%
	90%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.45%	0.71%	0.89%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.79%	0.99%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.20%	0.24%
	60%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.29%
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.31%	0.39%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.24%	0.39%	0.49%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.17%
	20%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.33%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	40%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.67%
	50%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.17%	0.25%	0.42%	0.67%	0.83%
	60%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.80%	1.00%
	70%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%
	80%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.27%	0.40%	0.67%	1.06%	1.33%
	90%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.30%	0.45%	0.75%	1.20%	1.50%
	100%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.33%	0.50%	0.83%	1.33%	1.66%

Table 3.92 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	3	4	7	14	21	36	57	72
	20%	1	3	4	6	7	14	29	43	72	115	143
	30%	2	4	6	9	11	21	43	64	107	172	215
	40%	3	6	9	11	14	29	57	86	143	229	286
	50%	4	7	11	14	18	36	72	107	179	286	358
	60%	4	9	13	17	21	43	86	129	215	344	430
	70%	5	10	15	20	25	50	100	150	251	401	501
	80%	6	11	17	23	29	57	115	172	286	458	573
	90%	6	13	19	26	32	64	129	193	322	516	645
	100%	7	14	21	29	36	72	143	215	358	573	716

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	2	4	6	8	10	21	42	63	104	167	209
	20%	4	8	13	17	21	42	83	125	209	334	417
	30%	6	13	19	25	31	63	125	188	313	501	626
	40%	8	17	25	33	42	83	167	250	417	668	834
	50%	10	21	31	42	52	104	209	313	521	834	1043
	60%	13	25	38	50	63	125	250	375	626	1001	1252
	70%	15	29	44	58	73	146	292	438	730	1168	1460
	80%	17	33	50	67	83	167	334	501	834	1335	1669
	90%	19	38	56	75	94	188	375	563	939	1502	1877
	100%	21	42	63	83	104	209	417	626	1043	1669	2086

Table 3.93 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.15%	0.18%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.13%	0.21%	0.34%	0.42%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.24%	0.39%	0.48%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.44%	0.54%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.61%



LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	20%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.28%	0.35%
	30%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.26%	0.42%	0.53%
	40%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.56%	0.71%
	50%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.26%	0.44%	0.71%	0.88%
	60%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.85%	1.06%
	70%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.25%	0.37%	0.62%	0.99%	1.23%
	80%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.42%	0.71%	1.13%	1.41%
	90%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.79%	1.27%	1.59%
	100%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.35%	0.53%	0.88%	1.41%	1.76%

Table 3.94 Mean, LCI and UCI year-round displacement matrices for **Manx shearwater** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	5	11	16	22	27	55	110	165	275	439	549
	20%	11	22	33	44	55	110	220	329	549	878	1098
	30%	16	33	49	66	82	165	329	494	824	1318	1647
	40%	22	44	66	88	110	220	439	659	1098	1757	2196
	50%	27	55	82	110	137	275	549	824	1373	2196	2745
	60%	33	66	99	132	165	329	659	988	1647	2635	3294
	70%	38	77	115	154	192	384	769	1153	1922	3075	3843
	80%	44	88	132	176	220	439	878	1318	2196	3514	4392
	90%	49	99	148	198	247	494	988	1482	2471	3953	4942
	100%	55	110	165	220	275	549	1098	1647	2745	4392	5491

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	2	4	5	6	12	24	35	59	94	118
	20%	2	5	7	9	12	24	47	71	118	189	236
	30%	4	7	11	14	18	35	71	106	177	283	354
	40%	5	9	14	19	24	47	94	141	236	377	472
	50%	6	12	18	24	29	59	118	177	295	472	590
	60%	7	14	21	28	35	71	141	212	354	566	707
	70%	8	17	25	33	41	83	165	248	413	660	825
	80%	9	19	28	38	47	94	189	283	472	755	943
	90%	11	21	32	42	53	106	212	318	531	849	1061
	100%	12	24	35	47	59	118	236	354	590	943	1179
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	12	23	35	47	59	117	234	351	586	937	1172
	20%	23	47	70	94	117	234	469	703	1172	1875	2343
	30%	35	70	105	141	176	351	703	1054	1757	2812	3515
	40%	47	94	141	187	234	469	937	1406	2343	3749	4687
	50%	59	117	176	234	293	586	1172	1757	2929	4687	5858
	60%	70	141	211	281	351	703	1406	2109	3515	5624	7030
	70%	82	164	246	328	410	820	1640	2460	4101	6561	8202
	80%	94	187	281	375	469	937	1875	2812	4687	7499	9373
	90%	105	211	316	422	527	1054	2109	3163	5272	8436	10545
	100%	117	234	351	469	586	1172	2343	3515	5858	9373	11717

Table 3.95 Mean, lower confidence interval (LCI) and upper confidence interval (UCI) **year-round** displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	20%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.19%	0.28%	0.46%	0.74%	0.93%
	30%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.42%	0.70%	1.11%	1.39%
	40%	0.02%	0.04%	0.06%	0.07%	0.09%	0.19%	0.37%	0.56%	0.93%	1.48%	1.86%
	50%	0.02%	0.05%	0.07%	0.09%	0.12%	0.23%	0.46%	0.70%	1.16%	1.86%	2.32%
	60%	0.03%	0.06%	0.08%	0.11%	0.14%	0.28%	0.56%	0.84%	1.39%	2.23%	2.78%
	70%	0.03%	0.06%	0.10%	0.13%	0.16%	0.32%	0.65%	0.97%	1.62%	2.60%	3.25%
	80%	0.04%	0.07%	0.11%	0.15%	0.19%	0.37%	0.74%	1.11%	1.86%	2.97%	3.71%
	90%	0.04%	0.08%	0.13%	0.17%	0.21%	0.42%	0.84%	1.25%	2.09%	3.34%	4.18%
	100%	0.05%	0.09%	0.14%	0.19%	0.23%	0.46%	0.93%	1.39%	2.32%	3.71%	4.64%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	30%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	60%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.60%
	70%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.35%	0.56%	0.70%
	80%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.64%	0.80%
	90%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.80%	1.00%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.79%	0.99%
	20%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.40%	0.59%	0.99%	1.58%	1.98%
	30%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.59%	0.89%	1.49%	2.38%	2.97%
	40%	0.04%	0.08%	0.12%	0.16%	0.20%	0.40%	0.79%	1.19%	1.98%	3.17%	3.96%
	50%	0.05%	0.10%	0.15%	0.20%	0.25%	0.50%	0.99%	1.49%	2.48%	3.96%	4.95%
	60%	0.06%	0.12%	0.18%	0.24%	0.30%	0.59%	1.19%	1.78%	2.97%	4.75%	5.94%
	70%	0.07%	0.14%	0.21%	0.28%	0.35%	0.69%	1.39%	2.08%	3.47%	5.54%	6.93%
	80%	0.08%	0.16%	0.24%	0.32%	0.40%	0.79%	1.58%	2.38%	3.96%	6.34%	7.92%
	90%	0.09%	0.18%	0.27%	0.36%	0.45%	0.89%	1.78%	2.67%	4.46%	7.13%	8.91%
	100%	0.10%	0.20%	0.30%	0.40%	0.50%	0.99%	1.98%	2.97%	4.95%	7.92%	9.90%

Table 3.96 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Rum SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	2	2	4	8	12	20	32	40
	20%	1	2	2	3	4	8	16	24	40	64	79
	30%	1	2	4	5	6	12	24	36	60	95	119
	40%	2	3	5	6	8	16	32	48	79	127	159
	50%	2	4	6	8	10	20	40	60	99	159	199
	60%	2	5	7	10	12	24	48	71	119	191	238
	70%	3	6	8	11	14	28	56	83	139	222	278
	80%	3	6	10	13	16	32	64	95	159	254	318
	90%	4	7	11	14	18	36	71	107	179	286	357
	100%	4	8	12	16	20	40	79	119	199	318	397

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	5	7
	20%	0	0	0	1	1	1	3	4	7	11	13
	30%	0	0	1	1	1	2	4	6	10	16	20
	40%	0	1	1	1	1	3	5	8	13	21	26
	50%	0	1	1	1	2	3	7	10	17	26	33
	60%	0	1	1	2	2	4	8	12	20	32	40
	70%	0	1	1	2	2	5	9	14	23	37	46
	80%	1	1	2	2	3	5	11	16	26	42	53
	90%	1	1	2	2	3	6	12	18	30	48	60
	100%	1	1	2	3	3	7	13	20	33	53	66
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	2	3	3	4	8	17	25	42	68	84
	20%	2	3	5	7	8	17	34	51	84	135	169
	30%	3	5	8	10	13	25	51	76	127	203	253
	40%	3	7	10	14	17	34	68	101	169	270	338
	50%	4	8	13	17	21	42	84	127	211	338	422
	60%	5	10	15	20	25	51	101	152	253	406	507
	70%	6	12	18	24	30	59	118	177	296	473	591
	80%	7	14	20	27	34	68	135	203	338	541	676
	90%	8	15	23	30	38	76	152	228	380	608	760
	100%	8	17	25	34	42	84	169	253	422	676	845

Table 3.97 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Rum SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.31%	0.38%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.38%	0.61%	0.76%
	70%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.45%	0.71%	0.89%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.31%	0.51%	0.81%	1.02%
	90%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.92%	1.15%
	100%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.25%	0.38%	0.64%	1.02%	1.27%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.08%
	50%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.11%
	60%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	70%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.14%	0.17%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	100%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.21%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%
	20%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.54%
	30%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.41%	0.65%	0.81%
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.87%	1.08%
	50%	0.01%	0.03%	0.04%	0.05%	0.07%	0.14%	0.27%	0.41%	0.68%	1.08%	1.35%
	60%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.49%	0.81%	1.30%	1.62%
	70%	0.02%	0.04%	0.06%	0.08%	0.09%	0.19%	0.38%	0.57%	0.95%	1.52%	1.90%
	80%	0.02%	0.04%	0.06%	0.09%	0.11%	0.22%	0.43%	0.65%	1.08%	1.73%	2.17%
	90%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.49%	0.73%	1.22%	1.95%	2.44%
	100%	0.03%	0.05%	0.08%	0.11%	0.14%	0.27%	0.54%	0.81%	1.35%	2.17%	2.71%

Table 3.98 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Rum SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	2	2	4	8	12	20	32	40
	20%	1	2	2	3	4	8	16	24	40	64	80
	30%	1	2	4	5	6	12	24	36	60	97	121
	40%	2	3	5	6	8	16	32	48	80	129	161
	50%	2	4	6	8	10	20	40	60	101	161	201
	60%	2	5	7	10	12	24	48	72	121	193	241
	70%	3	6	8	11	14	28	56	84	141	225	282
	80%	3	6	10	13	16	32	64	97	161	258	322
	90%	4	7	11	14	18	36	72	109	181	290	362
	100%	4	8	12	16	20	40	80	121	201	322	402

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	6	10	16	20
	20%	0	1	1	2	2	4	8	12	20	32	40
	30%	1	1	2	2	3	6	12	18	30	48	60
	40%	1	2	2	3	4	8	16	24	40	64	79
	50%	1	2	3	4	5	10	20	30	50	79	99
	60%	1	2	4	5	6	12	24	36	60	95	119
	70%	1	3	4	6	7	14	28	42	70	111	139
	80%	2	3	5	6	8	16	32	48	79	127	159
	90%	2	4	5	7	9	18	36	54	89	143	179
	100%	2	4	6	8	10	20	40	60	99	159	199
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	3	3	7	14	20	34	54	68
	20%	1	3	4	5	7	14	27	41	68	108	135
	30%	2	4	6	8	10	20	41	61	101	162	203
	40%	3	5	8	11	14	27	54	81	135	216	270
	50%	3	7	10	14	17	34	68	101	169	270	338
	60%	4	8	12	16	20	41	81	122	203	324	405
	70%	5	9	14	19	24	47	95	142	236	378	473
	80%	5	11	16	22	27	54	108	162	270	432	540
	90%	6	12	18	24	30	61	122	182	304	486	608
	100%	7	14	20	27	34	68	135	203	338	540	675

Table 3.99 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Rum SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.52%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.64%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.39%	0.62%	0.77%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.83%	1.03%
	90%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%
	100%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.29%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.31%	0.38%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.22%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.43%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.65%
	40%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.69%	0.87%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.87%	1.08%
	60%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.65%	1.04%	1.30%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.45%	0.76%	1.21%	1.51%
	80%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.38%	1.73%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.97%	1.56%	1.95%
	100%	0.02%	0.04%	0.06%	0.09%	0.11%	0.22%	0.43%	0.65%	1.08%	1.73%	2.16%

Table 3.100 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Rum SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	5	7	12	20	25
	20%	0	1	1	2	2	5	10	15	25	39	49
	30%	1	1	2	3	4	7	15	22	37	59	74
	40%	1	2	3	4	5	10	20	29	49	79	98
	50%	1	2	4	5	6	12	25	37	61	98	123
	60%	1	3	4	6	7	15	29	44	74	118	147
	70%	2	3	5	7	9	17	34	52	86	138	172
	80%	2	4	6	8	10	20	39	59	98	157	196
	90%	2	4	7	9	11	22	44	66	110	177	221
	100%	2	5	7	10	12	25	49	74	123	196	246

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	3	4	7	14	21	36	57	72
	20%	1	3	4	6	7	14	29	43	72	114	143
	30%	2	4	6	9	11	21	43	64	107	172	215
	40%	3	6	9	11	14	29	57	86	143	229	286
	50%	4	7	11	14	18	36	72	107	179	286	358
	60%	4	9	13	17	21	43	86	129	215	343	429
	70%	5	10	15	20	25	50	100	150	250	401	501
	80%	6	11	17	23	29	57	114	172	286	458	572
	90%	6	13	19	26	32	64	129	193	322	515	644
	100%	7	14	21	29	36	72	143	215	358	572	715

Table 3.101 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Rum SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.31%	0.39%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.44%	0.55%
	80%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.31%	0.50%	0.63%
	90%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.57%	0.71%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.79%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%	
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%	
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.34%	0.55%	0.69%	
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.28%	0.46%	0.73%	0.92%	
	50%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.92%	1.15%	
	60%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.41%	0.69%	1.10%	1.38%	
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.28%	1.60%	
	80%	0.02%	0.04%	0.06%	0.07%	0.09%	0.18%	0.37%	0.55%	0.92%	1.47%	1.83%	
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.21%	0.41%	0.62%	1.03%	1.65%	2.06%	
	100%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.69%	1.15%	1.83%	2.29%	

Table 3.102 Mean, LCI and UCI **year-round** displacement matrices for **Manx shearwater** apportioned to **Rum SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	2	3	4	5	10	21	31	52	84	104
	20%	2	4	6	8	10	21	42	63	104	167	209
	30%	3	6	9	13	16	31	63	94	157	251	313
	40%	4	8	13	17	21	42	84	125	209	334	418
	50%	5	10	16	21	26	52	104	157	261	418	522
	60%	6	13	19	25	31	63	125	188	313	502	627
	70%	7	15	22	29	37	73	146	219	366	585	731
	80%	8	17	25	33	42	84	167	251	418	669	836
	90%	9	19	28	38	47	94	188	282	470	752	940
	100%	10	21	31	42	52	104	209	313	522	836	1045

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	1	1	3	5	8	13	21	26
	20%	1	1	2	2	3	5	11	16	26	42	53
	30%	1	2	2	3	4	8	16	24	40	64	79
	40%	1	2	3	4	5	11	21	32	53	85	106
	50%	1	3	4	5	7	13	26	40	66	106	132
	60%	2	3	5	6	8	16	32	48	79	127	159
	70%	2	4	6	7	9	19	37	56	93	148	185
	80%	2	4	6	8	11	21	42	64	106	169	212
	90%	2	5	7	10	12	24	48	71	119	191	238
	100%	3	5	8	11	13	26	53	79	132	212	265
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	2	4	7	9	11	22	45	67	112	179	224
	20%	4	9	13	18	22	45	89	134	224	358	447
	30%	7	13	20	27	34	67	134	201	335	536	671
	40%	9	18	27	36	45	89	179	268	447	715	894
	50%	11	22	34	45	56	112	224	335	559	894	1118
	60%	13	27	40	54	67	134	268	402	671	1073	1341
	70%	16	31	47	63	78	156	313	469	782	1252	1565
	80%	18	36	54	72	89	179	358	536	894	1430	1788
	90%	20	40	60	80	101	201	402	603	1006	1609	2012
	100%	22	45	67	89	112	224	447	671	1118	1788	2235

Table 3.103 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Rum SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.33%
	20%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.54%	0.67%
	30%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.80%	1.00%
	40%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.27%	0.40%	0.67%	1.07%	1.34%
	50%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.33%	0.50%	0.84%	1.34%	1.67%
	60%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.40%	0.60%	1.00%	1.61%	2.01%
	70%	0.02%	0.05%	0.07%	0.09%	0.12%	0.23%	0.47%	0.70%	1.17%	1.88%	2.34%
	80%	0.03%	0.05%	0.08%	0.11%	0.13%	0.27%	0.54%	0.80%	1.34%	2.14%	2.68%
	90%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.60%	0.90%	1.51%	2.41%	3.01%
	100%	0.03%	0.07%	0.10%	0.13%	0.17%	0.33%	0.67%	1.00%	1.67%	2.68%	3.35%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.08%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.14%	0.17%
	30%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.13%	0.21%	0.34%	0.42%
	60%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.59%
	80%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.20%	0.34%	0.54%	0.68%
	90%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.38%	0.61%	0.76%
	100%	0.01%	0.02%	0.03%	0.03%	0.04%	0.08%	0.17%	0.25%	0.42%	0.68%	0.85%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.36%	0.57%	0.72%
	20%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.29%	0.43%	0.72%	1.15%	1.43%
	30%	0.02%	0.04%	0.06%	0.09%	0.11%	0.21%	0.43%	0.64%	1.07%	1.72%	2.15%
	40%	0.03%	0.06%	0.09%	0.11%	0.14%	0.29%	0.57%	0.86%	1.43%	2.29%	2.87%
	50%	0.04%	0.07%	0.11%	0.14%	0.18%	0.36%	0.72%	1.07%	1.79%	2.87%	3.58%
	60%	0.04%	0.09%	0.13%	0.17%	0.21%	0.43%	0.86%	1.29%	2.15%	3.44%	4.30%
	70%	0.05%	0.10%	0.15%	0.20%	0.25%	0.50%	1.00%	1.50%	2.51%	4.01%	5.01%
	80%	0.06%	0.11%	0.17%	0.23%	0.29%	0.57%	1.15%	1.72%	2.87%	4.58%	5.73%
	90%	0.06%	0.13%	0.19%	0.26%	0.32%	0.64%	1.29%	1.93%	3.22%	5.16%	6.45%
	100%	0.07%	0.14%	0.21%	0.29%	0.36%	0.72%	1.43%	2.15%	3.58%	5.73%	7.16%

Table 3.104 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **St Kilda SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	1	2	3
	40%	0	0	0	0	0	0	1	1	2	3	4
	50%	0	0	0	0	0	0	1	1	2	4	5
	60%	0	0	0	0	0	1	1	2	3	5	6
	70%	0	0	0	0	0	1	1	2	3	5	7
	80%	0	0	0	0	0	1	2	2	4	6	8
	90%	0	0	0	0	0	1	2	3	4	7	8
	100%	0	0	0	0	0	1	2	3	5	8	9

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	2
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	2	4	6	8
	50%	0	0	0	0	1	1	2	3	5	8	10
	60%	0	0	0	0	1	1	2	4	6	10	12
	70%	0	0	0	1	1	1	3	4	7	11	14
	80%	0	0	0	1	1	2	3	5	8	13	16
	90%	0	0	1	1	1	2	4	5	9	14	18
	100%	0	0	1	1	1	2	4	6	10	16	20

Table 3.105 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.30%	0.38%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.36%	0.45%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.26%	0.42%	0.53%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.60%
	90%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.20%	0.34%	0.54%	0.68%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.38%	0.60%	0.75%



LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	80%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	90%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	100%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	20%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.26%	0.32%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.14%	0.24%	0.38%	0.48%
	40%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
	50%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.64%	0.80%
	60%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.19%	0.29%	0.48%	0.77%	0.96%
	70%	0.01%	0.02%	0.03%	0.04%	0.06%	0.11%	0.22%	0.34%	0.56%	0.90%	1.12%
	80%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.38%	0.64%	1.03%	1.28%
	90%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.29%	0.43%	0.72%	1.15%	1.44%
	100%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.28%	1.60%

Table 3.106 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **St Kilda SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	2
	20%	0	0	0	0	0	0	1	1	2	3	3
	30%	0	0	0	0	0	0	1	1	2	4	5
	40%	0	0	0	0	0	1	1	2	3	5	6
	50%	0	0	0	0	0	1	2	2	4	6	8
	60%	0	0	0	0	0	1	2	3	5	8	10
	70%	0	0	0	0	1	1	2	3	6	9	11
	80%	0	0	0	1	1	1	3	4	6	10	13
	90%	0	0	0	1	1	1	3	4	7	12	14
	100%	0	0	0	1	1	2	3	5	8	13	16

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	2
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	2	3	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	0	1	1	2	4	5
	70%	0	0	0	0	0	1	1	2	3	4	6
	80%	0	0	0	0	0	1	1	2	3	5	6
	90%	0	0	0	0	0	1	1	2	4	6	7
	100%	0	0	0	0	0	1	2	2	4	6	8
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	1	2	3
	20%	0	0	0	0	0	1	1	2	3	4	5
	30%	0	0	0	0	0	1	2	2	4	6	8
	40%	0	0	0	0	1	1	2	3	5	9	11
	50%	0	0	0	1	1	1	3	4	7	11	14
	60%	0	0	0	1	1	2	3	5	8	13	16
	70%	0	0	1	1	1	2	4	6	9	15	19
	80%	0	0	1	1	1	2	4	6	11	17	22
	90%	0	0	1	1	1	2	5	7	12	19	24
	100%	0	1	1	1	1	3	5	8	14	22	27

Table 3.107 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.52%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.64%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.39%	0.62%	0.77%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.83%	1.03%
	90%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%
	100%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.29%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.31%	0.38%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.22%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.43%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.65%
	40%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.69%	0.87%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.87%	1.08%
	60%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.65%	1.04%	1.30%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.45%	0.76%	1.21%	1.51%
	80%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.38%	1.73%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.97%	1.56%	1.95%
	100%	0.02%	0.04%	0.06%	0.09%	0.11%	0.22%	0.43%	0.65%	1.08%	1.73%	2.16%

Table 3.108 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **St Kilda SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	1	2	3
	40%	0	0	0	0	0	0	1	1	2	3	4
	50%	0	0	0	0	0	0	1	1	2	4	5
	60%	0	0	0	0	0	1	1	2	3	5	6
	70%	0	0	0	0	0	1	1	2	3	6	7
	80%	0	0	0	0	0	1	2	2	4	6	8
	90%	0	0	0	0	0	1	2	3	4	7	9
	100%	0	0	0	0	0	1	2	3	5	8	10

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	1	2	3
	20%	0	0	0	0	0	1	1	2	3	5	6
	30%	0	0	0	0	0	1	2	3	4	7	9
	40%	0	0	0	0	1	1	2	3	6	9	11
	50%	0	0	0	1	1	1	3	4	7	11	14
	60%	0	0	1	1	1	2	3	5	9	14	17
	70%	0	0	1	1	1	2	4	6	10	16	20
	80%	0	0	1	1	1	2	5	7	11	18	23
	90%	0	1	1	1	1	3	5	8	13	21	26
	100%	0	1	1	1	1	3	6	9	14	23	29

Table 3.109 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.31%	0.39%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.44%	0.55%
	80%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.31%	0.50%	0.63%
	90%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.57%	0.71%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.79%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%	
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%	
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.34%	0.55%	0.69%	
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.28%	0.46%	0.73%	0.92%	
	50%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.92%	1.15%	
	60%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.41%	0.69%	1.10%	1.38%	
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.28%	1.60%	
	80%	0.02%	0.04%	0.06%	0.07%	0.09%	0.18%	0.37%	0.55%	0.92%	1.47%	1.83%	
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.21%	0.41%	0.62%	1.03%	1.65%	2.06%	
	100%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.69%	1.15%	1.83%	2.29%	

Table 3.110 Mean, LCI and UCI **year-round** displacement matrices for **Manx shearwater** apportioned to **St Kilda SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	0	1	1	2	4	6	7
	30%	0	0	0	0	1	1	2	3	5	8	11
	40%	0	0	0	1	1	1	3	4	7	11	14
	50%	0	0	1	1	1	2	4	5	9	14	18
	60%	0	0	1	1	1	2	4	6	11	17	21
	70%	0	0	1	1	1	2	5	7	12	20	25
	80%	0	1	1	1	1	3	6	8	14	23	28
	90%	0	1	1	1	2	3	6	10	16	25	32
	100%	0	1	1	1	2	4	7	11	18	28	35

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	1	2	3
	40%	0	0	0	0	0	0	1	1	2	3	4
	50%	0	0	0	0	0	0	1	1	2	4	5
	60%	0	0	0	0	0	1	1	2	3	5	6
	70%	0	0	0	0	0	1	1	2	3	5	7
	80%	0	0	0	0	0	1	2	2	4	6	8
	90%	0	0	0	0	0	1	2	3	4	7	9
	100%	0	0	0	0	0	1	2	3	5	8	10
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	2	4	6	8
	20%	0	0	0	1	1	2	3	5	8	12	15
	30%	0	0	1	1	1	2	5	7	11	18	23
	40%	0	1	1	1	2	3	6	9	15	24	30
	50%	0	1	1	2	2	4	8	11	19	30	38
	60%	0	1	1	2	2	5	9	14	23	36	45
	70%	1	1	2	2	3	5	11	16	26	42	53
	80%	1	1	2	2	3	6	12	18	30	48	61
	90%	1	1	2	3	3	7	14	20	34	54	68
	100%	1	2	2	3	4	8	15	23	38	61	76

Table 3.111 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.23%	0.28%
	20%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.45%	0.57%
	30%	0.01%	0.02%	0.03%	0.03%	0.04%	0.08%	0.17%	0.25%	0.42%	0.68%	0.85%
	40%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.91%	1.13%
	50%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.42%	0.71%	1.13%	1.42%
	60%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.34%	0.51%	0.85%	1.36%	1.70%
	70%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.40%	0.59%	0.99%	1.58%	1.98%
	80%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.45%	0.68%	1.13%	1.81%	2.26%
	90%	0.03%	0.05%	0.08%	0.10%	0.13%	0.25%	0.51%	0.76%	1.27%	2.04%	2.55%
	100%	0.03%	0.06%	0.08%	0.11%	0.14%	0.28%	0.57%	0.85%	1.42%	2.26%	2.83%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.30%	0.38%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.53%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.49%	0.61%
	90%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.34%	0.55%	0.69%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.38%	0.61%	0.76%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.61%
	20%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.61%	0.97%	1.21%
	30%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.55%	0.91%	1.45%	1.82%
	40%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.48%	0.73%	1.21%	1.94%	2.42%
	50%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.61%	0.91%	1.51%	2.42%	3.03%
	60%	0.04%	0.07%	0.11%	0.15%	0.18%	0.36%	0.73%	1.09%	1.82%	2.91%	3.64%
	70%	0.04%	0.08%	0.13%	0.17%	0.21%	0.42%	0.85%	1.27%	2.12%	3.39%	4.24%
	80%	0.05%	0.10%	0.15%	0.19%	0.24%	0.48%	0.97%	1.45%	2.42%	3.88%	4.85%
	90%	0.05%	0.11%	0.16%	0.22%	0.27%	0.55%	1.09%	1.64%	2.73%	4.36%	5.45%
	100%	0.06%	0.12%	0.18%	0.24%	0.30%	0.61%	1.21%	1.82%	3.03%	4.85%	6.06%

Table 3.112 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Cruagh Island SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	1	1	1	2	2
	50%	0	0	0	0	0	0	0	1	1	1	2	2
	60%	0	0	0	0	0	0	1	1	1	1	2	3
	70%	0	0	0	0	0	0	1	1	2	2	3	3
	80%	0	0	0	0	0	0	1	1	2	2	3	4
	90%	0	0	0	0	0	0	1	1	2	2	3	4
	100%	0	0	0	0	0	0	1	1	2	2	4	5

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	2	3
	40%	0	0	0	0	0	0	1	1	2	3	4
	50%	0	0	0	0	0	1	1	2	3	4	5
	60%	0	0	0	0	0	1	1	2	3	5	6
	70%	0	0	0	0	0	1	1	2	4	6	7
	80%	0	0	0	0	0	1	2	2	4	6	8
	90%	0	0	0	0	0	1	2	3	5	7	9
	100%	0	0	0	0	1	1	2	3	5	8	10

Table 3.113 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Cruagh Island SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.06%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.17%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.22%	0.28%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.26%	0.33%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.44%	0.55%



LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.06%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.07%	0.08%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.12%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.28%	0.35%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.47%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.29%	0.47%	0.59%
	60%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.56%	0.70%
	70%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.25%	0.41%	0.66%	0.82%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.19%	0.28%	0.47%	0.75%	0.94%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.84%	1.05%
	100%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.23%	0.35%	0.59%	0.94%	1.17%

Table 3.114 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Cruagh Island SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	3
	40%	0	0	0	0	0	0	1	1	2	4	4
	50%	0	0	0	0	0	1	1	2	3	4	6
	60%	0	0	0	0	0	1	1	2	3	5	7
	70%	0	0	0	0	0	1	2	2	4	6	8
	80%	0	0	0	0	0	1	2	3	4	7	9
	90%	0	0	0	0	0	1	2	3	5	8	10
	100%	0	0	0	0	1	1	2	3	6	9	11

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	0	1	1	2
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	1	1	1	2	3
	60%	0	0	0	0	0	0	1	1	2	3	3
	70%	0	0	0	0	0	0	1	1	2	3	4
	80%	0	0	0	0	0	0	1	1	2	3	4
	90%	0	0	0	0	0	0	1	1	2	4	5
	100%	0	0	0	0	0	1	1	2	3	4	5
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	1	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	4	6
	40%	0	0	0	0	0	1	1	2	4	6	7
	50%	0	0	0	0	0	1	2	3	5	7	9
	60%	0	0	0	0	1	1	2	3	6	9	11
	70%	0	0	0	1	1	1	3	4	6	10	13
	80%	0	0	0	1	1	1	3	4	7	12	15
	90%	0	0	0	1	1	2	3	5	8	13	17
	100%	0	0	1	1	1	2	4	6	9	15	18

Table 3.115 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Cruagh Island SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.52%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.64%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.39%	0.62%	0.77%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.83%	1.03%
	90%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%
	100%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.29%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.31%	0.38%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.22%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.43%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.65%
	40%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.69%	0.87%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.87%	1.08%
	60%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.65%	1.04%	1.30%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.45%	0.76%	1.21%	1.51%
	80%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.38%	1.73%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.97%	1.56%	1.95%
	100%	0.02%	0.04%	0.06%	0.09%	0.11%	0.22%	0.43%	0.65%	1.08%	1.73%	2.16%

Table 3.116 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Cruagh Island SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	1	2	3
	50%	0	0	0	0	0	0	1	1	2	3	3
	60%	0	0	0	0	0	0	1	1	2	3	4
	70%	0	0	0	0	0	0	1	1	2	4	5
	80%	0	0	0	0	0	1	1	2	3	4	5
	90%	0	0	0	0	0	1	1	2	3	5	6
	100%	0	0	0	0	0	1	1	2	3	5	7

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	2	4	6	8
	50%	0	0	0	0	0	1	2	3	5	8	10
	60%	0	0	0	0	1	1	2	4	6	9	12
	70%	0	0	0	1	1	1	3	4	7	11	14
	80%	0	0	0	1	1	2	3	5	8	13	16
	90%	0	0	1	1	1	2	4	5	9	14	18
	100%	0	0	1	1	1	2	4	6	10	16	20

Table 3.117 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Cruagh Island SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.31%	0.39%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.44%	0.55%
	80%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.31%	0.50%	0.63%
	90%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.57%	0.71%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.79%



LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.34%	0.55%	0.69%
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.28%	0.46%	0.73%	0.92%
	50%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.92%	1.15%
	60%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.41%	0.69%	1.10%	1.38%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.28%	1.60%
	80%	0.02%	0.04%	0.06%	0.07%	0.09%	0.18%	0.37%	0.55%	0.92%	1.47%	1.83%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.21%	0.41%	0.62%	1.03%	1.65%	2.06%
	100%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.69%	1.15%	1.83%	2.29%

Table 3.118 Mean, LCI and UCI **year-round** displacement matrices for **Manx shearwater** apportioned to **Cruagh Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	4	4
	30%	0	0	0	0	0	1	1	2	3	5	7
	40%	0	0	0	0	0	1	2	3	4	7	9
	50%	0	0	0	0	1	1	2	3	6	9	11
	60%	0	0	0	1	1	1	3	4	7	11	13
	70%	0	0	0	1	1	2	3	5	8	13	16
	80%	0	0	1	1	1	2	4	5	9	14	18
	90%	0	0	1	1	1	2	4	6	10	16	20
	100%	0	0	1	1	1	2	4	7	11	18	22

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	1	2
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	1	1	2	2	3
	60%	0	0	0	0	0	0	1	1	2	3	4
	70%	0	0	0	0	0	0	1	1	2	3	4
	80%	0	0	0	0	0	0	1	1	2	4	5
	90%	0	0	0	0	0	1	1	2	3	4	6
	100%	0	0	0	0	0	1	1	2	3	5	6
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	4	5
	20%	0	0	0	0	0	1	2	3	5	8	10
	30%	0	0	0	1	1	1	3	4	7	12	14
	40%	0	0	1	1	1	2	4	6	10	15	19
	50%	0	0	1	1	1	2	5	7	12	19	24
	60%	0	1	1	1	1	3	6	9	14	23	29
	70%	0	1	1	1	2	3	7	10	17	27	34
	80%	0	1	1	2	2	4	8	12	19	31	38
	90%	0	1	1	2	2	4	9	13	22	35	43
	100%	0	1	1	2	2	5	10	14	24	38	48

Table 3.119 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Cruagh Island SPA** due to displacement from Morecambe OWF during **operation** in. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	20%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.26%	0.42%	0.53%
	30%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.79%
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.84%	1.05%
	50%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.26%	0.39%	0.66%	1.05%	1.31%
	60%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.47%	0.79%	1.26%	1.58%
	70%	0.02%	0.04%	0.06%	0.07%	0.09%	0.18%	0.37%	0.55%	0.92%	1.47%	1.84%
	80%	0.02%	0.04%	0.06%	0.08%	0.11%	0.21%	0.42%	0.63%	1.05%	1.68%	2.10%
	90%	0.02%	0.05%	0.07%	0.09%	0.12%	0.24%	0.47%	0.71%	1.18%	1.89%	2.36%
	100%	0.03%	0.05%	0.08%	0.11%	0.13%	0.26%	0.53%	0.79%	1.31%	2.10%	2.63%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.17%	0.22%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.23%	0.29%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.47%	0.58%
	90%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.52%	0.66%
	100%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.36%	0.58%	0.73%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.45%	0.56%
	20%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.56%	0.90%	1.13%
	30%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.34%	0.51%	0.84%	1.35%	1.69%
	40%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.45%	0.68%	1.13%	1.80%	2.25%
	50%	0.03%	0.06%	0.08%	0.11%	0.14%	0.28%	0.56%	0.84%	1.41%	2.25%	2.81%
	60%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.68%	1.01%	1.69%	2.70%	3.38%
	70%	0.04%	0.08%	0.12%	0.16%	0.20%	0.39%	0.79%	1.18%	1.97%	3.15%	3.94%
	80%	0.05%	0.09%	0.14%	0.18%	0.23%	0.45%	0.90%	1.35%	2.25%	3.60%	4.50%
	90%	0.05%	0.10%	0.15%	0.20%	0.25%	0.51%	1.01%	1.52%	2.53%	4.05%	5.06%
	100%	0.06%	0.11%	0.17%	0.23%	0.28%	0.56%	1.13%	1.69%	2.81%	4.50%	5.63%

Table 3.120 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Blasket Islands SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	1	2	3
	20%	0	0	0	0	0	1	1	2	3	5	6
	30%	0	0	0	0	0	1	2	3	4	7	8
	40%	0	0	0	0	1	1	2	3	6	9	11
	50%	0	0	0	1	1	1	3	4	7	11	14
	60%	0	0	1	1	1	2	3	5	8	14	17
	70%	0	0	1	1	1	2	4	6	10	16	20
	80%	0	0	1	1	1	2	5	7	11	18	23
	90%	0	1	1	1	1	3	5	8	13	20	25
	100%	0	1	1	1	1	3	6	8	14	23	28

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	1	1	1	2	3
	70%	0	0	0	0	0	0	1	1	2	3	3
	80%	0	0	0	0	0	0	1	1	2	3	4
	90%	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	1	1	2	4	5
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	5	6
	20%	0	0	0	0	1	1	2	4	6	10	12
	30%	0	0	1	1	1	2	4	5	9	14	18
	40%	0	0	1	1	1	2	5	7	12	19	24
	50%	0	1	1	1	2	3	6	9	15	24	30
	60%	0	1	1	1	2	4	7	11	18	29	36
	70%	0	1	1	2	2	4	8	13	21	34	42
	80%	0	1	1	2	2	5	10	14	24	38	48
	90%	1	1	2	2	3	5	11	16	27	43	54
	100%	1	1	2	2	3	6	12	18	30	48	60

Table 3.121 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Blasket Islands SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.06%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.17%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.22%	0.28%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.33%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.44%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.44%	0.56%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.06%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.07%	0.08%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.12%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.28%	0.35%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.47%	0.59%
	60%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.57%	0.71%
	70%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.17%	0.25%	0.41%	0.66%	0.83%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.19%	0.28%	0.47%	0.76%	0.95%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.85%	1.06%
	100%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.35%	0.59%	0.95%	1.18%

Table 3.122 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Blasket Islands SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	5	7
	20%	0	0	0	1	1	1	3	4	7	10	13
	30%	0	0	1	1	1	2	4	6	10	16	20
	40%	0	1	1	1	1	3	5	8	13	21	26
	50%	0	1	1	1	2	3	7	10	16	26	33
	60%	0	1	1	2	2	4	8	12	20	31	39
	70%	0	1	1	2	2	5	9	14	23	37	46
	80%	1	1	2	2	3	5	10	16	26	42	52
	90%	1	1	2	2	3	6	12	18	29	47	59
	100%	1	1	2	3	3	7	13	20	33	52	65

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	3
	20%	0	0	0	0	0	1	1	2	3	5	6
	30%	0	0	0	0	0	1	2	3	5	8	10
	40%	0	0	0	1	1	1	3	4	6	10	13
	50%	0	0	0	1	1	2	3	5	8	13	16
	60%	0	0	1	1	1	2	4	6	10	16	19
	70%	0	0	1	1	1	2	5	7	11	18	23
	80%	0	1	1	1	1	3	5	8	13	21	26
	90%	0	1	1	1	1	3	6	9	15	23	29
	100%	0	1	1	1	2	3	6	10	16	26	32
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	1	1	2	3	5	9	11
	20%	0	0	1	1	1	2	4	7	11	18	22
	30%	0	1	1	1	2	3	7	10	16	26	33
	40%	0	1	1	2	2	4	9	13	22	35	44
	50%	1	1	2	2	3	5	11	16	27	44	55
	60%	1	1	2	3	3	7	13	20	33	53	66
	70%	1	2	2	3	4	8	15	23	38	62	77
	80%	1	2	3	4	4	9	18	26	44	70	88
	90%	1	2	3	4	5	10	20	30	49	79	99
	100%	1	2	3	4	5	11	22	33	55	88	110

Table 3.123 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Blasket Islands SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.52%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.64%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.39%	0.62%	0.77%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.83%	1.03%
	90%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%
	100%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.29%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.31%	0.38%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.22%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.43%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.65%
	40%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.69%	0.87%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.87%	1.08%
	60%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.65%	1.04%	1.30%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.45%	0.76%	1.21%	1.51%
	80%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.38%	1.73%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.97%	1.56%	1.95%
	100%	0.02%	0.04%	0.06%	0.09%	0.11%	0.22%	0.43%	0.65%	1.08%	1.73%	2.16%

Table 3.124 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Blasket Islands SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	0	1	2	2	4	6	8
	30%	0	0	0	0	1	1	2	4	6	10	12
	40%	0	0	0	1	1	2	3	5	8	13	16
	50%	0	0	1	1	1	2	4	6	10	16	20
	60%	0	0	1	1	1	2	5	7	12	19	24
	70%	0	1	1	1	1	3	6	8	14	22	28
	80%	0	1	1	1	2	3	6	10	16	26	32
	90%	0	1	1	1	2	4	7	11	18	29	36
	100%	0	1	1	2	2	4	8	12	20	32	40

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	1	1	2	3	6	9	12
	20%	0	0	1	1	1	2	5	7	12	19	23
	30%	0	1	1	1	2	3	7	10	17	28	35
	40%	0	1	1	2	2	5	9	14	23	37	47
	50%	1	1	2	2	3	6	12	17	29	47	58
	60%	1	1	2	3	3	7	14	21	35	56	70
	70%	1	2	2	3	4	8	16	24	41	65	81
	80%	1	2	3	4	5	9	19	28	47	75	93
	90%	1	2	3	4	5	10	21	31	52	84	105
	100%	1	2	3	5	6	12	23	35	58	93	116

Table 3.125 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Blasket Islands SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.31%	0.39%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.44%	0.55%
	80%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.31%	0.50%	0.63%
	90%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.57%	0.71%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.79%



LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.34%	0.55%	0.69%
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.28%	0.46%	0.73%	0.92%
	50%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.92%	1.15%
	60%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.41%	0.69%	1.10%	1.38%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.28%	1.60%
	80%	0.02%	0.04%	0.06%	0.07%	0.09%	0.18%	0.37%	0.55%	0.92%	1.47%	1.83%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.21%	0.41%	0.62%	1.03%	1.65%	2.06%
	100%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.69%	1.15%	1.83%	2.29%

Table 3.126 Mean, LCI and UCI **year-round** displacement matrices for **Manx shearwater** apportioned to **Blasket Islands SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	1	3	4	7	11	13
	20%	0	1	1	1	1	3	5	8	13	21	27
	30%	0	1	1	2	2	4	8	12	20	32	40
	40%	1	1	2	2	3	5	11	16	27	43	53
	50%	1	1	2	3	3	7	13	20	33	53	67
	60%	1	2	2	3	4	8	16	24	40	64	80
	70%	1	2	3	4	5	9	19	28	47	75	94
	80%	1	2	3	4	5	11	21	32	53	86	107
	90%	1	2	4	5	6	12	24	36	60	96	120
	100%	1	3	4	5	7	13	27	40	67	107	134

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	0	1	1	2	4	6	7
	30%	0	0	0	0	1	1	2	3	6	9	11
	40%	0	0	0	1	1	1	3	4	7	12	15
	50%	0	0	1	1	1	2	4	6	9	15	19
	60%	0	0	1	1	1	2	4	7	11	18	22
	70%	0	1	1	1	1	3	5	8	13	21	26
	80%	0	1	1	1	1	3	6	9	15	24	30
	90%	0	1	1	1	2	3	7	10	17	27	33
	100%	0	1	1	1	2	4	7	11	19	30	37
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	1	1	3	6	9	14	23	29
	20%	1	1	2	2	3	6	11	17	29	46	57
	30%	1	2	3	3	4	9	17	26	43	69	86
	40%	1	2	3	5	6	11	23	34	57	92	115
	50%	1	3	4	6	7	14	29	43	72	115	143
	60%	2	3	5	7	9	17	34	52	86	137	172
	70%	2	4	6	8	10	20	40	60	100	160	200
	80%	2	5	7	9	11	23	46	69	115	183	229
	90%	3	5	8	10	13	26	52	77	129	206	258
	100%	3	6	9	11	14	29	57	86	143	229	286

Table 3.127 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Basket Islands SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	20%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.26%	0.42%	0.53%
	30%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.79%
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.84%	1.05%
	50%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.26%	0.39%	0.66%	1.05%	1.32%
	60%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.47%	0.79%	1.26%	1.58%
	70%	0.02%	0.04%	0.06%	0.07%	0.09%	0.18%	0.37%	0.55%	0.92%	1.47%	1.84%
	80%	0.02%	0.04%	0.06%	0.08%	0.11%	0.21%	0.42%	0.63%	1.05%	1.68%	2.11%
	90%	0.02%	0.05%	0.07%	0.09%	0.12%	0.24%	0.47%	0.71%	1.18%	1.90%	2.37%
	100%	0.03%	0.05%	0.08%	0.11%	0.13%	0.26%	0.53%	0.79%	1.32%	2.11%	2.63%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.23%	0.29%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.51%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.29%	0.47%	0.58%
	90%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.66%
	100%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.36%	0.58%	0.73%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.45%	0.56%
	20%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.56%	0.90%	1.13%
	30%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.34%	0.51%	0.85%	1.35%	1.69%
	40%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.45%	0.68%	1.13%	1.80%	2.26%
	50%	0.03%	0.06%	0.08%	0.11%	0.14%	0.28%	0.56%	0.85%	1.41%	2.26%	2.82%
	60%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.68%	1.01%	1.69%	2.71%	3.38%
	70%	0.04%	0.08%	0.12%	0.16%	0.20%	0.39%	0.79%	1.18%	1.97%	3.16%	3.95%
	80%	0.05%	0.09%	0.14%	0.18%	0.23%	0.45%	0.90%	1.35%	2.26%	3.61%	4.51%
	90%	0.05%	0.10%	0.15%	0.20%	0.25%	0.51%	1.01%	1.52%	2.54%	4.06%	5.07%
	100%	0.06%	0.11%	0.17%	0.23%	0.28%	0.56%	1.13%	1.69%	2.82%	4.51%	5.64%

Table 3.128 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Deenish Island and Scariff Island SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1	
	30%	0	0	0	0	0	0	0	0	1	1	1	
	40%	0	0	0	0	0	0	0	0	1	1	2	
	50%	0	0	0	0	0	0	0	1	1	2	2	
	60%	0	0	0	0	0	0	0	1	1	2	2	
	70%	0	0	0	0	0	0	1	1	1	2	3	
	80%	0	0	0	0	0	0	1	1	2	2	3	
	90%	0	0	0	0	0	0	1	1	2	3	3	
	100%	0	0	0	0	0	0	1	1	2	3	4	

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	1
	90%	0	0	0	0	0	0	0	0	0	0	1
	100%	0	0	0	0	0	0	0	0	0	1	1
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	2
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	2	3	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	0	1	1	2	4	5
	70%	0	0	0	0	0	1	1	2	3	4	6
	80%	0	0	0	0	0	1	1	2	3	5	6
	90%	0	0	0	0	0	1	1	2	4	6	7
	100%	0	0	0	0	0	1	2	2	4	6	8

Table 3.129 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Deenish Island and Scariff Island SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.30%	0.38%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.45%	0.56%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.31%	0.50%	0.63%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.08%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.09%
	100%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.27%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.53%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.67%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.64%	0.80%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.19%	0.28%	0.47%	0.75%	0.93%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.85%	1.07%
	90%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.60%	0.96%	1.20%
	100%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.27%	0.40%	0.67%	1.07%	1.33%

Table 3.130 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Deenish Island and Scariff Island SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	2
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	2	2	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	0	1	1	2	4	5
	70%	0	0	0	0	0	1	1	2	3	4	5
	80%	0	0	0	0	0	1	1	2	3	5	6
	90%	0	0	0	0	0	1	1	2	3	6	7
	100%	0	0	0	0	0	1	2	2	4	6	8

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	1	1	1	2	3
	80%	0	0	0	0	0	0	1	1	2	2	3
	90%	0	0	0	0	0	0	1	1	2	3	3
	100%	0	0	0	0	0	0	1	1	2	3	4
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	1	1	1	2	3
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	1	1	2	3	4	5
	50%	0	0	0	0	0	1	1	2	3	5	7
	60%	0	0	0	0	0	1	2	2	4	6	8
	70%	0	0	0	0	0	1	2	3	5	7	9
	80%	0	0	0	0	1	1	2	3	5	8	10
	90%	0	0	0	0	1	1	2	4	6	9	12
	100%	0	0	0	1	1	1	3	4	7	10	13

Table 3.131 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Deenish Island and Scariff Island SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.52%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.64%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.39%	0.62%	0.77%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.83%	1.03%
	90%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%
	100%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.29%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.31%	0.38%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.22%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.43%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.65%
	40%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.69%	0.87%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.87%	1.08%
	60%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.65%	1.04%	1.30%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.45%	0.76%	1.21%	1.51%
	80%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.38%	1.73%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.97%	1.56%	1.95%
	100%	0.02%	0.04%	0.06%	0.09%	0.11%	0.22%	0.43%	0.65%	1.08%	1.73%	2.16%

Table 3.132 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Deenish Island and Scariff Island SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	0	1	1	1	2	3
	70%	0	0	0	0	0	0	0	1	1	2	3	3
	80%	0	0	0	0	0	0	0	1	1	2	3	4
	90%	0	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	0	1	1	2	4	5

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	1	1	1	2	3
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	1	1	2	3	4	6
	50%	0	0	0	0	0	1	1	2	3	6	7
	60%	0	0	0	0	0	1	2	2	4	7	8
	70%	0	0	0	0	0	1	2	3	5	8	10
	80%	0	0	0	0	1	1	2	3	6	9	11
	90%	0	0	0	0	1	1	2	4	6	10	12
	100%	0	0	0	1	1	1	3	4	7	11	14

Table 3.133 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Deenish Island and Scariff Island SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.31%	0.39%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.44%	0.55%
	80%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.31%	0.50%	0.63%
	90%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.57%	0.71%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.79%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%	
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%	
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.34%	0.55%	0.69%	
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.28%	0.46%	0.73%	0.92%	
	50%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.92%	1.15%	
	60%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.41%	0.69%	1.10%	1.38%	
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.28%	1.60%	
	80%	0.02%	0.04%	0.06%	0.07%	0.09%	0.18%	0.37%	0.55%	0.92%	1.47%	1.83%	
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.21%	0.41%	0.62%	1.03%	1.65%	2.06%	
	100%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.69%	1.15%	1.83%	2.29%	

Table 3.134 Mean, LCI and UCI **year-round** displacement matrices for **Manx shearwater** apportioned to **Deenish Island and Scariff Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	2
	20%	0	0	0	0	0	0	1	1	2	3	3
	30%	0	0	0	0	0	0	1	1	2	4	5
	40%	0	0	0	0	0	1	1	2	3	5	6
	50%	0	0	0	0	0	1	2	2	4	6	8
	60%	0	0	0	0	0	1	2	3	5	8	10
	70%	0	0	0	0	1	1	2	3	6	9	11
	80%	0	0	0	1	1	1	3	4	6	10	13
	90%	0	0	0	1	1	1	3	4	7	12	15
	100%	0	0	0	1	1	2	3	5	8	13	16

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	1	1	1	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	1	1	1	2	3
	70%	0	0	0	0	0	0	1	1	2	2	3
	80%	0	0	0	0	0	0	1	1	2	3	4
	90%	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	1	1	2	4	4
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	3
	20%	0	0	0	0	0	1	1	2	3	6	7
	30%	0	0	0	0	1	1	2	3	5	8	10
	40%	0	0	0	1	1	1	3	4	7	11	14
	50%	0	0	1	1	1	2	3	5	9	14	17
	60%	0	0	1	1	1	2	4	6	10	17	21
	70%	0	0	1	1	1	2	5	7	12	19	24
	80%	0	1	1	1	1	3	6	8	14	22	28
	90%	0	1	1	1	2	3	6	9	16	25	31
	100%	0	1	1	1	2	3	7	10	17	28	35

Table 3.135 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Deenish Island and Scariff Island SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%
	20%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.54%
	30%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.41%	0.65%	0.81%
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.86%	1.08%
	50%	0.01%	0.03%	0.04%	0.05%	0.07%	0.14%	0.27%	0.41%	0.68%	1.08%	1.35%
	60%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.49%	0.81%	1.30%	1.62%
	70%	0.02%	0.04%	0.06%	0.08%	0.09%	0.19%	0.38%	0.57%	0.95%	1.51%	1.89%
	80%	0.02%	0.04%	0.06%	0.09%	0.11%	0.22%	0.43%	0.65%	1.08%	1.73%	2.16%
	90%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.49%	0.73%	1.22%	1.95%	2.43%
	100%	0.03%	0.05%	0.08%	0.11%	0.14%	0.27%	0.54%	0.81%	1.35%	2.16%	2.70%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.19%	0.30%	0.37%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.44%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.16%	0.26%	0.42%	0.52%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.47%	0.59%
	90%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.67%
	100%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.59%	0.74%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.46%	0.58%
	20%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%
	30%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.39%	1.74%
	40%	0.02%	0.05%	0.07%	0.09%	0.12%	0.23%	0.46%	0.69%	1.16%	1.85%	2.32%
	50%	0.03%	0.06%	0.09%	0.12%	0.14%	0.29%	0.58%	0.87%	1.45%	2.32%	2.89%
	60%	0.03%	0.07%	0.10%	0.14%	0.17%	0.35%	0.69%	1.04%	1.74%	2.78%	3.47%
	70%	0.04%	0.08%	0.12%	0.16%	0.20%	0.41%	0.81%	1.22%	2.03%	3.24%	4.05%
	80%	0.05%	0.09%	0.14%	0.19%	0.23%	0.46%	0.93%	1.39%	2.32%	3.70%	4.63%
	90%	0.05%	0.10%	0.16%	0.21%	0.26%	0.52%	1.04%	1.56%	2.60%	4.17%	5.21%
	100%	0.06%	0.12%	0.17%	0.23%	0.29%	0.58%	1.16%	1.74%	2.89%	4.63%	5.79%

Table 3.136 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Puffin Island SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	2	3
	40%	0	0	0	0	0	0	1	1	2	3	4
	50%	0	0	0	0	0	1	1	2	3	4	5
	60%	0	0	0	0	0	1	1	2	3	5	6
	70%	0	0	0	0	0	1	1	2	4	6	7
	80%	0	0	0	0	0	1	2	2	4	7	8
	90%	0	0	0	0	0	1	2	3	5	7	9
	100%	0	0	0	0	1	1	2	3	5	8	10

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	2
	100%	0	0	0	0	0	0	0	1	1	1	2
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	4	4
	30%	0	0	0	0	0	1	1	2	3	5	7
	40%	0	0	0	0	0	1	2	3	4	7	9
	50%	0	0	0	0	1	1	2	3	6	9	11
	60%	0	0	0	1	1	1	3	4	7	11	13
	70%	0	0	0	1	1	2	3	5	8	12	15
	80%	0	0	1	1	1	2	4	5	9	14	18
	90%	0	0	1	1	1	2	4	6	10	16	20
	100%	0	0	1	1	1	2	4	7	11	18	22

Table 3.137 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Puffin Island SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.30%	0.38%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.45%	0.57%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.31%	0.50%	0.63%



LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.08%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.09%
	100%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.27%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.54%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.54%	0.67%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.64%	0.80%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.19%	0.28%	0.47%	0.75%	0.94%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.54%	0.86%	1.07%
	90%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.60%	0.96%	1.20%
	100%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.27%	0.40%	0.67%	1.07%	1.34%

Table 3.138 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Puffin Island SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	3	4	7	8
	50%	0	0	0	0	1	1	2	3	5	8	11
	60%	0	0	0	1	1	1	3	4	6	10	13
	70%	0	0	0	1	1	1	3	4	7	12	15
	80%	0	0	1	1	1	2	3	5	8	14	17
	90%	0	0	1	1	1	2	4	6	10	15	19
	100%	0	0	1	1	1	2	4	6	11	17	21

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	3
	40%	0	0	0	0	0	0	1	1	2	3	4
	50%	0	0	0	0	0	1	1	2	3	4	5
	60%	0	0	0	0	0	1	1	2	3	5	6
	70%	0	0	0	0	0	1	1	2	4	6	7
	80%	0	0	0	0	0	1	2	3	4	7	8
	90%	0	0	0	0	0	1	2	3	5	8	9
	100%	0	0	0	0	1	1	2	3	5	8	10
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	0	1	1	2	4	6	7
	30%	0	0	0	0	1	1	2	3	5	9	11
	40%	0	0	0	1	1	1	3	4	7	11	14
	50%	0	0	1	1	1	2	4	5	9	14	18
	60%	0	0	1	1	1	2	4	6	11	17	21
	70%	0	0	1	1	1	2	5	7	12	20	25
	80%	0	1	1	1	1	3	6	9	14	23	28
	90%	0	1	1	1	2	3	6	10	16	26	32
	100%	0	1	1	1	2	4	7	11	18	28	36

Table 3.139 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Puffin Island SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.52%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.64%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.39%	0.62%	0.77%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.83%	1.03%
	90%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%
	100%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.29%

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.31%	0.38%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.22%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.43%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.65%
	40%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.69%	0.87%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.87%	1.08%
	60%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.65%	1.04%	1.30%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.45%	0.76%	1.21%	1.51%
	80%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.38%	1.73%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.97%	1.56%	1.95%
	100%	0.02%	0.04%	0.06%	0.09%	0.11%	0.22%	0.43%	0.65%	1.08%	1.73%	2.16%

Table 3.140 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Puffin Island SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	3	4	7	8
	50%	0	0	0	0	1	1	2	3	5	8	11
	60%	0	0	0	1	1	1	3	4	6	10	13
	70%	0	0	0	1	1	1	3	4	7	12	15
	80%	0	0	1	1	1	2	3	5	8	14	17
	90%	0	0	1	1	1	2	4	6	10	15	19
	100%	0	0	1	1	1	2	4	6	11	17	21

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	3
	40%	0	0	0	0	0	0	1	1	2	3	4
	50%	0	0	0	0	0	1	1	2	3	4	5
	60%	0	0	0	0	0	1	1	2	3	5	6
	70%	0	0	0	0	0	1	1	2	4	6	7
	80%	0	0	0	0	0	1	2	3	4	7	8
	90%	0	0	0	0	0	1	2	3	5	8	9
	100%	0	0	0	0	1	1	2	3	5	8	10
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	0	1	1	2	4	6	7
	30%	0	0	0	0	1	1	2	3	5	9	11
	40%	0	0	0	1	1	1	3	4	7	11	14
	50%	0	0	1	1	1	2	4	5	9	14	18
	60%	0	0	1	1	1	2	4	6	11	17	21
	70%	0	0	1	1	1	2	5	7	12	20	25
	80%	0	1	1	1	1	3	6	9	14	23	28
	90%	0	1	1	1	2	3	6	10	16	26	32
	100%	0	1	1	1	2	4	7	11	18	28	36

Table 3.141 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Puffin Island SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.52%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.64%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.39%	0.62%	0.77%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.83%	1.03%
	90%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%
	100%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.29%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.31%	0.38%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.22%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.43%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.65%
	40%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.69%	0.87%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.87%	1.08%
	60%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.65%	1.04%	1.30%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.45%	0.76%	1.21%	1.51%
	80%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.38%	1.73%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.97%	1.56%	1.95%
	100%	0.02%	0.04%	0.06%	0.09%	0.11%	0.22%	0.43%	0.65%	1.08%	1.73%	2.16%

Table 3.142 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Puffin Island SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	1	1	1	2	3
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	1	1	2	3	4	5
	50%	0	0	0	0	0	1	1	2	3	5	6
	60%	0	0	0	0	0	1	2	2	4	6	8
	70%	0	0	0	0	0	1	2	3	5	7	9
	80%	0	0	0	0	1	1	2	3	5	8	10
	90%	0	0	0	0	1	1	2	3	6	9	12
	100%	0	0	0	1	1	1	3	4	6	10	13

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	0	1	2	2	4	6	8
	30%	0	0	0	0	1	1	2	3	6	9	11
	40%	0	0	0	1	1	2	3	5	8	12	15
	50%	0	0	1	1	1	2	4	6	9	15	19
	60%	0	0	1	1	1	2	5	7	11	18	23
	70%	0	1	1	1	1	3	5	8	13	21	26
	80%	0	1	1	1	2	3	6	9	15	24	30
	90%	0	1	1	1	2	3	7	10	17	27	34
	100%	0	1	1	2	2	4	8	11	19	30	38

Table 3.143 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Puffin Island SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.31%	0.39%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.44%	0.55%
	80%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.31%	0.50%	0.63%
	90%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.57%	0.71%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.79%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%	
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%	
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.34%	0.55%	0.69%	
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.28%	0.46%	0.73%	0.92%	
	50%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.92%	1.15%	
	60%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.41%	0.69%	1.10%	1.38%	
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.28%	1.60%	
	80%	0.02%	0.04%	0.06%	0.07%	0.09%	0.18%	0.37%	0.55%	0.92%	1.47%	1.83%	
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.21%	0.41%	0.62%	1.03%	1.65%	2.06%	
	100%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.69%	1.15%	1.83%	2.29%	

Table 3.144 Mean, LCI and UCI **year-round** displacement matrices for **Manx shearwater** apportioned to **Puffin Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	4	4
	20%	0	0	0	0	0	1	2	3	4	7	9
	30%	0	0	0	1	1	1	3	4	7	11	13
	40%	0	0	1	1	1	2	4	5	9	14	18
	50%	0	0	1	1	1	2	4	7	11	18	22
	60%	0	1	1	1	1	3	5	8	13	21	27
	70%	0	1	1	1	2	3	6	9	16	25	31
	80%	0	1	1	1	2	4	7	11	18	28	36
	90%	0	1	1	2	2	4	8	12	20	32	40
	100%	0	1	1	2	2	4	9	13	22	36	45

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	0	1	1	2	4	5
	50%	0	0	0	0	0	1	1	2	3	5	6
	60%	0	0	0	0	0	1	1	2	4	6	7
	70%	0	0	0	0	0	1	2	3	4	7	9
	80%	0	0	0	0	0	1	2	3	5	8	10
	90%	0	0	0	0	1	1	2	3	5	9	11
	100%	0	0	0	0	1	1	2	4	6	10	12
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	3	5	8	10
	20%	0	0	1	1	1	2	4	6	10	15	19
	30%	0	1	1	1	1	3	6	9	14	23	29
	40%	0	1	1	2	2	4	8	11	19	31	38
	50%	0	1	1	2	2	5	10	14	24	38	48
	60%	1	1	2	2	3	6	11	17	29	46	57
	70%	1	1	2	3	3	7	13	20	33	53	67
	80%	1	2	2	3	4	8	15	23	38	61	76
	90%	1	2	3	3	4	9	17	26	43	69	86
	100%	1	2	3	4	5	10	19	29	48	76	95

Table 3.145 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Puffin Island SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%
	20%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.54%
	30%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.41%	0.65%	0.81%
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.87%	1.08%
	50%	0.01%	0.03%	0.04%	0.05%	0.07%	0.14%	0.27%	0.41%	0.68%	1.08%	1.35%
	60%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.49%	0.81%	1.30%	1.62%
	70%	0.02%	0.04%	0.06%	0.08%	0.09%	0.19%	0.38%	0.57%	0.95%	1.52%	1.89%
	80%	0.02%	0.04%	0.06%	0.09%	0.11%	0.22%	0.43%	0.65%	1.08%	1.73%	2.16%
	90%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.49%	0.73%	1.22%	1.95%	2.44%
	100%	0.03%	0.05%	0.08%	0.11%	0.14%	0.27%	0.54%	0.81%	1.35%	2.16%	2.71%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.19%	0.30%	0.37%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.44%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.16%	0.26%	0.42%	0.52%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.47%	0.59%
	90%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.67%
	100%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.59%	0.74%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.46%	0.58%
	20%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%
	30%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.39%	1.74%
	40%	0.02%	0.05%	0.07%	0.09%	0.12%	0.23%	0.46%	0.70%	1.16%	1.85%	2.32%
	50%	0.03%	0.06%	0.09%	0.12%	0.14%	0.29%	0.58%	0.87%	1.45%	2.32%	2.90%
	60%	0.03%	0.07%	0.10%	0.14%	0.17%	0.35%	0.70%	1.04%	1.74%	2.78%	3.48%
	70%	0.04%	0.08%	0.12%	0.16%	0.20%	0.41%	0.81%	1.22%	2.03%	3.24%	4.06%
	80%	0.05%	0.09%	0.14%	0.19%	0.23%	0.46%	0.93%	1.39%	2.32%	3.71%	4.64%
	90%	0.05%	0.10%	0.16%	0.21%	0.26%	0.52%	1.04%	1.56%	2.61%	4.17%	5.21%
	100%	0.06%	0.12%	0.17%	0.23%	0.29%	0.58%	1.16%	1.74%	2.90%	4.64%	5.79%

Table 3.146 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Skelligs SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	1	1	2
	60%	0	0	0	0	0	0	0	1	1	1	2
	70%	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	0	1	1	2	2
	90%	0	0	0	0	0	0	1	1	1	2	3
	100%	0	0	0	0	0	0	1	1	2	2	3

Table 3.147 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.13%	0.21%	0.34%	0.42%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.14%	0.24%	0.39%	0.48%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.54%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.60%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%
	100%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.26%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.38%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.51%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.38%	0.61%	0.77%
	70%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.31%	0.51%	0.82%	1.02%
	90%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.92%	1.15%
	100%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.38%	0.64%	1.02%	1.28%

Table 3.148 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Skelligs SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	1	1	2
	60%	0	0	0	0	0	0	0	1	1	1	2
	70%	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	0	1	1	2	2
	90%	0	0	0	0	0	0	1	1	1	2	3
	100%	0	0	0	0	0	0	1	1	2	2	3

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	0	1	1	2
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	1	1	1	2	3
	60%	0	0	0	0	0	0	1	1	2	2	3
	70%	0	0	0	0	0	0	1	1	2	3	4
	80%	0	0	0	0	0	0	1	1	2	3	4
	90%	0	0	0	0	0	0	1	1	2	4	5
	100%	0	0	0	0	0	1	1	2	3	4	5

Table 3.149 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.52%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.64%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.39%	0.62%	0.77%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.83%	1.03%
	90%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%
	100%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.29%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.31%	0.38%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.22%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.43%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.65%
	40%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.69%	0.87%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.87%	1.08%
	60%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.65%	1.04%	1.30%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.45%	0.76%	1.21%	1.51%
	80%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.38%	1.73%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.97%	1.56%	1.95%
	100%	0.02%	0.04%	0.06%	0.09%	0.11%	0.22%	0.43%	0.65%	1.08%	1.73%	2.16%

Table 3.150 Mean, LCI and UCI displacement matrices for **Manx shearwater** apportioned to **Skelligs SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	2
	100%	0	0	0	0	0	0	0	1	1	1	2

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	0	1	1	2
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	1	1	1	2	3
	60%	0	0	0	0	0	0	1	1	2	3	3
	70%	0	0	0	0	0	0	1	1	2	3	4
	80%	0	0	0	0	0	0	1	1	2	3	4
	90%	0	0	0	0	0	0	1	1	2	4	5
	100%	0	0	0	0	0	1	1	2	3	4	5

Table 3.151 Mean, LCI and UCI displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.31%	0.39%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.44%	0.55%
	80%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.31%	0.50%	0.63%
	90%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.57%	0.71%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.79%

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.34%	0.55%	0.69%
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.28%	0.46%	0.73%	0.92%
	50%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.92%	1.15%
	60%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.41%	0.69%	1.10%	1.38%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.28%	1.60%
	80%	0.02%	0.04%	0.06%	0.07%	0.09%	0.18%	0.37%	0.55%	0.92%	1.47%	1.83%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.21%	0.41%	0.62%	1.03%	1.65%	2.06%
	100%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.69%	1.15%	1.83%	2.29%

Table 3.152 Mean, LCI and UCI **year-round** displacement matrices for **Manx shearwater** apportioned to **Skelligs SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	1	2	3
	50%	0	0	0	0	0	0	1	1	2	3	3
	60%	0	0	0	0	0	0	1	1	2	3	4
	70%	0	0	0	0	0	0	1	1	2	4	4
	80%	0	0	0	0	0	1	1	2	3	4	5
	90%	0	0	0	0	0	1	1	2	3	5	6
	100%	0	0	0	0	0	1	1	2	3	5	6

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	2
	100%	0	0	0	0	0	0	0	1	1	1	2
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	1	1	1	2	3
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	1	1	2	3	4	5
	50%	0	0	0	0	0	1	1	2	3	5	7
	60%	0	0	0	0	0	1	2	2	4	6	8
	70%	0	0	0	0	0	1	2	3	5	8	9
	80%	0	0	0	0	1	1	2	3	5	9	11
	90%	0	0	0	0	1	1	2	4	6	10	12
	100%	0	0	0	1	1	1	3	4	7	11	13

Table 3.153 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **Manx shearwater** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.27%
	20%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.54%
	30%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.64%	0.80%
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.54%	0.86%	1.07%
	50%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.27%	0.40%	0.67%	1.07%	1.34%
	60%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.29%	1.61%
	70%	0.02%	0.04%	0.06%	0.07%	0.09%	0.19%	0.37%	0.56%	0.94%	1.50%	1.87%
	80%	0.02%	0.04%	0.06%	0.09%	0.11%	0.21%	0.43%	0.64%	1.07%	1.71%	2.14%
	90%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.48%	0.72%	1.21%	1.93%	2.41%
	100%	0.03%	0.05%	0.08%	0.11%	0.13%	0.27%	0.54%	0.80%	1.34%	2.14%	2.68%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.29%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.37%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.52%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.29%	0.47%	0.59%
	90%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.66%
	100%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.59%	0.74%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	20%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.92%	1.15%
	30%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.34%	0.52%	0.86%	1.38%	1.72%
	40%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.69%	1.15%	1.84%	2.29%
	50%	0.03%	0.06%	0.09%	0.11%	0.14%	0.29%	0.57%	0.86%	1.43%	2.29%	2.87%
	60%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.69%	1.03%	1.72%	2.75%	3.44%
	70%	0.04%	0.08%	0.12%	0.16%	0.20%	0.40%	0.80%	1.20%	2.01%	3.21%	4.02%
	80%	0.05%	0.09%	0.14%	0.18%	0.23%	0.46%	0.92%	1.38%	2.29%	3.67%	4.59%
	90%	0.05%	0.10%	0.15%	0.21%	0.26%	0.52%	1.03%	1.55%	2.58%	4.13%	5.16%
	100%	0.06%	0.11%	0.17%	0.23%	0.29%	0.57%	1.15%	1.72%	2.87%	4.59%	5.74%

Table 3.154 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Ailsa Craig SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	4	6	7
	20%	0	0	0	1	1	1	3	4	7	12	15
	30%	0	0	1	1	1	2	4	7	11	18	22
	40%	0	1	1	1	1	3	6	9	15	24	30
	50%	0	1	1	1	2	4	7	11	19	30	37
	60%	0	1	1	2	2	4	9	13	22	36	45
	70%	1	1	2	2	3	5	10	16	26	42	52
	80%	1	1	2	2	3	6	12	18	30	48	60
	90%	1	1	2	3	3	7	13	20	34	54	67
	100%	1	1	2	3	4	7	15	22	37	60	75

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	4	5
	20%	0	0	0	0	1	1	2	3	5	9	11
	30%	0	0	0	1	1	2	3	5	8	13	16
	40%	0	0	1	1	1	2	4	7	11	18	22
	50%	0	1	1	1	1	3	5	8	14	22	27
	60%	0	1	1	1	2	3	7	10	16	26	33
	70%	0	1	1	2	2	4	8	12	19	31	38
	80%	0	1	1	2	2	4	9	13	22	35	44
	90%	0	1	1	2	2	5	10	15	25	39	49
	100%	1	1	2	2	3	5	11	16	27	44	55
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	1	1	2	3	5	9	11
	20%	0	0	1	1	1	2	4	7	11	17	22
	30%	0	1	1	1	2	3	7	10	16	26	33
	40%	0	1	1	2	2	4	9	13	22	35	43
	50%	1	1	2	2	3	5	11	16	27	43	54
	60%	1	1	2	3	3	7	13	20	33	52	65
	70%	1	2	2	3	4	8	15	23	38	61	76
	80%	1	2	3	3	4	9	17	26	43	69	87
	90%	1	2	3	4	5	10	20	29	49	78	98
	100%	1	2	3	4	5	11	22	33	54	87	108

Table 3.155 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Ailsa Craig SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.34%	0.52%	0.86%	1.37%	1.72%
	20%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.69%	1.03%	1.72%	2.75%	3.44%
	30%	0.05%	0.10%	0.15%	0.21%	0.26%	0.52%	1.03%	1.55%	2.58%	4.12%	5.15%
	40%	0.07%	0.14%	0.21%	0.27%	0.34%	0.69%	1.37%	2.06%	3.44%	5.50%	6.87%
	50%	0.09%	0.17%	0.26%	0.34%	0.43%	0.86%	1.72%	2.58%	4.30%	6.87%	8.59%
	60%	0.10%	0.21%	0.31%	0.41%	0.52%	1.03%	2.06%	3.09%	5.15%	8.25%	10.31%
	70%	0.12%	0.24%	0.36%	0.48%	0.60%	1.20%	2.41%	3.61%	6.01%	9.62%	12.03%
	80%	0.14%	0.27%	0.41%	0.55%	0.69%	1.37%	2.75%	4.12%	6.87%	11.00%	13.75%
	90%	0.15%	0.31%	0.46%	0.62%	0.77%	1.55%	3.09%	4.64%	7.73%	12.37%	15.46%
	100%	0.17%	0.34%	0.52%	0.69%	0.86%	1.72%	3.44%	5.15%	8.59%	13.75%	17.18%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.25%	0.38%	0.63%	1.01%	1.26%
	20%	0.03%	0.05%	0.08%	0.10%	0.13%	0.25%	0.50%	0.75%	1.26%	2.01%	2.51%
	30%	0.04%	0.08%	0.11%	0.15%	0.19%	0.38%	0.75%	1.13%	1.89%	3.02%	3.77%
	40%	0.05%	0.10%	0.15%	0.20%	0.25%	0.50%	1.01%	1.51%	2.51%	4.02%	5.03%
	50%	0.06%	0.13%	0.19%	0.25%	0.31%	0.63%	1.26%	1.89%	3.14%	5.03%	6.29%
	60%	0.08%	0.15%	0.23%	0.30%	0.38%	0.75%	1.51%	2.26%	3.77%	6.04%	7.54%
	70%	0.09%	0.18%	0.26%	0.35%	0.44%	0.88%	1.76%	2.64%	4.40%	7.04%	8.80%
	80%	0.10%	0.20%	0.30%	0.40%	0.50%	1.01%	2.01%	3.02%	5.03%	8.05%	10.06%
	90%	0.11%	0.23%	0.34%	0.45%	0.57%	1.13%	2.26%	3.40%	5.66%	9.05%	11.32%
	100%	0.13%	0.25%	0.38%	0.50%	0.63%	1.26%	2.51%	3.77%	6.29%	10.06%	12.57%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.05%	0.07%	0.10%	0.12%	0.25%	0.50%	0.75%	1.24%	1.99%	2.49%
	20%	0.05%	0.10%	0.15%	0.20%	0.25%	0.50%	1.00%	1.49%	2.49%	3.98%	4.98%
	30%	0.07%	0.15%	0.22%	0.30%	0.37%	0.75%	1.49%	2.24%	3.73%	5.97%	7.47%
	40%	0.10%	0.20%	0.30%	0.40%	0.50%	1.00%	1.99%	2.99%	4.98%	7.97%	9.96%
	50%	0.12%	0.25%	0.37%	0.50%	0.62%	1.24%	2.49%	3.73%	6.22%	9.96%	12.45%
	60%	0.15%	0.30%	0.45%	0.60%	0.75%	1.49%	2.99%	4.48%	7.47%	11.95%	14.94%
	70%	0.17%	0.35%	0.52%	0.70%	0.87%	1.74%	3.49%	5.23%	8.71%	13.94%	17.43%
	80%	0.20%	0.40%	0.60%	0.80%	1.00%	1.99%	3.98%	5.97%	9.96%	15.93%	19.92%
	90%	0.22%	0.45%	0.67%	0.90%	1.12%	2.24%	4.48%	6.72%	11.20%	17.92%	22.41%
	100%	0.25%	0.50%	0.75%	1.00%	1.24%	2.49%	4.98%	7.47%	12.45%	19.92%	24.89%

Table 3.156 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Ailsa Craig SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	4	6	7
	20%	0	0	0	1	1	1	3	4	7	12	15
	30%	0	0	1	1	1	2	4	7	11	18	22
	40%	0	1	1	1	1	3	6	9	15	24	30
	50%	0	1	1	1	2	4	7	11	19	30	37
	60%	0	1	1	2	2	4	9	13	22	36	45
	70%	1	1	2	2	3	5	10	16	26	42	52
	80%	1	1	2	2	3	6	12	18	30	48	60
	90%	1	1	2	3	3	7	13	20	34	54	67
	100%	1	1	2	3	4	7	15	22	37	60	75

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	4	5
	20%	0	0	0	0	1	1	2	3	5	9	11
	30%	0	0	0	1	1	2	3	5	8	13	16
	40%	0	0	1	1	1	2	4	7	11	18	22
	50%	0	1	1	1	1	3	5	8	14	22	27
	60%	0	1	1	1	2	3	7	10	16	26	33
	70%	0	1	1	2	2	4	8	12	19	31	38
	80%	0	1	1	2	2	4	9	13	22	35	44
	90%	0	1	1	2	2	5	10	15	25	39	49
	100%	1	1	2	2	3	5	11	16	27	44	55
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	1	1	2	3	5	9	11
	20%	0	0	1	1	1	2	4	7	11	17	22
	30%	0	1	1	1	2	3	7	10	16	26	33
	40%	0	1	1	2	2	4	9	13	22	35	43
	50%	1	1	2	2	3	5	11	16	27	43	54
	60%	1	1	2	3	3	7	13	20	33	52	65
	70%	1	2	2	3	4	8	15	23	38	61	76
	80%	1	2	3	3	4	9	17	26	43	69	87
	90%	1	2	3	4	5	10	20	29	49	78	98
	100%	1	2	3	4	5	11	22	33	54	87	108

Table 3.157 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Ailsa Craig SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.34%	0.52%	0.86%	1.37%	1.72%
	20%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.69%	1.03%	1.72%	2.75%	3.44%
	30%	0.05%	0.10%	0.15%	0.21%	0.26%	0.52%	1.03%	1.55%	2.58%	4.12%	5.15%
	40%	0.07%	0.14%	0.21%	0.27%	0.34%	0.69%	1.37%	2.06%	3.44%	5.50%	6.87%
	50%	0.09%	0.17%	0.26%	0.34%	0.43%	0.86%	1.72%	2.58%	4.30%	6.87%	8.59%
	60%	0.10%	0.21%	0.31%	0.41%	0.52%	1.03%	2.06%	3.09%	5.15%	8.25%	10.31%
	70%	0.12%	0.24%	0.36%	0.48%	0.60%	1.20%	2.41%	3.61%	6.01%	9.62%	12.03%
	80%	0.14%	0.27%	0.41%	0.55%	0.69%	1.37%	2.75%	4.12%	6.87%	11.00%	13.75%
	90%	0.15%	0.31%	0.46%	0.62%	0.77%	1.55%	3.09%	4.64%	7.73%	12.37%	15.46%
	100%	0.17%	0.34%	0.52%	0.69%	0.86%	1.72%	3.44%	5.15%	8.59%	13.75%	17.18%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.25%	0.38%	0.63%	1.01%	1.26%
	20%	0.03%	0.05%	0.08%	0.10%	0.13%	0.25%	0.50%	0.75%	1.26%	2.01%	2.51%
	30%	0.04%	0.08%	0.11%	0.15%	0.19%	0.38%	0.75%	1.13%	1.89%	3.02%	3.77%
	40%	0.05%	0.10%	0.15%	0.20%	0.25%	0.50%	1.01%	1.51%	2.51%	4.02%	5.03%
	50%	0.06%	0.13%	0.19%	0.25%	0.31%	0.63%	1.26%	1.89%	3.14%	5.03%	6.29%
	60%	0.08%	0.15%	0.23%	0.30%	0.38%	0.75%	1.51%	2.26%	3.77%	6.04%	7.54%
	70%	0.09%	0.18%	0.26%	0.35%	0.44%	0.88%	1.76%	2.64%	4.40%	7.04%	8.80%
	80%	0.10%	0.20%	0.30%	0.40%	0.50%	1.01%	2.01%	3.02%	5.03%	8.05%	10.06%
	90%	0.11%	0.23%	0.34%	0.45%	0.57%	1.13%	2.26%	3.40%	5.66%	9.05%	11.32%
	100%	0.13%	0.25%	0.38%	0.50%	0.63%	1.26%	2.51%	3.77%	6.29%	10.06%	12.57%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.05%	0.07%	0.10%	0.12%	0.25%	0.50%	0.75%	1.24%	1.99%	2.49%
	20%	0.05%	0.10%	0.15%	0.20%	0.25%	0.50%	1.00%	1.49%	2.49%	3.98%	4.98%
	30%	0.07%	0.15%	0.22%	0.30%	0.37%	0.75%	1.49%	2.24%	3.73%	5.97%	7.47%
	40%	0.10%	0.20%	0.30%	0.40%	0.50%	1.00%	1.99%	2.99%	4.98%	7.97%	9.96%
	50%	0.12%	0.25%	0.37%	0.50%	0.62%	1.24%	2.49%	3.73%	6.22%	9.96%	12.45%
	60%	0.15%	0.30%	0.45%	0.60%	0.75%	1.49%	2.99%	4.48%	7.47%	11.95%	14.94%
	70%	0.17%	0.35%	0.52%	0.70%	0.87%	1.74%	3.49%	5.23%	8.71%	13.94%	17.43%
	80%	0.20%	0.40%	0.60%	0.80%	1.00%	1.99%	3.98%	5.97%	9.96%	15.93%	19.92%
	90%	0.22%	0.45%	0.67%	0.90%	1.12%	2.24%	4.48%	6.72%	11.20%	17.92%	22.41%
	100%	0.25%	0.50%	0.75%	1.00%	1.24%	2.49%	4.98%	7.47%	12.45%	19.92%	24.89%

Table 3.158 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Rathlin Island SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	3	4	5	6	13	25	38	64	102	127
	20%	3	5	8	10	13	25	51	76	127	204	254
	30%	4	8	11	15	19	38	76	114	191	305	382
	40%	5	10	15	20	25	51	102	153	254	407	509
	50%	6	13	19	25	32	64	127	191	318	509	636
	60%	8	15	23	31	38	76	153	229	382	611	763
	70%	9	18	27	36	45	89	178	267	445	712	891
	80%	10	20	31	41	51	102	204	305	509	814	1018
	90%	11	23	34	46	57	114	229	343	572	916	1145
	100%	13	25	38	51	64	127	254	382	636	1018	1272

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	2	3	4	5	9	19	28	47	74	93
	20%	2	4	6	7	9	19	37	56	93	149	186
	30%	3	6	8	11	14	28	56	84	140	223	279
	40%	4	7	11	15	19	37	74	112	186	298	372
	50%	5	9	14	19	23	47	93	140	233	372	466
	60%	6	11	17	22	28	56	112	168	279	447	559
	70%	7	13	20	26	33	65	130	196	326	521	652
	80%	7	15	22	30	37	74	149	223	372	596	745
	90%	8	17	25	34	42	84	168	251	419	670	838
	100%	9	19	28	37	47	93	186	279	466	745	931
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	2	4	6	7	9	18	37	55	92	147	184
	20%	4	7	11	15	18	37	74	111	184	295	369
	30%	6	11	17	22	28	55	111	166	276	442	553
	40%	7	15	22	29	37	74	147	221	369	590	737
	50%	9	18	28	37	46	92	184	276	461	737	922
	60%	11	22	33	44	55	111	221	332	553	885	1106
	70%	13	26	39	52	65	129	258	387	645	1032	1290
	80%	15	29	44	59	74	147	295	442	737	1180	1475
	90%	17	33	50	66	83	166	332	498	829	1327	1659
	100%	18	37	55	74	92	184	369	553	922	1475	1843

Table 3.159 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.60%	0.95%	1.19%
	20%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.48%	0.72%	1.19%	1.91%	2.39%
	30%	0.04%	0.07%	0.11%	0.14%	0.18%	0.36%	0.72%	1.07%	1.79%	2.86%	3.58%
	40%	0.05%	0.10%	0.14%	0.19%	0.24%	0.48%	0.95%	1.43%	2.39%	3.82%	4.77%
	50%	0.06%	0.12%	0.18%	0.24%	0.30%	0.60%	1.19%	1.79%	2.98%	4.77%	5.97%
	60%	0.07%	0.14%	0.21%	0.29%	0.36%	0.72%	1.43%	2.15%	3.58%	5.73%	7.16%
	70%	0.08%	0.17%	0.25%	0.33%	0.42%	0.84%	1.67%	2.51%	4.18%	6.68%	8.35%
	80%	0.10%	0.19%	0.29%	0.38%	0.48%	0.95%	1.91%	2.86%	4.77%	7.64%	9.55%
	90%	0.11%	0.21%	0.32%	0.43%	0.54%	1.07%	2.15%	3.22%	5.37%	8.59%	10.74%
	100%	0.12%	0.24%	0.36%	0.48%	0.60%	1.19%	2.39%	3.58%	5.97%	9.55%	11.93%

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.44%	0.70%	0.87%
	20%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.40%	1.75%
	30%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.52%	0.79%	1.31%	2.10%	2.62%
	40%	0.03%	0.07%	0.10%	0.14%	0.17%	0.35%	0.70%	1.05%	1.75%	2.79%	3.49%
	50%	0.04%	0.09%	0.13%	0.17%	0.22%	0.44%	0.87%	1.31%	2.18%	3.49%	4.37%
	60%	0.05%	0.10%	0.16%	0.21%	0.26%	0.52%	1.05%	1.57%	2.62%	4.19%	5.24%
	70%	0.06%	0.12%	0.18%	0.24%	0.31%	0.61%	1.22%	1.83%	3.06%	4.89%	6.11%
	80%	0.07%	0.14%	0.21%	0.28%	0.35%	0.70%	1.40%	2.10%	3.49%	5.59%	6.99%
	90%	0.08%	0.16%	0.24%	0.31%	0.39%	0.79%	1.57%	2.36%	3.93%	6.29%	7.86%
	100%	0.09%	0.17%	0.26%	0.35%	0.44%	0.87%	1.75%	2.62%	4.37%	6.99%	8.73%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.86%	1.38%	1.73%
	20%	0.03%	0.07%	0.10%	0.14%	0.17%	0.35%	0.69%	1.04%	1.73%	2.77%	3.46%
	30%	0.05%	0.10%	0.16%	0.21%	0.26%	0.52%	1.04%	1.56%	2.59%	4.15%	5.19%
	40%	0.07%	0.14%	0.21%	0.28%	0.35%	0.69%	1.38%	2.07%	3.46%	5.53%	6.91%
	50%	0.09%	0.17%	0.26%	0.35%	0.43%	0.86%	1.73%	2.59%	4.32%	6.91%	8.64%
	60%	0.10%	0.21%	0.31%	0.41%	0.52%	1.04%	2.07%	3.11%	5.19%	8.30%	10.37%
	70%	0.12%	0.24%	0.36%	0.48%	0.61%	1.21%	2.42%	3.63%	6.05%	9.68%	12.10%
	80%	0.14%	0.28%	0.41%	0.55%	0.69%	1.38%	2.77%	4.15%	6.91%	11.06%	13.83%
	90%	0.16%	0.31%	0.47%	0.62%	0.78%	1.56%	3.11%	4.67%	7.78%	12.45%	15.56%
	100%	0.17%	0.35%	0.52%	0.69%	0.86%	1.73%	3.46%	5.19%	8.64%	13.83%	17.29%

Table 3.160 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Rathlin Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	3	4	5	6	13	25	38	64	102	127
	20%	3	5	8	10	13	25	51	76	127	204	254
	30%	4	8	11	15	19	38	76	114	191	305	382
	40%	5	10	15	20	25	51	102	153	254	407	509
	50%	6	13	19	25	32	64	127	191	318	509	636
	60%	8	15	23	31	38	76	153	229	382	611	763
	70%	9	18	27	36	45	89	178	267	445	712	891
	80%	10	20	31	41	51	102	204	305	509	814	1018
	90%	11	23	34	46	57	114	229	343	572	916	1145
	100%	13	25	38	51	64	127	254	382	636	1018	1272

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	2	3	4	5	9	19	28	47	74	93
	20%	2	4	6	7	9	19	37	56	93	149	186
	30%	3	6	8	11	14	28	56	84	140	223	279
	40%	4	7	11	15	19	37	74	112	186	298	372
	50%	5	9	14	19	23	47	93	140	233	372	466
	60%	6	11	17	22	28	56	112	168	279	447	559
	70%	7	13	20	26	33	65	130	196	326	521	652
	80%	7	15	22	30	37	74	149	223	372	596	745
	90%	8	17	25	34	42	84	168	251	419	670	838
	100%	9	19	28	37	47	93	186	279	466	745	931
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	2	4	6	7	9	18	37	55	92	147	184
	20%	4	7	11	15	18	37	74	111	184	295	369
	30%	6	11	17	22	28	55	111	166	276	442	553
	40%	7	15	22	29	37	74	147	221	369	590	737
	50%	9	18	28	37	46	92	184	276	461	737	922
	60%	11	22	33	44	55	111	221	332	553	885	1106
	70%	13	26	39	52	65	129	258	387	645	1032	1290
	80%	15	29	44	59	74	147	295	442	737	1180	1475
	90%	17	33	50	66	83	166	332	498	829	1327	1659
	100%	18	37	55	74	92	184	369	553	922	1475	1843

Table 3.161 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.60%	0.95%	1.19%
	20%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.48%	0.72%	1.19%	1.91%	2.39%
	30%	0.04%	0.07%	0.11%	0.14%	0.18%	0.36%	0.72%	1.07%	1.79%	2.86%	3.58%
	40%	0.05%	0.10%	0.14%	0.19%	0.24%	0.48%	0.95%	1.43%	2.39%	3.82%	4.77%
	50%	0.06%	0.12%	0.18%	0.24%	0.30%	0.60%	1.19%	1.79%	2.98%	4.77%	5.97%
	60%	0.07%	0.14%	0.21%	0.29%	0.36%	0.72%	1.43%	2.15%	3.58%	5.73%	7.16%
	70%	0.08%	0.17%	0.25%	0.33%	0.42%	0.84%	1.67%	2.51%	4.18%	6.68%	8.35%
	80%	0.10%	0.19%	0.29%	0.38%	0.48%	0.95%	1.91%	2.86%	4.77%	7.64%	9.55%
	90%	0.11%	0.21%	0.32%	0.43%	0.54%	1.07%	2.15%	3.22%	5.37%	8.59%	10.74%
	100%	0.12%	0.24%	0.36%	0.48%	0.60%	1.19%	2.39%	3.58%	5.97%	9.55%	11.93%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.44%	0.70%	0.87%
	20%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.40%	1.75%
	30%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.52%	0.79%	1.31%	2.10%	2.62%
	40%	0.03%	0.07%	0.10%	0.14%	0.17%	0.35%	0.70%	1.05%	1.75%	2.79%	3.49%
	50%	0.04%	0.09%	0.13%	0.17%	0.22%	0.44%	0.87%	1.31%	2.18%	3.49%	4.37%
	60%	0.05%	0.10%	0.16%	0.21%	0.26%	0.52%	1.05%	1.57%	2.62%	4.19%	5.24%
	70%	0.06%	0.12%	0.18%	0.24%	0.31%	0.61%	1.22%	1.83%	3.06%	4.89%	6.11%
	80%	0.07%	0.14%	0.21%	0.28%	0.35%	0.70%	1.40%	2.10%	3.49%	5.59%	6.99%
	90%	0.08%	0.16%	0.24%	0.31%	0.39%	0.79%	1.57%	2.36%	3.93%	6.29%	7.86%
	100%	0.09%	0.17%	0.26%	0.35%	0.44%	0.87%	1.75%	2.62%	4.37%	6.99%	8.73%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.86%	1.38%	1.73%
	20%	0.03%	0.07%	0.10%	0.14%	0.17%	0.35%	0.69%	1.04%	1.73%	2.77%	3.46%
	30%	0.05%	0.10%	0.16%	0.21%	0.26%	0.52%	1.04%	1.56%	2.59%	4.15%	5.19%
	40%	0.07%	0.14%	0.21%	0.28%	0.35%	0.69%	1.38%	2.07%	3.46%	5.53%	6.91%
	50%	0.09%	0.17%	0.26%	0.35%	0.43%	0.86%	1.73%	2.59%	4.32%	6.91%	8.64%
	60%	0.10%	0.21%	0.31%	0.41%	0.52%	1.04%	2.07%	3.11%	5.19%	8.30%	10.37%
	70%	0.12%	0.24%	0.36%	0.48%	0.61%	1.21%	2.42%	3.63%	6.05%	9.68%	12.10%
	80%	0.14%	0.28%	0.41%	0.55%	0.69%	1.38%	2.77%	4.15%	6.91%	11.06%	13.83%
	90%	0.16%	0.31%	0.47%	0.62%	0.78%	1.56%	3.11%	4.67%	7.78%	12.45%	15.56%
	100%	0.17%	0.35%	0.52%	0.69%	0.86%	1.73%	3.46%	5.19%	8.64%	13.83%	17.29%

Table 3.162 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	6	11	17	22
	20%	0	1	1	2	2	4	9	13	22	35	43
	30%	1	1	2	3	3	6	13	19	32	52	65
	40%	1	2	3	3	4	9	17	26	43	69	86
	50%	1	2	3	4	5	11	22	32	54	86	108
	60%	1	3	4	5	6	13	26	39	65	104	130
	70%	2	3	5	6	8	15	30	45	76	121	151
	80%	2	3	5	7	9	17	35	52	86	138	173
	90%	2	4	6	8	10	19	39	58	97	156	195
	100%	2	4	6	9	11	22	43	65	108	173	216

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	2	3	5	8	13	16
	20%	0	1	1	1	2	3	6	9	16	25	32
	30%	0	1	1	2	2	5	9	14	24	38	47
	40%	1	1	2	3	3	6	13	19	32	51	63
	50%	1	2	2	3	4	8	16	24	40	63	79
	60%	1	2	3	4	5	9	19	28	47	76	95
	70%	1	2	3	4	6	11	22	33	55	89	111
	80%	1	3	4	5	6	13	25	38	63	101	127
	90%	1	3	4	6	7	14	28	43	71	114	142
	100%	2	3	5	6	8	16	32	47	79	127	158
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	1	2	3	6	9	16	25	31
	20%	1	1	2	3	3	6	13	19	31	50	63
	30%	1	2	3	4	5	9	19	28	47	75	94
	40%	1	3	4	5	6	13	25	38	63	100	125
	50%	2	3	5	6	8	16	31	47	78	125	157
	60%	2	4	6	8	9	19	38	56	94	150	188
	70%	2	4	7	9	11	22	44	66	110	175	219
	80%	3	5	8	10	13	25	50	75	125	200	251
	90%	3	6	8	11	14	28	56	85	141	226	282
	100%	3	6	9	13	16	31	63	94	157	251	313

Table 3.163 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.29%
	20%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.51%	0.77%	1.29%	2.06%	2.57%
	30%	0.04%	0.08%	0.12%	0.15%	0.19%	0.39%	0.77%	1.16%	1.93%	3.08%	3.86%
	40%	0.05%	0.10%	0.15%	0.21%	0.26%	0.51%	1.03%	1.54%	2.57%	4.11%	5.14%
	50%	0.06%	0.13%	0.19%	0.26%	0.32%	0.64%	1.29%	1.93%	3.21%	5.14%	6.43%
	60%	0.08%	0.15%	0.23%	0.31%	0.39%	0.77%	1.54%	2.31%	3.86%	6.17%	7.71%
	70%	0.09%	0.18%	0.27%	0.36%	0.45%	0.90%	1.80%	2.70%	4.50%	7.20%	9.00%
	80%	0.10%	0.21%	0.31%	0.41%	0.51%	1.03%	2.06%	3.08%	5.14%	8.22%	10.28%
	90%	0.12%	0.23%	0.35%	0.46%	0.58%	1.16%	2.31%	3.47%	5.78%	9.25%	11.57%
	100%	0.13%	0.26%	0.39%	0.51%	0.64%	1.29%	2.57%	3.86%	6.43%	10.28%	12.85%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.04%	0.06%	0.07%	0.09%	0.19%	0.37%	0.56%	0.93%	1.49%	1.86%
	20%	0.04%	0.07%	0.11%	0.15%	0.19%	0.37%	0.74%	1.12%	1.86%	2.98%	3.72%
	30%	0.06%	0.11%	0.17%	0.22%	0.28%	0.56%	1.12%	1.68%	2.79%	4.47%	5.59%
	40%	0.07%	0.15%	0.22%	0.30%	0.37%	0.74%	1.49%	2.23%	3.72%	5.96%	7.45%
	50%	0.09%	0.19%	0.28%	0.37%	0.47%	0.93%	1.86%	2.79%	4.65%	7.45%	9.31%
	60%	0.11%	0.22%	0.34%	0.45%	0.56%	1.12%	2.23%	3.35%	5.59%	8.94%	11.17%
	70%	0.13%	0.26%	0.39%	0.52%	0.65%	1.30%	2.61%	3.91%	6.52%	10.43%	13.03%
	80%	0.15%	0.30%	0.45%	0.60%	0.74%	1.49%	2.98%	4.47%	7.45%	11.92%	14.90%
	90%	0.17%	0.34%	0.50%	0.67%	0.84%	1.68%	3.35%	5.03%	8.38%	13.41%	16.76%
	100%	0.19%	0.37%	0.56%	0.74%	0.93%	1.86%	3.72%	5.59%	9.31%	14.90%	18.62%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.19%	0.28%	0.47%	0.75%	0.94%
	20%	0.02%	0.04%	0.06%	0.08%	0.09%	0.19%	0.38%	0.56%	0.94%	1.50%	1.88%
	30%	0.03%	0.06%	0.08%	0.11%	0.14%	0.28%	0.56%	0.85%	1.41%	2.26%	2.82%
	40%	0.04%	0.08%	0.11%	0.15%	0.19%	0.38%	0.75%	1.13%	1.88%	3.01%	3.76%
	50%	0.05%	0.09%	0.14%	0.19%	0.24%	0.47%	0.94%	1.41%	2.35%	3.76%	4.70%
	60%	0.06%	0.11%	0.17%	0.23%	0.28%	0.56%	1.13%	1.69%	2.82%	4.51%	5.64%
	70%	0.07%	0.13%	0.20%	0.26%	0.33%	0.66%	1.32%	1.98%	3.29%	5.27%	6.58%
	80%	0.08%	0.15%	0.23%	0.30%	0.38%	0.75%	1.50%	2.26%	3.76%	6.02%	7.52%
	90%	0.08%	0.17%	0.25%	0.34%	0.42%	0.85%	1.69%	2.54%	4.23%	6.77%	8.46%
	100%	0.09%	0.19%	0.28%	0.38%	0.47%	0.94%	1.88%	2.82%	4.70%	7.52%	9.40%

Table 3.164 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	6	11	17	22
	20%	0	1	1	2	2	4	9	13	22	35	43
	30%	1	1	2	3	3	6	13	19	32	52	65
	40%	1	2	3	3	4	9	17	26	43	69	86
	50%	1	2	3	4	5	11	22	32	54	86	108
	60%	1	3	4	5	6	13	26	39	65	104	130
	70%	2	3	5	6	8	15	30	45	76	121	151
	80%	2	3	5	7	9	17	35	52	86	138	173
	90%	2	4	6	8	10	19	39	58	97	156	195
	100%	2	4	6	9	11	22	43	65	108	173	216

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	2	3	5	8	13	16
	20%	0	1	1	1	2	3	6	9	16	25	32
	30%	0	1	1	2	2	5	9	14	24	38	47
	40%	1	1	2	3	3	6	13	19	32	51	63
	50%	1	2	2	3	4	8	16	24	40	63	79
	60%	1	2	3	4	5	9	19	28	47	76	95
	70%	1	2	3	4	6	11	22	33	55	89	111
	80%	1	3	4	5	6	13	25	38	63	101	127
	90%	1	3	4	6	7	14	28	43	71	114	142
	100%	2	3	5	6	8	16	32	47	79	127	158
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	1	2	3	6	9	16	25	31
	20%	1	1	2	3	3	6	13	19	31	50	63
	30%	1	2	3	4	5	9	19	28	47	75	94
	40%	1	3	4	5	6	13	25	38	63	100	125
	50%	2	3	5	6	8	16	31	47	78	125	157
	60%	2	4	6	8	9	19	38	56	94	150	188
	70%	2	4	7	9	11	22	44	66	110	175	219
	80%	3	5	8	10	13	25	50	75	125	200	251
	90%	3	6	8	11	14	28	56	85	141	226	282
	100%	3	6	9	13	16	31	63	94	157	251	313

Table 3.165 Mean, LCI and UCI year-round displacement matrices showing change in mortality rate for **guillemot** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.29%
	20%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.51%	0.77%	1.29%	2.06%	2.57%
	30%	0.04%	0.08%	0.12%	0.15%	0.19%	0.39%	0.77%	1.16%	1.93%	3.08%	3.86%
	40%	0.05%	0.10%	0.15%	0.21%	0.26%	0.51%	1.03%	1.54%	2.57%	4.11%	5.14%
	50%	0.06%	0.13%	0.19%	0.26%	0.32%	0.64%	1.29%	1.93%	3.21%	5.14%	6.43%
	60%	0.08%	0.15%	0.23%	0.31%	0.39%	0.77%	1.54%	2.31%	3.86%	6.17%	7.71%
	70%	0.09%	0.18%	0.27%	0.36%	0.45%	0.90%	1.80%	2.70%	4.50%	7.20%	9.00%
	80%	0.10%	0.21%	0.31%	0.41%	0.51%	1.03%	2.06%	3.08%	5.14%	8.22%	10.28%
	90%	0.12%	0.23%	0.35%	0.46%	0.58%	1.16%	2.31%	3.47%	5.78%	9.25%	11.57%
	100%	0.13%	0.26%	0.39%	0.51%	0.64%	1.29%	2.57%	3.86%	6.43%	10.28%	12.85%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.19%	0.28%	0.47%	0.75%	0.94%
	20%	0.02%	0.04%	0.06%	0.08%	0.09%	0.19%	0.38%	0.56%	0.94%	1.50%	1.88%
	30%	0.03%	0.06%	0.08%	0.11%	0.14%	0.28%	0.56%	0.85%	1.41%	2.26%	2.82%
	40%	0.04%	0.08%	0.11%	0.15%	0.19%	0.38%	0.75%	1.13%	1.88%	3.01%	3.76%
	50%	0.05%	0.09%	0.14%	0.19%	0.24%	0.47%	0.94%	1.41%	2.35%	3.76%	4.70%
	60%	0.06%	0.11%	0.17%	0.23%	0.28%	0.56%	1.13%	1.69%	2.82%	4.51%	5.64%
	70%	0.07%	0.13%	0.20%	0.26%	0.33%	0.66%	1.32%	1.98%	3.29%	5.27%	6.58%
	80%	0.08%	0.15%	0.23%	0.30%	0.38%	0.75%	1.50%	2.26%	3.76%	6.02%	7.52%
	90%	0.08%	0.17%	0.25%	0.34%	0.42%	0.85%	1.69%	2.54%	4.23%	6.77%	8.46%
	100%	0.09%	0.19%	0.28%	0.38%	0.47%	0.94%	1.88%	2.82%	4.70%	7.52%	9.40%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.04%	0.06%	0.07%	0.09%	0.19%	0.37%	0.56%	0.93%	1.49%	1.86%
	20%	0.04%	0.07%	0.11%	0.15%	0.19%	0.37%	0.74%	1.12%	1.86%	2.98%	3.72%
	30%	0.06%	0.11%	0.17%	0.22%	0.28%	0.56%	1.12%	1.68%	2.79%	4.47%	5.59%
	40%	0.07%	0.15%	0.22%	0.30%	0.37%	0.74%	1.49%	2.23%	3.72%	5.96%	7.45%
	50%	0.09%	0.19%	0.28%	0.37%	0.47%	0.93%	1.86%	2.79%	4.65%	7.45%	9.31%
	60%	0.11%	0.22%	0.34%	0.45%	0.56%	1.12%	2.23%	3.35%	5.59%	8.94%	11.17%
	70%	0.13%	0.26%	0.39%	0.52%	0.65%	1.30%	2.61%	3.91%	6.52%	10.43%	13.03%
	80%	0.15%	0.30%	0.45%	0.60%	0.74%	1.49%	2.98%	4.47%	7.45%	11.92%	14.90%
	90%	0.17%	0.34%	0.50%	0.67%	0.84%	1.68%	3.35%	5.03%	8.38%	13.41%	16.76%
	100%	0.19%	0.37%	0.56%	0.74%	0.93%	1.86%	3.72%	5.59%	9.31%	14.90%	18.62%

Table 3.166 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **North Colonsay and Western Cliffs SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	6	10	16	20
	20%	0	1	1	2	2	4	8	12	20	32	40
	30%	1	1	2	2	3	6	12	18	30	48	60
	40%	1	2	2	3	4	8	16	24	40	64	80
	50%	1	2	3	4	5	10	20	30	50	80	100
	60%	1	2	4	5	6	12	24	36	60	96	120
	70%	1	3	4	6	7	14	28	42	70	112	140
	80%	2	3	5	6	8	16	32	48	80	128	160
	90%	2	4	5	7	9	18	36	54	90	144	180
	100%	2	4	6	8	10	20	40	60	100	160	200

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	1	3	4	7	12	15
	20%	0	1	1	1	1	3	6	9	15	23	29
	30%	0	1	1	2	2	4	9	13	22	35	44
	40%	1	1	2	2	3	6	12	18	29	47	58
	50%	1	1	2	3	4	7	15	22	37	58	73
	60%	1	2	3	4	4	9	18	26	44	70	88
	70%	1	2	3	4	5	10	20	31	51	82	102
	80%	1	2	4	5	6	12	23	35	58	93	117
	90%	1	3	4	5	7	13	26	39	66	105	131
	100%	1	3	4	6	7	15	29	44	73	117	146
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	1	1	3	6	9	14	23	29
	20%	1	1	2	2	3	6	12	17	29	46	58
	30%	1	2	3	3	4	9	17	26	43	69	87
	40%	1	2	3	5	6	12	23	35	58	93	116
	50%	1	3	4	6	7	14	29	43	72	116	145
	60%	2	3	5	7	9	17	35	52	87	139	173
	70%	2	4	6	8	10	20	40	61	101	162	202
	80%	2	5	7	9	12	23	46	69	116	185	231
	90%	3	5	8	10	13	26	52	78	130	208	260
	100%	3	6	9	12	14	29	58	87	145	231	289

Table 3.167 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **North Colonsay and Western Cliffs SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.40%	1.75%
	20%	0.03%	0.07%	0.10%	0.14%	0.17%	0.35%	0.70%	1.05%	1.75%	2.79%	3.49%
	30%	0.05%	0.10%	0.16%	0.21%	0.26%	0.52%	1.05%	1.57%	2.62%	4.19%	5.24%
	40%	0.07%	0.14%	0.21%	0.28%	0.35%	0.70%	1.40%	2.09%	3.49%	5.59%	6.98%
	50%	0.09%	0.17%	0.26%	0.35%	0.44%	0.87%	1.75%	2.62%	4.36%	6.98%	8.73%
	60%	0.10%	0.21%	0.31%	0.42%	0.52%	1.05%	2.09%	3.14%	5.24%	8.38%	10.47%
	70%	0.12%	0.24%	0.37%	0.49%	0.61%	1.22%	2.44%	3.67%	6.11%	9.78%	12.22%
	80%	0.14%	0.28%	0.42%	0.56%	0.70%	1.40%	2.79%	4.19%	6.98%	11.17%	13.97%
	90%	0.16%	0.31%	0.47%	0.63%	0.79%	1.57%	3.14%	4.71%	7.86%	12.57%	15.71%
	100%	0.17%	0.35%	0.52%	0.70%	0.87%	1.75%	3.49%	5.24%	8.73%	13.97%	17.46%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.38%	0.64%	1.02%	1.28%
	20%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.51%	0.77%	1.28%	2.04%	2.56%
	30%	0.04%	0.08%	0.11%	0.15%	0.19%	0.38%	0.77%	1.15%	1.92%	3.07%	3.83%
	40%	0.05%	0.10%	0.15%	0.20%	0.26%	0.51%	1.02%	1.53%	2.56%	4.09%	5.11%
	50%	0.06%	0.13%	0.19%	0.26%	0.32%	0.64%	1.28%	1.92%	3.19%	5.11%	6.39%
	60%	0.08%	0.15%	0.23%	0.31%	0.38%	0.77%	1.53%	2.30%	3.83%	6.13%	7.67%
	70%	0.09%	0.18%	0.27%	0.36%	0.45%	0.89%	1.79%	2.68%	4.47%	7.15%	8.94%
	80%	0.10%	0.20%	0.31%	0.41%	0.51%	1.02%	2.04%	3.07%	5.11%	8.18%	10.22%
	90%	0.11%	0.23%	0.34%	0.46%	0.57%	1.15%	2.30%	3.45%	5.75%	9.20%	11.50%
	100%	0.13%	0.26%	0.38%	0.51%	0.64%	1.28%	2.56%	3.83%	6.39%	10.22%	12.78%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.03%	0.05%	0.08%	0.10%	0.13%	0.25%	0.51%	0.76%	1.26%	2.02%	2.53%
	20%	0.05%	0.10%	0.15%	0.20%	0.25%	0.51%	1.01%	1.52%	2.53%	4.05%	5.06%
	30%	0.08%	0.15%	0.23%	0.30%	0.38%	0.76%	1.52%	2.28%	3.79%	6.07%	7.59%
	40%	0.10%	0.20%	0.30%	0.40%	0.51%	1.01%	2.02%	3.04%	5.06%	8.09%	10.12%
	50%	0.13%	0.25%	0.38%	0.51%	0.63%	1.26%	2.53%	3.79%	6.32%	10.12%	12.65%
	60%	0.15%	0.30%	0.46%	0.61%	0.76%	1.52%	3.04%	4.55%	7.59%	12.14%	15.18%
	70%	0.18%	0.35%	0.53%	0.71%	0.89%	1.77%	3.54%	5.31%	8.85%	14.16%	17.71%
	80%	0.20%	0.40%	0.61%	0.81%	1.01%	2.02%	4.05%	6.07%	10.12%	16.19%	20.24%
	90%	0.23%	0.46%	0.68%	0.91%	1.14%	2.28%	4.55%	6.83%	11.38%	18.21%	22.77%
	100%	0.25%	0.51%	0.76%	1.01%	1.26%	2.53%	5.06%	7.59%	12.65%	20.24%	25.29%

Table 3.168 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **North Colonsay and Western Cliffs SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	6	10	16	20
	20%	0	1	1	2	2	4	8	12	20	32	40
	30%	1	1	2	2	3	6	12	18	30	48	60
	40%	1	2	2	3	4	8	16	24	40	64	80
	50%	1	2	3	4	5	10	20	30	50	80	100
	60%	1	2	4	5	6	12	24	36	60	96	120
	70%	1	3	4	6	7	14	28	42	70	112	140
	80%	2	3	5	6	8	16	32	48	80	128	160
	90%	2	4	5	7	9	18	36	54	90	144	180
	100%	2	4	6	8	10	20	40	60	100	160	200

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	1	3	4	7	12	15
	20%	0	1	1	1	1	3	6	9	15	23	29
	30%	0	1	1	2	2	4	9	13	22	35	44
	40%	1	1	2	2	3	6	12	18	29	47	58
	50%	1	1	2	3	4	7	15	22	37	58	73
	60%	1	2	3	4	4	9	18	26	44	70	88
	70%	1	2	3	4	5	10	20	31	51	82	102
	80%	1	2	4	5	6	12	23	35	58	93	117
	90%	1	3	4	5	7	13	26	39	66	105	131
	100%	1	3	4	6	7	15	29	44	73	117	146
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	1	1	3	6	9	14	23	29
	20%	1	1	2	2	3	6	12	17	29	46	58
	30%	1	2	3	3	4	9	17	26	43	69	87
	40%	1	2	3	5	6	12	23	35	58	93	116
	50%	1	3	4	6	7	14	29	43	72	116	145
	60%	2	3	5	7	9	17	35	52	87	139	173
	70%	2	4	6	8	10	20	40	61	101	162	202
	80%	2	5	7	9	12	23	46	69	116	185	231
	90%	3	5	8	10	13	26	52	78	130	208	260
	100%	3	6	9	12	14	29	58	87	145	231	289

Table 3.169 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **North Colonsay and Western Cliffs SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.40%	1.75%
	20%	0.03%	0.07%	0.10%	0.14%	0.17%	0.35%	0.70%	1.05%	1.75%	2.79%	3.49%
	30%	0.05%	0.10%	0.16%	0.21%	0.26%	0.52%	1.05%	1.57%	2.62%	4.19%	5.24%
	40%	0.07%	0.14%	0.21%	0.28%	0.35%	0.70%	1.40%	2.09%	3.49%	5.59%	6.98%
	50%	0.09%	0.17%	0.26%	0.35%	0.44%	0.87%	1.75%	2.62%	4.36%	6.98%	8.73%
	60%	0.10%	0.21%	0.31%	0.42%	0.52%	1.05%	2.09%	3.14%	5.24%	8.38%	10.47%
	70%	0.12%	0.24%	0.37%	0.49%	0.61%	1.22%	2.44%	3.67%	6.11%	9.78%	12.22%
	80%	0.14%	0.28%	0.42%	0.56%	0.70%	1.40%	2.79%	4.19%	6.98%	11.17%	13.97%
	90%	0.16%	0.31%	0.47%	0.63%	0.79%	1.57%	3.14%	4.71%	7.86%	12.57%	15.71%
	100%	0.17%	0.35%	0.52%	0.70%	0.87%	1.75%	3.49%	5.24%	8.73%	13.97%	17.46%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.38%	0.64%	1.02%	1.28%
	20%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.51%	0.77%	1.28%	2.04%	2.56%
	30%	0.04%	0.08%	0.11%	0.15%	0.19%	0.38%	0.77%	1.15%	1.92%	3.07%	3.83%
	40%	0.05%	0.10%	0.15%	0.20%	0.26%	0.51%	1.02%	1.53%	2.56%	4.09%	5.11%
	50%	0.06%	0.13%	0.19%	0.26%	0.32%	0.64%	1.28%	1.92%	3.19%	5.11%	6.39%
	60%	0.08%	0.15%	0.23%	0.31%	0.38%	0.77%	1.53%	2.30%	3.83%	6.13%	7.67%
	70%	0.09%	0.18%	0.27%	0.36%	0.45%	0.89%	1.79%	2.68%	4.47%	7.15%	8.94%
	80%	0.10%	0.20%	0.31%	0.41%	0.51%	1.02%	2.04%	3.07%	5.11%	8.18%	10.22%
	90%	0.11%	0.23%	0.34%	0.46%	0.57%	1.15%	2.30%	3.45%	5.75%	9.20%	11.50%
	100%	0.13%	0.26%	0.38%	0.51%	0.64%	1.28%	2.56%	3.83%	6.39%	10.22%	12.78%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.03%	0.05%	0.08%	0.10%	0.13%	0.25%	0.51%	0.76%	1.26%	2.02%	2.53%
	20%	0.05%	0.10%	0.15%	0.20%	0.25%	0.51%	1.01%	1.52%	2.53%	4.05%	5.06%
	30%	0.08%	0.15%	0.23%	0.30%	0.38%	0.76%	1.52%	2.28%	3.79%	6.07%	7.59%
	40%	0.10%	0.20%	0.30%	0.40%	0.51%	1.01%	2.02%	3.04%	5.06%	8.09%	10.12%
	50%	0.13%	0.25%	0.38%	0.51%	0.63%	1.26%	2.53%	3.79%	6.32%	10.12%	12.65%
	60%	0.15%	0.30%	0.46%	0.61%	0.76%	1.52%	3.04%	4.55%	7.59%	12.14%	15.18%
	70%	0.18%	0.35%	0.53%	0.71%	0.89%	1.77%	3.54%	5.31%	8.85%	14.16%	17.71%
	80%	0.20%	0.40%	0.61%	0.81%	1.01%	2.02%	4.05%	6.07%	10.12%	16.19%	20.24%
	90%	0.23%	0.46%	0.68%	0.91%	1.14%	2.28%	4.55%	6.83%	11.38%	18.21%	22.77%
	100%	0.25%	0.51%	0.76%	1.01%	1.26%	2.53%	5.06%	7.59%	12.65%	20.24%	25.29%

Table 3.170 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Canna and Sanday SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	5	6
	20%	0	0	0	0	1	1	2	3	6	9	12
	30%	0	0	1	1	1	2	3	5	9	14	17
	40%	0	0	1	1	1	2	5	7	12	19	23
	50%	0	1	1	1	1	3	6	9	15	23	29
	60%	0	1	1	1	2	3	7	10	17	28	35
	70%	0	1	1	2	2	4	8	12	20	33	41
	80%	0	1	1	2	2	5	9	14	23	37	47
	90%	1	1	2	2	3	5	10	16	26	42	52
	100%	1	1	2	2	3	6	12	17	29	47	58

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	0	1	2	3	4	7	9
	30%	0	0	0	1	1	1	3	4	6	10	13
	40%	0	0	1	1	1	2	3	5	9	14	17
	50%	0	0	1	1	1	2	4	6	11	17	21
	60%	0	1	1	1	1	3	5	8	13	20	26
	70%	0	1	1	1	1	3	6	9	15	24	30
	80%	0	1	1	1	2	3	7	10	17	27	34
	90%	0	1	1	2	2	4	8	12	19	31	38
	100%	0	1	1	2	2	4	9	13	21	34	43
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	3	4	7	8
	20%	0	0	1	1	1	2	3	5	8	13	17
	30%	0	1	1	1	1	3	5	8	13	20	25
	40%	0	1	1	1	2	3	7	10	17	27	34
	50%	0	1	1	2	2	4	8	13	21	34	42
	60%	1	1	2	2	3	5	10	15	25	40	51
	70%	1	1	2	2	3	6	12	18	30	47	59
	80%	1	1	2	3	3	7	13	20	34	54	67
	90%	1	2	2	3	4	8	15	23	38	61	76
	100%	1	2	3	3	4	8	17	25	42	67	84

Table 3.171 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Canna and Sanday SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.03%	0.06%	0.09%	0.12%	0.16%	0.31%	0.62%	0.94%	1.56%	2.49%	3.12%
	20%	0.06%	0.12%	0.19%	0.25%	0.31%	0.62%	1.25%	1.87%	3.12%	4.99%	6.24%
	30%	0.09%	0.19%	0.28%	0.37%	0.47%	0.94%	1.87%	2.81%	4.68%	7.48%	9.35%
	40%	0.12%	0.25%	0.37%	0.50%	0.62%	1.25%	2.49%	3.74%	6.24%	9.98%	12.47%
	50%	0.16%	0.31%	0.47%	0.62%	0.78%	1.56%	3.12%	4.68%	7.80%	12.47%	15.59%
	60%	0.19%	0.37%	0.56%	0.75%	0.94%	1.87%	3.74%	5.61%	9.35%	14.97%	18.71%
	70%	0.22%	0.44%	0.65%	0.87%	1.09%	2.18%	4.37%	6.55%	10.91%	17.46%	21.83%
	80%	0.25%	0.50%	0.75%	1.00%	1.25%	2.49%	4.99%	7.48%	12.47%	19.96%	24.95%
	90%	0.28%	0.56%	0.84%	1.12%	1.40%	2.81%	5.61%	8.42%	14.03%	22.45%	28.06%
	100%	0.31%	0.62%	0.94%	1.25%	1.56%	3.12%	6.24%	9.35%	15.59%	24.95%	31.18%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.68%	1.14%	1.83%	2.28%
	20%	0.05%	0.09%	0.14%	0.18%	0.23%	0.46%	0.91%	1.37%	2.28%	3.65%	4.56%
	30%	0.07%	0.14%	0.21%	0.27%	0.34%	0.68%	1.37%	2.05%	3.42%	5.48%	6.85%
	40%	0.09%	0.18%	0.27%	0.37%	0.46%	0.91%	1.83%	2.74%	4.56%	7.30%	9.13%
	50%	0.11%	0.23%	0.34%	0.46%	0.57%	1.14%	2.28%	3.42%	5.71%	9.13%	11.41%
	60%	0.14%	0.27%	0.41%	0.55%	0.68%	1.37%	2.74%	4.11%	6.85%	10.95%	13.69%
	70%	0.16%	0.32%	0.48%	0.64%	0.80%	1.60%	3.19%	4.79%	7.99%	12.78%	15.97%
	80%	0.18%	0.37%	0.55%	0.73%	0.91%	1.83%	3.65%	5.48%	9.13%	14.60%	18.26%
	90%	0.21%	0.41%	0.62%	0.82%	1.03%	2.05%	4.11%	6.16%	10.27%	16.43%	20.54%
	100%	0.23%	0.46%	0.68%	0.91%	1.14%	2.28%	4.56%	6.85%	11.41%	18.26%	22.82%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.05%	0.09%	0.14%	0.18%	0.23%	0.45%	0.90%	1.36%	2.26%	3.61%	4.52%
	20%	0.09%	0.18%	0.27%	0.36%	0.45%	0.90%	1.81%	2.71%	4.52%	7.23%	9.04%
	30%	0.14%	0.27%	0.41%	0.54%	0.68%	1.36%	2.71%	4.07%	6.78%	10.84%	13.55%
	40%	0.18%	0.36%	0.54%	0.72%	0.90%	1.81%	3.61%	5.42%	9.04%	14.46%	18.07%
	50%	0.23%	0.45%	0.68%	0.90%	1.13%	2.26%	4.52%	6.78%	11.29%	18.07%	22.59%
	60%	0.27%	0.54%	0.81%	1.08%	1.36%	2.71%	5.42%	8.13%	13.55%	21.69%	27.11%
	70%	0.32%	0.63%	0.95%	1.27%	1.58%	3.16%	6.33%	9.49%	15.81%	25.30%	31.63%
	80%	0.36%	0.72%	1.08%	1.45%	1.81%	3.61%	7.23%	10.84%	18.07%	28.91%	36.14%
	90%	0.41%	0.81%	1.22%	1.63%	2.03%	4.07%	8.13%	12.20%	20.33%	32.53%	40.66%
	100%	0.45%	0.90%	1.36%	1.81%	2.26%	4.52%	9.04%	13.55%	22.59%	36.14%	45.18%

Table 3.172 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Canna and Sanday SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	5	6
	20%	0	0	0	0	1	1	2	3	6	9	12
	30%	0	0	1	1	1	2	3	5	9	14	17
	40%	0	0	1	1	1	2	5	7	12	19	23
	50%	0	1	1	1	1	3	6	9	15	23	29
	60%	0	1	1	1	2	3	7	10	17	28	35
	70%	0	1	1	2	2	4	8	12	20	33	41
	80%	0	1	1	2	2	5	9	14	23	37	47
	90%	1	1	2	2	3	5	10	16	26	42	52
	100%	1	1	2	2	3	6	12	17	29	47	58

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	0	1	2	3	4	7	9
	30%	0	0	0	1	1	1	3	4	6	10	13
	40%	0	0	1	1	1	2	3	5	9	14	17
	50%	0	0	1	1	1	2	4	6	11	17	21
	60%	0	1	1	1	1	3	5	8	13	20	26
	70%	0	1	1	1	1	3	6	9	15	24	30
	80%	0	1	1	1	2	3	7	10	17	27	34
	90%	0	1	1	2	2	4	8	12	19	31	38
	100%	0	1	1	2	2	4	9	13	21	34	43
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	3	4	7	8
	20%	0	0	1	1	1	2	3	5	8	13	17
	30%	0	1	1	1	1	3	5	8	13	20	25
	40%	0	1	1	1	2	3	7	10	17	27	34
	50%	0	1	1	2	2	4	8	13	21	34	42
	60%	1	1	2	2	3	5	10	15	25	40	51
	70%	1	1	2	2	3	6	12	18	30	47	59
	80%	1	1	2	3	3	7	13	20	34	54	67
	90%	1	2	2	3	4	8	15	23	38	61	76
	100%	1	2	3	3	4	8	17	25	42	67	84

Table 3.173 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Canna and Sanday SPA** due to displacement from Morecambe OWF during. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.03%	0.06%	0.09%	0.12%	0.16%	0.31%	0.62%	0.94%	1.56%	2.49%	3.12%
	20%	0.06%	0.12%	0.19%	0.25%	0.31%	0.62%	1.25%	1.87%	3.12%	4.99%	6.24%
	30%	0.09%	0.19%	0.28%	0.37%	0.47%	0.94%	1.87%	2.81%	4.68%	7.48%	9.35%
	40%	0.12%	0.25%	0.37%	0.50%	0.62%	1.25%	2.49%	3.74%	6.24%	9.98%	12.47%
	50%	0.16%	0.31%	0.47%	0.62%	0.78%	1.56%	3.12%	4.68%	7.80%	12.47%	15.59%
	60%	0.19%	0.37%	0.56%	0.75%	0.94%	1.87%	3.74%	5.61%	9.35%	14.97%	18.71%
	70%	0.22%	0.44%	0.65%	0.87%	1.09%	2.18%	4.37%	6.55%	10.91%	17.46%	21.83%
	80%	0.25%	0.50%	0.75%	1.00%	1.25%	2.49%	4.99%	7.48%	12.47%	19.96%	24.95%
	90%	0.28%	0.56%	0.84%	1.12%	1.40%	2.81%	5.61%	8.42%	14.03%	22.45%	28.06%
	100%	0.31%	0.62%	0.94%	1.25%	1.56%	3.12%	6.24%	9.35%	15.59%	24.95%	31.18%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.68%	1.14%	1.83%	2.28%
	20%	0.05%	0.09%	0.14%	0.18%	0.23%	0.46%	0.91%	1.37%	2.28%	3.65%	4.56%
	30%	0.07%	0.14%	0.21%	0.27%	0.34%	0.68%	1.37%	2.05%	3.42%	5.48%	6.85%
	40%	0.09%	0.18%	0.27%	0.37%	0.46%	0.91%	1.83%	2.74%	4.56%	7.30%	9.13%
	50%	0.11%	0.23%	0.34%	0.46%	0.57%	1.14%	2.28%	3.42%	5.71%	9.13%	11.41%
	60%	0.14%	0.27%	0.41%	0.55%	0.68%	1.37%	2.74%	4.11%	6.85%	10.95%	13.69%
	70%	0.16%	0.32%	0.48%	0.64%	0.80%	1.60%	3.19%	4.79%	7.99%	12.78%	15.97%
	80%	0.18%	0.37%	0.55%	0.73%	0.91%	1.83%	3.65%	5.48%	9.13%	14.60%	18.26%
	90%	0.21%	0.41%	0.62%	0.82%	1.03%	2.05%	4.11%	6.16%	10.27%	16.43%	20.54%
	100%	0.23%	0.46%	0.68%	0.91%	1.14%	2.28%	4.56%	6.85%	11.41%	18.26%	22.82%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.05%	0.09%	0.14%	0.18%	0.23%	0.45%	0.90%	1.36%	2.26%	3.61%	4.52%
	20%	0.09%	0.18%	0.27%	0.36%	0.45%	0.90%	1.81%	2.71%	4.52%	7.23%	9.04%
	30%	0.14%	0.27%	0.41%	0.54%	0.68%	1.36%	2.71%	4.07%	6.78%	10.84%	13.55%
	40%	0.18%	0.36%	0.54%	0.72%	0.90%	1.81%	3.61%	5.42%	9.04%	14.46%	18.07%
	50%	0.23%	0.45%	0.68%	0.90%	1.13%	2.26%	4.52%	6.78%	11.29%	18.07%	22.59%
	60%	0.27%	0.54%	0.81%	1.08%	1.36%	2.71%	5.42%	8.13%	13.55%	21.69%	27.11%
	70%	0.32%	0.63%	0.95%	1.27%	1.58%	3.16%	6.33%	9.49%	15.81%	25.30%	31.63%
	80%	0.36%	0.72%	1.08%	1.45%	1.81%	3.61%	7.23%	10.84%	18.07%	28.91%	36.14%
	90%	0.41%	0.81%	1.22%	1.63%	2.03%	4.07%	8.13%	12.20%	20.33%	32.53%	40.66%
	100%	0.45%	0.90%	1.36%	1.81%	2.26%	4.52%	9.04%	13.55%	22.59%	36.14%	45.18%

Table 3.174 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Mingulay and Berneray SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	6	10	15	19
	20%	0	1	1	2	2	4	8	11	19	31	38
	30%	1	1	2	2	3	6	11	17	29	46	57
	40%	1	2	2	3	4	8	15	23	38	61	76
	50%	1	2	3	4	5	10	19	29	48	76	96
	60%	1	2	3	5	6	11	23	34	57	92	115
	70%	1	3	4	5	7	13	27	40	67	107	134
	80%	2	3	5	6	8	15	31	46	76	122	153
	90%	2	3	5	7	9	17	34	52	86	138	172
	100%	2	4	6	8	10	19	38	57	96	153	191

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	1	3	4	7	11	14
	20%	0	1	1	1	1	3	6	8	14	22	28
	30%	0	1	1	2	2	4	8	13	21	34	42
	40%	1	1	2	2	3	6	11	17	28	45	56
	50%	1	1	2	3	3	7	14	21	35	56	70
	60%	1	2	3	3	4	8	17	25	42	67	84
	70%	1	2	3	4	5	10	20	29	49	78	98
	80%	1	2	3	4	6	11	22	34	56	90	112
	90%	1	3	4	5	6	13	25	38	63	101	126
	100%	1	3	4	6	7	14	28	42	70	112	140
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	1	1	3	6	8	14	22	28
	20%	1	1	2	2	3	6	11	17	28	44	55
	30%	1	2	2	3	4	8	17	25	42	67	83
	40%	1	2	3	4	6	11	22	33	55	89	111
	50%	1	3	4	6	7	14	28	42	69	111	139
	60%	2	3	5	7	8	17	33	50	83	133	166
	70%	2	4	6	8	10	19	39	58	97	155	194
	80%	2	4	7	9	11	22	44	67	111	177	222
	90%	2	5	7	10	12	25	50	75	125	200	249
	100%	3	6	8	11	14	28	55	83	139	222	277

Table 3.175 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Mingulay and Berneray SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.45%	0.71%	0.89%
	20%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.53%	0.89%	1.43%	1.78%
	30%	0.03%	0.05%	0.08%	0.11%	0.13%	0.27%	0.53%	0.80%	1.34%	2.14%	2.67%
	40%	0.04%	0.07%	0.11%	0.14%	0.18%	0.36%	0.71%	1.07%	1.78%	2.85%	3.56%
	50%	0.04%	0.09%	0.13%	0.18%	0.22%	0.45%	0.89%	1.34%	2.23%	3.56%	4.45%
	60%	0.05%	0.11%	0.16%	0.21%	0.27%	0.53%	1.07%	1.60%	2.67%	4.28%	5.34%
	70%	0.06%	0.12%	0.19%	0.25%	0.31%	0.62%	1.25%	1.87%	3.12%	4.99%	6.24%
	80%	0.07%	0.14%	0.21%	0.29%	0.36%	0.71%	1.43%	2.14%	3.56%	5.70%	7.13%
	90%	0.08%	0.16%	0.24%	0.32%	0.40%	0.80%	1.60%	2.41%	4.01%	6.41%	8.02%
	100%	0.09%	0.18%	0.27%	0.36%	0.45%	0.89%	1.78%	2.67%	4.45%	7.13%	8.91%

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.52%	0.65%
	20%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.26%	0.39%	0.65%	1.04%	1.30%
	30%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.39%	0.59%	0.98%	1.56%	1.96%
	40%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.52%	0.78%	1.30%	2.09%	2.61%
	50%	0.03%	0.07%	0.10%	0.13%	0.16%	0.33%	0.65%	0.98%	1.63%	2.61%	3.26%
	60%	0.04%	0.08%	0.12%	0.16%	0.20%	0.39%	0.78%	1.17%	1.96%	3.13%	3.91%
	70%	0.05%	0.09%	0.14%	0.18%	0.23%	0.46%	0.91%	1.37%	2.28%	3.65%	4.56%
	80%	0.05%	0.10%	0.16%	0.21%	0.26%	0.52%	1.04%	1.56%	2.61%	4.17%	5.22%
	90%	0.06%	0.12%	0.18%	0.23%	0.29%	0.59%	1.17%	1.76%	2.93%	4.69%	5.87%
	100%	0.07%	0.13%	0.20%	0.26%	0.33%	0.65%	1.30%	1.96%	3.26%	5.22%	6.52%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.65%	1.03%	1.29%
	20%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.52%	0.77%	1.29%	2.07%	2.58%
	30%	0.04%	0.08%	0.12%	0.15%	0.19%	0.39%	0.77%	1.16%	1.94%	3.10%	3.87%
	40%	0.05%	0.10%	0.15%	0.21%	0.26%	0.52%	1.03%	1.55%	2.58%	4.13%	5.16%
	50%	0.06%	0.13%	0.19%	0.26%	0.32%	0.65%	1.29%	1.94%	3.23%	5.16%	6.45%
	60%	0.08%	0.15%	0.23%	0.31%	0.39%	0.77%	1.55%	2.32%	3.87%	6.20%	7.74%
	70%	0.09%	0.18%	0.27%	0.36%	0.45%	0.90%	1.81%	2.71%	4.52%	7.23%	9.03%
	80%	0.10%	0.21%	0.31%	0.41%	0.52%	1.03%	2.07%	3.10%	5.16%	8.26%	10.33%
	90%	0.12%	0.23%	0.35%	0.46%	0.58%	1.16%	2.32%	3.48%	5.81%	9.29%	11.62%
	100%	0.13%	0.26%	0.39%	0.52%	0.65%	1.29%	2.58%	3.87%	6.45%	10.33%	12.91%

Table 3.176 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Mingulay and Berneray SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	6	10	15	19
	20%	0	1	1	2	2	4	8	11	19	31	38
	30%	1	1	2	2	3	6	11	17	29	46	57
	40%	1	2	2	3	4	8	15	23	38	61	76
	50%	1	2	3	4	5	10	19	29	48	76	96
	60%	1	2	3	5	6	11	23	34	57	92	115
	70%	1	3	4	5	7	13	27	40	67	107	134
	80%	2	3	5	6	8	15	31	46	76	122	153
	90%	2	3	5	7	9	17	34	52	86	138	172
	100%	2	4	6	8	10	19	38	57	96	153	191

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	1	3	4	7	11	14
	20%	0	1	1	1	1	3	6	8	14	22	28
	30%	0	1	1	2	2	4	8	13	21	34	42
	40%	1	1	2	2	3	6	11	17	28	45	56
	50%	1	1	2	3	3	7	14	21	35	56	70
	60%	1	2	3	3	4	8	17	25	42	67	84
	70%	1	2	3	4	5	10	20	29	49	78	98
	80%	1	2	3	4	6	11	22	34	56	90	112
	90%	1	3	4	5	6	13	25	38	63	101	126
	100%	1	3	4	6	7	14	28	42	70	112	140
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	1	1	3	6	8	14	22	28
	20%	1	1	2	2	3	6	11	17	28	44	55
	30%	1	2	2	3	4	8	17	25	42	67	83
	40%	1	2	3	4	6	11	22	33	55	89	111
	50%	1	3	4	6	7	14	28	42	69	111	139
	60%	2	3	5	7	8	17	33	50	83	133	166
	70%	2	4	6	8	10	19	39	58	97	155	194
	80%	2	4	7	9	11	22	44	67	111	177	222
	90%	2	5	7	10	12	25	50	75	125	200	249
	100%	3	6	8	11	14	28	55	83	139	222	277

Table 3.177 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Mingulay and Berneray SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.45%	0.71%	0.89%
	20%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.53%	0.89%	1.43%	1.78%
	30%	0.03%	0.05%	0.08%	0.11%	0.13%	0.27%	0.53%	0.80%	1.34%	2.14%	2.67%
	40%	0.04%	0.07%	0.11%	0.14%	0.18%	0.36%	0.71%	1.07%	1.78%	2.85%	3.56%
	50%	0.04%	0.09%	0.13%	0.18%	0.22%	0.45%	0.89%	1.34%	2.23%	3.56%	4.45%
	60%	0.05%	0.11%	0.16%	0.21%	0.27%	0.53%	1.07%	1.60%	2.67%	4.28%	5.34%
	70%	0.06%	0.12%	0.19%	0.25%	0.31%	0.62%	1.25%	1.87%	3.12%	4.99%	6.24%
	80%	0.07%	0.14%	0.21%	0.29%	0.36%	0.71%	1.43%	2.14%	3.56%	5.70%	7.13%
	90%	0.08%	0.16%	0.24%	0.32%	0.40%	0.80%	1.60%	2.41%	4.01%	6.41%	8.02%
	100%	0.09%	0.18%	0.27%	0.36%	0.45%	0.89%	1.78%	2.67%	4.45%	7.13%	8.91%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.52%	0.65%
	20%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.26%	0.39%	0.65%	1.04%	1.30%
	30%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.39%	0.59%	0.98%	1.56%	1.96%
	40%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.52%	0.78%	1.30%	2.09%	2.61%
	50%	0.03%	0.07%	0.10%	0.13%	0.16%	0.33%	0.65%	0.98%	1.63%	2.61%	3.26%
	60%	0.04%	0.08%	0.12%	0.16%	0.20%	0.39%	0.78%	1.17%	1.96%	3.13%	3.91%
	70%	0.05%	0.09%	0.14%	0.18%	0.23%	0.46%	0.91%	1.37%	2.28%	3.65%	4.56%
	80%	0.05%	0.10%	0.16%	0.21%	0.26%	0.52%	1.04%	1.56%	2.61%	4.17%	5.22%
	90%	0.06%	0.12%	0.18%	0.23%	0.29%	0.59%	1.17%	1.76%	2.93%	4.69%	5.87%
	100%	0.07%	0.13%	0.20%	0.26%	0.33%	0.65%	1.30%	1.96%	3.26%	5.22%	6.52%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.65%	1.03%	1.29%
	20%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.52%	0.77%	1.29%	2.07%	2.58%
	30%	0.04%	0.08%	0.12%	0.15%	0.19%	0.39%	0.77%	1.16%	1.94%	3.10%	3.87%
	40%	0.05%	0.10%	0.15%	0.21%	0.26%	0.52%	1.03%	1.55%	2.58%	4.13%	5.16%
	50%	0.06%	0.13%	0.19%	0.26%	0.32%	0.65%	1.29%	1.94%	3.23%	5.16%	6.45%
	60%	0.08%	0.15%	0.23%	0.31%	0.39%	0.77%	1.55%	2.32%	3.87%	6.20%	7.74%
	70%	0.09%	0.18%	0.27%	0.36%	0.45%	0.90%	1.81%	2.71%	4.52%	7.23%	9.03%
	80%	0.10%	0.21%	0.31%	0.41%	0.52%	1.03%	2.07%	3.10%	5.16%	8.26%	10.33%
	90%	0.12%	0.23%	0.35%	0.46%	0.58%	1.16%	2.32%	3.48%	5.81%	9.29%	11.62%
	100%	0.13%	0.26%	0.39%	0.52%	0.65%	1.29%	2.58%	3.87%	6.45%	10.33%	12.91%

Table 3.178 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Shiant Isles SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	4	6	7
	20%	0	0	0	1	1	1	3	4	7	12	15
	30%	0	0	1	1	1	2	4	7	11	18	22
	40%	0	1	1	1	1	3	6	9	15	24	30
	50%	0	1	1	1	2	4	7	11	19	30	37
	60%	0	1	1	2	2	4	9	13	22	36	45
	70%	1	1	2	2	3	5	10	16	26	42	52
	80%	1	1	2	2	3	6	12	18	30	48	60
	90%	1	1	2	3	3	7	13	20	34	54	67
	100%	1	1	2	3	4	7	15	22	37	60	75

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	4	5
	20%	0	0	0	0	1	1	2	3	5	9	11
	30%	0	0	0	1	1	2	3	5	8	13	16
	40%	0	0	1	1	1	2	4	7	11	18	22
	50%	0	1	1	1	1	3	5	8	14	22	27
	60%	0	1	1	1	2	3	7	10	16	26	33
	70%	0	1	1	2	2	4	8	12	19	31	38
	80%	0	1	1	2	2	4	9	13	22	35	44
	90%	0	1	1	2	2	5	10	15	25	39	49
	100%	1	1	2	2	3	5	11	16	27	44	55
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	1	1	2	3	5	9	11
	20%	0	0	1	1	1	2	4	7	11	17	22
	30%	0	1	1	1	2	3	7	10	16	26	33
	40%	0	1	1	2	2	4	9	13	22	35	43
	50%	1	1	2	2	3	5	11	16	27	43	54
	60%	1	1	2	3	3	7	13	20	33	52	65
	70%	1	2	2	3	4	8	15	23	38	61	76
	80%	1	2	3	3	4	9	17	26	43	69	87
	90%	1	2	3	4	5	10	20	29	49	78	98
	100%	1	2	3	4	5	11	22	33	54	87	108

Table 3.179 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.03%	0.04%	0.05%	0.07%	0.14%	0.27%	0.41%	0.68%	1.08%	1.35%
	20%	0.03%	0.05%	0.08%	0.11%	0.14%	0.27%	0.54%	0.81%	1.35%	2.17%	2.71%
	30%	0.04%	0.08%	0.12%	0.16%	0.20%	0.41%	0.81%	1.22%	2.03%	3.25%	4.06%
	40%	0.05%	0.11%	0.16%	0.22%	0.27%	0.54%	1.08%	1.63%	2.71%	4.34%	5.42%
	50%	0.07%	0.14%	0.20%	0.27%	0.34%	0.68%	1.35%	2.03%	3.39%	5.42%	6.77%
	60%	0.08%	0.16%	0.24%	0.33%	0.41%	0.81%	1.63%	2.44%	4.06%	6.50%	8.13%
	70%	0.09%	0.19%	0.28%	0.38%	0.47%	0.95%	1.90%	2.85%	4.74%	7.59%	9.48%
	80%	0.11%	0.22%	0.33%	0.43%	0.54%	1.08%	2.17%	3.25%	5.42%	8.67%	10.84%
	90%	0.12%	0.24%	0.37%	0.49%	0.61%	1.22%	2.44%	3.66%	6.10%	9.76%	12.19%
	100%	0.14%	0.27%	0.41%	0.54%	0.68%	1.35%	2.71%	4.06%	6.77%	10.84%	13.55%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.79%	0.99%
	20%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.40%	0.59%	0.99%	1.59%	1.98%
	30%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.59%	0.89%	1.49%	2.38%	2.97%
	40%	0.04%	0.08%	0.12%	0.16%	0.20%	0.40%	0.79%	1.19%	1.98%	3.17%	3.97%
	50%	0.05%	0.10%	0.15%	0.20%	0.25%	0.50%	0.99%	1.49%	2.48%	3.97%	4.96%
	60%	0.06%	0.12%	0.18%	0.24%	0.30%	0.59%	1.19%	1.78%	2.97%	4.76%	5.95%
	70%	0.07%	0.14%	0.21%	0.28%	0.35%	0.69%	1.39%	2.08%	3.47%	5.55%	6.94%
	80%	0.08%	0.16%	0.24%	0.32%	0.40%	0.79%	1.59%	2.38%	3.97%	6.35%	7.93%
	90%	0.09%	0.18%	0.27%	0.36%	0.45%	0.89%	1.78%	2.68%	4.46%	7.14%	8.92%
	100%	0.10%	0.20%	0.30%	0.40%	0.50%	0.99%	1.98%	2.97%	4.96%	7.93%	9.92%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.39%	0.59%	0.98%	1.57%	1.96%
	20%	0.04%	0.08%	0.12%	0.16%	0.20%	0.39%	0.79%	1.18%	1.96%	3.14%	3.93%
	30%	0.06%	0.12%	0.18%	0.24%	0.29%	0.59%	1.18%	1.77%	2.94%	4.71%	5.89%
	40%	0.08%	0.16%	0.24%	0.31%	0.39%	0.79%	1.57%	2.36%	3.93%	6.28%	7.85%
	50%	0.10%	0.20%	0.29%	0.39%	0.49%	0.98%	1.96%	2.94%	4.91%	7.85%	9.82%
	60%	0.12%	0.24%	0.35%	0.47%	0.59%	1.18%	2.36%	3.53%	5.89%	9.42%	11.78%
	70%	0.14%	0.27%	0.41%	0.55%	0.69%	1.37%	2.75%	4.12%	6.87%	10.99%	13.74%
	80%	0.16%	0.31%	0.47%	0.63%	0.79%	1.57%	3.14%	4.71%	7.85%	12.56%	15.71%
	90%	0.18%	0.35%	0.53%	0.71%	0.88%	1.77%	3.53%	5.30%	8.83%	14.14%	17.67%
	100%	0.20%	0.39%	0.59%	0.79%	0.98%	1.96%	3.93%	5.89%	9.82%	15.71%	19.63%

Table 3.180 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Shiant Isles SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	4	6	7
	20%	0	0	0	1	1	1	3	4	7	12	15
	30%	0	0	1	1	1	2	4	7	11	18	22
	40%	0	1	1	1	1	3	6	9	15	24	30
	50%	0	1	1	1	2	4	7	11	19	30	37
	60%	0	1	1	2	2	4	9	13	22	36	45
	70%	1	1	2	2	3	5	10	16	26	42	52
	80%	1	1	2	2	3	6	12	18	30	48	60
	90%	1	1	2	3	3	7	13	20	34	54	67
	100%	1	1	2	3	4	7	15	22	37	60	75

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	4	5
	20%	0	0	0	0	1	1	2	3	5	9	11
	30%	0	0	0	1	1	2	3	5	8	13	16
	40%	0	0	1	1	1	2	4	7	11	18	22
	50%	0	1	1	1	1	3	5	8	14	22	27
	60%	0	1	1	1	2	3	7	10	16	26	33
	70%	0	1	1	2	2	4	8	12	19	31	38
	80%	0	1	1	2	2	4	9	13	22	35	44
	90%	0	1	1	2	2	5	10	15	25	39	49
	100%	1	1	2	2	3	5	11	16	27	44	55
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	1	1	2	3	5	9	11
	20%	0	0	1	1	1	2	4	7	11	17	22
	30%	0	1	1	1	2	3	7	10	16	26	33
	40%	0	1	1	2	2	4	9	13	22	35	43
	50%	1	1	2	2	3	5	11	16	27	43	54
	60%	1	1	2	3	3	7	13	20	33	52	65
	70%	1	2	2	3	4	8	15	23	38	61	76
	80%	1	2	3	3	4	9	17	26	43	69	87
	90%	1	2	3	4	5	10	20	29	49	78	98
	100%	1	2	3	4	5	11	22	33	54	87	108

Table 3.181 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.03%	0.04%	0.05%	0.07%	0.14%	0.27%	0.41%	0.68%	1.08%	1.35%
	20%	0.03%	0.05%	0.08%	0.11%	0.14%	0.27%	0.54%	0.81%	1.35%	2.17%	2.71%
	30%	0.04%	0.08%	0.12%	0.16%	0.20%	0.41%	0.81%	1.22%	2.03%	3.25%	4.06%
	40%	0.05%	0.11%	0.16%	0.22%	0.27%	0.54%	1.08%	1.63%	2.71%	4.34%	5.42%
	50%	0.07%	0.14%	0.20%	0.27%	0.34%	0.68%	1.35%	2.03%	3.39%	5.42%	6.77%
	60%	0.08%	0.16%	0.24%	0.33%	0.41%	0.81%	1.63%	2.44%	4.06%	6.50%	8.13%
	70%	0.09%	0.19%	0.28%	0.38%	0.47%	0.95%	1.90%	2.85%	4.74%	7.59%	9.48%
	80%	0.11%	0.22%	0.33%	0.43%	0.54%	1.08%	2.17%	3.25%	5.42%	8.67%	10.84%
	90%	0.12%	0.24%	0.37%	0.49%	0.61%	1.22%	2.44%	3.66%	6.10%	9.76%	12.19%
	100%	0.14%	0.27%	0.41%	0.54%	0.68%	1.35%	2.71%	4.06%	6.77%	10.84%	13.55%



LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.79%	0.99%
	20%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.40%	0.59%	0.99%	1.59%	1.98%
	30%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.59%	0.89%	1.49%	2.38%	2.97%
	40%	0.04%	0.08%	0.12%	0.16%	0.20%	0.40%	0.79%	1.19%	1.98%	3.17%	3.97%
	50%	0.05%	0.10%	0.15%	0.20%	0.25%	0.50%	0.99%	1.49%	2.48%	3.97%	4.96%
	60%	0.06%	0.12%	0.18%	0.24%	0.30%	0.59%	1.19%	1.78%	2.97%	4.76%	5.95%
	70%	0.07%	0.14%	0.21%	0.28%	0.35%	0.69%	1.39%	2.08%	3.47%	5.55%	6.94%
	80%	0.08%	0.16%	0.24%	0.32%	0.40%	0.79%	1.59%	2.38%	3.97%	6.35%	7.93%
	90%	0.09%	0.18%	0.27%	0.36%	0.45%	0.89%	1.78%	2.68%	4.46%	7.14%	8.92%
	100%	0.10%	0.20%	0.30%	0.40%	0.50%	0.99%	1.98%	2.97%	4.96%	7.93%	9.92%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.39%	0.59%	0.98%	1.57%	1.96%
	20%	0.04%	0.08%	0.12%	0.16%	0.20%	0.39%	0.79%	1.18%	1.96%	3.14%	3.93%
	30%	0.06%	0.12%	0.18%	0.24%	0.29%	0.59%	1.18%	1.77%	2.94%	4.71%	5.89%
	40%	0.08%	0.16%	0.24%	0.31%	0.39%	0.79%	1.57%	2.36%	3.93%	6.28%	7.85%
	50%	0.10%	0.20%	0.29%	0.39%	0.49%	0.98%	1.96%	2.94%	4.91%	7.85%	9.82%
	60%	0.12%	0.24%	0.35%	0.47%	0.59%	1.18%	2.36%	3.53%	5.89%	9.42%	11.78%
	70%	0.14%	0.27%	0.41%	0.55%	0.69%	1.37%	2.75%	4.12%	6.87%	10.99%	13.74%
	80%	0.16%	0.31%	0.47%	0.63%	0.79%	1.57%	3.14%	4.71%	7.85%	12.56%	15.71%
	90%	0.18%	0.35%	0.53%	0.71%	0.88%	1.77%	3.53%	5.30%	8.83%	14.14%	17.67%
	100%	0.20%	0.39%	0.59%	0.79%	0.98%	1.96%	3.93%	5.89%	9.82%	15.71%	19.63%

Table 3.182 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Handa SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	2	3	5	10	16	26	42	52
	20%	1	2	3	4	5	10	21	31	52	84	105
	30%	2	3	5	6	8	16	31	47	79	126	157
	40%	2	4	6	8	10	21	42	63	105	168	210
	50%	3	5	8	10	13	26	52	79	131	210	262
	60%	3	6	9	13	16	31	63	94	157	251	314
	70%	4	7	11	15	18	37	73	110	183	293	367
	80%	4	8	13	17	21	42	84	126	210	335	419
	90%	5	9	14	19	24	47	94	141	236	377	471
	100%	5	10	16	21	26	52	105	157	262	419	524

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	2	2	4	8	12	19	31	38
	20%	1	2	2	3	4	8	15	23	38	61	77
	30%	1	2	3	5	6	12	23	35	58	92	115
	40%	2	3	5	6	8	15	31	46	77	123	153
	50%	2	4	6	8	10	19	38	58	96	153	192
	60%	2	5	7	9	12	23	46	69	115	184	230
	70%	3	5	8	11	13	27	54	81	134	215	268
	80%	3	6	9	12	15	31	61	92	153	245	307
	90%	3	7	10	14	17	35	69	104	173	276	345
	100%	4	8	12	15	19	38	77	115	192	307	383
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	2	2	3	4	8	15	23	38	61	76
	20%	2	3	5	6	8	15	30	46	76	121	152
	30%	2	5	7	9	11	23	46	68	114	182	228
	40%	3	6	9	12	15	30	61	91	152	243	304
	50%	4	8	11	15	19	38	76	114	190	304	379
	60%	5	9	14	18	23	46	91	137	228	364	455
	70%	5	11	16	21	27	53	106	159	266	425	531
	80%	6	12	18	24	30	61	121	182	304	486	607
	90%	7	14	20	27	34	68	137	205	342	546	683
	100%	8	15	23	30	38	76	152	228	379	607	759

Table 3.183 MLCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Handa SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.25%	0.38%	0.63%	1.00%	1.25%
	20%	0.03%	0.05%	0.08%	0.10%	0.13%	0.25%	0.50%	0.75%	1.25%	2.01%	2.51%
	30%	0.04%	0.08%	0.11%	0.15%	0.19%	0.38%	0.75%	1.13%	1.88%	3.01%	3.76%
	40%	0.05%	0.10%	0.15%	0.20%	0.25%	0.50%	1.00%	1.50%	2.51%	4.01%	5.01%
	50%	0.06%	0.13%	0.19%	0.25%	0.31%	0.63%	1.25%	1.88%	3.13%	5.01%	6.27%
	60%	0.08%	0.15%	0.23%	0.30%	0.38%	0.75%	1.50%	2.26%	3.76%	6.02%	7.52%
	70%	0.09%	0.18%	0.26%	0.35%	0.44%	0.88%	1.75%	2.63%	4.39%	7.02%	8.77%
	80%	0.10%	0.20%	0.30%	0.40%	0.50%	1.00%	2.01%	3.01%	5.01%	8.02%	10.03%
	90%	0.11%	0.23%	0.34%	0.45%	0.56%	1.13%	2.26%	3.38%	5.64%	9.02%	11.28%
	100%	0.13%	0.25%	0.38%	0.50%	0.63%	1.25%	2.51%	3.76%	6.27%	10.03%	12.53%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.28%	0.46%	0.73%	0.92%
	20%	0.02%	0.04%	0.06%	0.07%	0.09%	0.18%	0.37%	0.55%	0.92%	1.47%	1.83%
	30%	0.03%	0.06%	0.08%	0.11%	0.14%	0.28%	0.55%	0.83%	1.38%	2.20%	2.75%
	40%	0.04%	0.07%	0.11%	0.15%	0.18%	0.37%	0.73%	1.10%	1.83%	2.93%	3.67%
	50%	0.05%	0.09%	0.14%	0.18%	0.23%	0.46%	0.92%	1.38%	2.29%	3.67%	4.59%
	60%	0.06%	0.11%	0.17%	0.22%	0.28%	0.55%	1.10%	1.65%	2.75%	4.40%	5.50%
	70%	0.06%	0.13%	0.19%	0.26%	0.32%	0.64%	1.28%	1.93%	3.21%	5.14%	6.42%
	80%	0.07%	0.15%	0.22%	0.29%	0.37%	0.73%	1.47%	2.20%	3.67%	5.87%	7.34%
	90%	0.08%	0.17%	0.25%	0.33%	0.41%	0.83%	1.65%	2.48%	4.13%	6.60%	8.25%
	100%	0.09%	0.18%	0.28%	0.37%	0.46%	0.92%	1.83%	2.75%	4.59%	7.34%	9.17%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.54%	0.91%	1.45%	1.82%
	20%	0.04%	0.07%	0.11%	0.15%	0.18%	0.36%	0.73%	1.09%	1.82%	2.91%	3.63%
	30%	0.05%	0.11%	0.16%	0.22%	0.27%	0.54%	1.09%	1.63%	2.72%	4.36%	5.45%
	40%	0.07%	0.15%	0.22%	0.29%	0.36%	0.73%	1.45%	2.18%	3.63%	5.81%	7.26%
	50%	0.09%	0.18%	0.27%	0.36%	0.45%	0.91%	1.82%	2.72%	4.54%	7.26%	9.08%
	60%	0.11%	0.22%	0.33%	0.44%	0.54%	1.09%	2.18%	3.27%	5.45%	8.72%	10.89%
	70%	0.13%	0.25%	0.38%	0.51%	0.64%	1.27%	2.54%	3.81%	6.36%	10.17%	12.71%
	80%	0.15%	0.29%	0.44%	0.58%	0.73%	1.45%	2.91%	4.36%	7.26%	11.62%	14.53%
	90%	0.16%	0.33%	0.49%	0.65%	0.82%	1.63%	3.27%	4.90%	8.17%	13.07%	16.34%
	100%	0.18%	0.36%	0.54%	0.73%	0.91%	1.82%	3.63%	5.45%	9.08%	14.53%	18.16%

Table 3.184 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Handa SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	2	3	5	10	16	26	42	52
	20%	1	2	3	4	5	10	21	31	52	84	105
	30%	2	3	5	6	8	16	31	47	79	126	157
	40%	2	4	6	8	10	21	42	63	105	168	210
	50%	3	5	8	10	13	26	52	79	131	210	262
	60%	3	6	9	13	16	31	63	94	157	251	314
	70%	4	7	11	15	18	37	73	110	183	293	367
	80%	4	8	13	17	21	42	84	126	210	335	419
	90%	5	9	14	19	24	47	94	141	236	377	471
	100%	5	10	16	21	26	52	105	157	262	419	524

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	2	2	4	8	12	19	31	38
	20%	1	2	2	3	4	8	15	23	38	61	77
	30%	1	2	3	5	6	12	23	35	58	92	115
	40%	2	3	5	6	8	15	31	46	77	123	153
	50%	2	4	6	8	10	19	38	58	96	153	192
	60%	2	5	7	9	12	23	46	69	115	184	230
	70%	3	5	8	11	13	27	54	81	134	215	268
	80%	3	6	9	12	15	31	61	92	153	245	307
	90%	3	7	10	14	17	35	69	104	173	276	345
	100%	4	8	12	15	19	38	77	115	192	307	383
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	2	2	3	4	8	15	23	38	61	76
	20%	2	3	5	6	8	15	30	46	76	121	152
	30%	2	5	7	9	11	23	46	68	114	182	228
	40%	3	6	9	12	15	30	61	91	152	243	304
	50%	4	8	11	15	19	38	76	114	190	304	379
	60%	5	9	14	18	23	46	91	137	228	364	455
	70%	5	11	16	21	27	53	106	159	266	425	531
	80%	6	12	18	24	30	61	121	182	304	486	607
	90%	7	14	20	27	34	68	137	205	342	546	683
	100%	8	15	23	30	38	76	152	228	379	607	759

Table 3.185 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Handa SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.25%	0.38%	0.63%	1.00%	1.25%
	20%	0.03%	0.05%	0.08%	0.10%	0.13%	0.25%	0.50%	0.75%	1.25%	2.01%	2.51%
	30%	0.04%	0.08%	0.11%	0.15%	0.19%	0.38%	0.75%	1.13%	1.88%	3.01%	3.76%
	40%	0.05%	0.10%	0.15%	0.20%	0.25%	0.50%	1.00%	1.50%	2.51%	4.01%	5.01%
	50%	0.06%	0.13%	0.19%	0.25%	0.31%	0.63%	1.25%	1.88%	3.13%	5.01%	6.27%
	60%	0.08%	0.15%	0.23%	0.30%	0.38%	0.75%	1.50%	2.26%	3.76%	6.02%	7.52%
	70%	0.09%	0.18%	0.26%	0.35%	0.44%	0.88%	1.75%	2.63%	4.39%	7.02%	8.77%
	80%	0.10%	0.20%	0.30%	0.40%	0.50%	1.00%	2.01%	3.01%	5.01%	8.02%	10.03%
	90%	0.11%	0.23%	0.34%	0.45%	0.56%	1.13%	2.26%	3.38%	5.64%	9.02%	11.28%
	100%	0.13%	0.25%	0.38%	0.50%	0.63%	1.25%	2.51%	3.76%	6.27%	10.03%	12.53%



LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.28%	0.46%	0.73%	0.92%
	20%	0.02%	0.04%	0.06%	0.07%	0.09%	0.18%	0.37%	0.55%	0.92%	1.47%	1.83%
	30%	0.03%	0.06%	0.08%	0.11%	0.14%	0.28%	0.55%	0.83%	1.38%	2.20%	2.75%
	40%	0.04%	0.07%	0.11%	0.15%	0.18%	0.37%	0.73%	1.10%	1.83%	2.93%	3.67%
	50%	0.05%	0.09%	0.14%	0.18%	0.23%	0.46%	0.92%	1.38%	2.29%	3.67%	4.59%
	60%	0.06%	0.11%	0.17%	0.22%	0.28%	0.55%	1.10%	1.65%	2.75%	4.40%	5.50%
	70%	0.06%	0.13%	0.19%	0.26%	0.32%	0.64%	1.28%	1.93%	3.21%	5.14%	6.42%
	80%	0.07%	0.15%	0.22%	0.29%	0.37%	0.73%	1.47%	2.20%	3.67%	5.87%	7.34%
	90%	0.08%	0.17%	0.25%	0.33%	0.41%	0.83%	1.65%	2.48%	4.13%	6.60%	8.25%
	100%	0.09%	0.18%	0.28%	0.37%	0.46%	0.92%	1.83%	2.75%	4.59%	7.34%	9.17%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.54%	0.91%	1.45%	1.82%
	20%	0.04%	0.07%	0.11%	0.15%	0.18%	0.36%	0.73%	1.09%	1.82%	2.91%	3.63%
	30%	0.05%	0.11%	0.16%	0.22%	0.27%	0.54%	1.09%	1.63%	2.72%	4.36%	5.45%
	40%	0.07%	0.15%	0.22%	0.29%	0.36%	0.73%	1.45%	2.18%	3.63%	5.81%	7.26%
	50%	0.09%	0.18%	0.27%	0.36%	0.45%	0.91%	1.82%	2.72%	4.54%	7.26%	9.08%
	60%	0.11%	0.22%	0.33%	0.44%	0.54%	1.09%	2.18%	3.27%	5.45%	8.72%	10.89%
	70%	0.13%	0.25%	0.38%	0.51%	0.64%	1.27%	2.54%	3.81%	6.36%	10.17%	12.71%
	80%	0.15%	0.29%	0.44%	0.58%	0.73%	1.45%	2.91%	4.36%	7.26%	11.62%	14.53%
	90%	0.16%	0.33%	0.49%	0.65%	0.82%	1.63%	3.27%	4.90%	8.17%	13.07%	16.34%
	100%	0.18%	0.36%	0.54%	0.73%	0.91%	1.82%	3.63%	5.45%	9.08%	14.53%	18.16%

Table 3.186 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **St Kilda SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	6	11	17	22
	20%	0	1	1	2	2	4	9	13	22	35	43
	30%	1	1	2	3	3	6	13	19	32	52	65
	40%	1	2	3	3	4	9	17	26	43	69	86
	50%	1	2	3	4	5	11	22	32	54	86	108
	60%	1	3	4	5	6	13	26	39	65	104	130
	70%	2	3	5	6	8	15	30	45	76	121	151
	80%	2	3	5	7	9	17	35	52	86	138	173
	90%	2	4	6	8	10	19	39	58	97	156	195
	100%	2	4	6	9	11	22	43	65	108	173	216

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	2	3	5	8	13	16
	20%	0	1	1	1	2	3	6	9	16	25	32
	30%	0	1	1	2	2	5	9	14	24	38	47
	40%	1	1	2	3	3	6	13	19	32	51	63
	50%	1	2	2	3	4	8	16	24	40	63	79
	60%	1	2	3	4	5	9	19	28	47	76	95
	70%	1	2	3	4	6	11	22	33	55	89	111
	80%	1	3	4	5	6	13	25	38	63	101	127
	90%	1	3	4	6	7	14	28	43	71	114	142
	100%	2	3	5	6	8	16	32	47	79	127	158
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	1	2	3	6	9	16	25	31
	20%	1	1	2	3	3	6	13	19	31	50	63
	30%	1	2	3	4	5	9	19	28	47	75	94
	40%	1	3	4	5	6	13	25	38	63	100	125
	50%	2	3	5	6	8	16	31	47	78	125	157
	60%	2	4	6	8	9	19	38	56	94	150	188
	70%	2	4	7	9	11	22	44	66	110	175	219
	80%	3	5	8	10	13	25	50	75	125	200	251
	90%	3	6	8	11	14	28	56	85	141	226	282
	100%	3	6	9	13	16	31	63	94	157	251	313

Table 3.187 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.56%	0.90%	1.13%
	20%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.45%	0.68%	1.13%	1.81%	2.26%
	30%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.68%	1.02%	1.69%	2.71%	3.39%
	40%	0.05%	0.09%	0.14%	0.18%	0.23%	0.45%	0.90%	1.35%	2.26%	3.61%	4.51%
	50%	0.06%	0.11%	0.17%	0.23%	0.28%	0.56%	1.13%	1.69%	2.82%	4.51%	5.64%
	60%	0.07%	0.14%	0.20%	0.27%	0.34%	0.68%	1.35%	2.03%	3.39%	5.42%	6.77%
	70%	0.08%	0.16%	0.24%	0.32%	0.40%	0.79%	1.58%	2.37%	3.95%	6.32%	7.90%
	80%	0.09%	0.18%	0.27%	0.36%	0.45%	0.90%	1.81%	2.71%	4.51%	7.22%	9.03%
	90%	0.10%	0.20%	0.30%	0.41%	0.51%	1.02%	2.03%	3.05%	5.08%	8.13%	10.16%
	100%	0.11%	0.23%	0.34%	0.45%	0.56%	1.13%	2.26%	3.39%	5.64%	9.03%	11.29%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.17%	0.25%	0.41%	0.66%	0.83%
	20%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.33%	0.50%	0.83%	1.32%	1.65%
	30%	0.02%	0.05%	0.07%	0.10%	0.12%	0.25%	0.50%	0.74%	1.24%	1.98%	2.48%
	40%	0.03%	0.07%	0.10%	0.13%	0.17%	0.33%	0.66%	0.99%	1.65%	2.64%	3.30%
	50%	0.04%	0.08%	0.12%	0.17%	0.21%	0.41%	0.83%	1.24%	2.07%	3.30%	4.13%
	60%	0.05%	0.10%	0.15%	0.20%	0.25%	0.50%	0.99%	1.49%	2.48%	3.96%	4.96%
	70%	0.06%	0.12%	0.17%	0.23%	0.29%	0.58%	1.16%	1.73%	2.89%	4.63%	5.78%
	80%	0.07%	0.13%	0.20%	0.26%	0.33%	0.66%	1.32%	1.98%	3.30%	5.29%	6.61%
	90%	0.07%	0.15%	0.22%	0.30%	0.37%	0.74%	1.49%	2.23%	3.72%	5.95%	7.43%
	100%	0.08%	0.17%	0.25%	0.33%	0.41%	0.83%	1.65%	2.48%	4.13%	6.61%	8.26%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.03%	0.05%	0.07%	0.08%	0.16%	0.33%	0.49%	0.82%	1.31%	1.64%
	20%	0.03%	0.07%	0.10%	0.13%	0.16%	0.33%	0.65%	0.98%	1.64%	2.62%	3.27%
	30%	0.05%	0.10%	0.15%	0.20%	0.25%	0.49%	0.98%	1.47%	2.45%	3.92%	4.91%
	40%	0.07%	0.13%	0.20%	0.26%	0.33%	0.65%	1.31%	1.96%	3.27%	5.23%	6.54%
	50%	0.08%	0.16%	0.25%	0.33%	0.41%	0.82%	1.64%	2.45%	4.09%	6.54%	8.18%
	60%	0.10%	0.20%	0.29%	0.39%	0.49%	0.98%	1.96%	2.94%	4.91%	7.85%	9.81%
	70%	0.11%	0.23%	0.34%	0.46%	0.57%	1.14%	2.29%	3.43%	5.72%	9.16%	11.45%
	80%	0.13%	0.26%	0.39%	0.52%	0.65%	1.31%	2.62%	3.92%	6.54%	10.47%	13.08%
	90%	0.15%	0.29%	0.44%	0.59%	0.74%	1.47%	2.94%	4.42%	7.36%	11.77%	14.72%
	100%	0.16%	0.33%	0.49%	0.65%	0.82%	1.64%	3.27%	4.91%	8.18%	13.08%	16.35%

Table 3.188 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **St Kilda SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	6	11	17	22
	20%	0	1	1	2	2	4	9	13	22	35	43
	30%	1	1	2	3	3	6	13	19	32	52	65
	40%	1	2	3	3	4	9	17	26	43	69	86
	50%	1	2	3	4	5	11	22	32	54	86	108
	60%	1	3	4	5	6	13	26	39	65	104	130
	70%	2	3	5	6	8	15	30	45	76	121	151
	80%	2	3	5	7	9	17	35	52	86	138	173
	90%	2	4	6	8	10	19	39	58	97	156	195
	100%	2	4	6	9	11	22	43	65	108	173	216

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	2	3	5	8	13	16
	20%	0	1	1	1	2	3	6	9	16	25	32
	30%	0	1	1	2	2	5	9	14	24	38	47
	40%	1	1	2	3	3	6	13	19	32	51	63
	50%	1	2	2	3	4	8	16	24	40	63	79
	60%	1	2	3	4	5	9	19	28	47	76	95
	70%	1	2	3	4	6	11	22	33	55	89	111
	80%	1	3	4	5	6	13	25	38	63	101	127
	90%	1	3	4	6	7	14	28	43	71	114	142
	100%	2	3	5	6	8	16	32	47	79	127	158
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	1	2	3	6	9	16	25	31
	20%	1	1	2	3	3	6	13	19	31	50	63
	30%	1	2	3	4	5	9	19	28	47	75	94
	40%	1	3	4	5	6	13	25	38	63	100	125
	50%	2	3	5	6	8	16	31	47	78	125	157
	60%	2	4	6	8	9	19	38	56	94	150	188
	70%	2	4	7	9	11	22	44	66	110	175	219
	80%	3	5	8	10	13	25	50	75	125	200	251
	90%	3	6	8	11	14	28	56	85	141	226	282
	100%	3	6	9	13	16	31	63	94	157	251	313

Table 3.189 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.56%	0.90%	1.13%
	20%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.45%	0.68%	1.13%	1.81%	2.26%
	30%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.68%	1.02%	1.69%	2.71%	3.39%
	40%	0.05%	0.09%	0.14%	0.18%	0.23%	0.45%	0.90%	1.35%	2.26%	3.61%	4.51%
	50%	0.06%	0.11%	0.17%	0.23%	0.28%	0.56%	1.13%	1.69%	2.82%	4.51%	5.64%
	60%	0.07%	0.14%	0.20%	0.27%	0.34%	0.68%	1.35%	2.03%	3.39%	5.42%	6.77%
	70%	0.08%	0.16%	0.24%	0.32%	0.40%	0.79%	1.58%	2.37%	3.95%	6.32%	7.90%
	80%	0.09%	0.18%	0.27%	0.36%	0.45%	0.90%	1.81%	2.71%	4.51%	7.22%	9.03%
	90%	0.10%	0.20%	0.30%	0.41%	0.51%	1.02%	2.03%	3.05%	5.08%	8.13%	10.16%
	100%	0.11%	0.23%	0.34%	0.45%	0.56%	1.13%	2.26%	3.39%	5.64%	9.03%	11.29%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.17%	0.25%	0.41%	0.66%	0.83%
	20%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.33%	0.50%	0.83%	1.32%	1.65%
	30%	0.02%	0.05%	0.07%	0.10%	0.12%	0.25%	0.50%	0.74%	1.24%	1.98%	2.48%
	40%	0.03%	0.07%	0.10%	0.13%	0.17%	0.33%	0.66%	0.99%	1.65%	2.64%	3.30%
	50%	0.04%	0.08%	0.12%	0.17%	0.21%	0.41%	0.83%	1.24%	2.07%	3.30%	4.13%
	60%	0.05%	0.10%	0.15%	0.20%	0.25%	0.50%	0.99%	1.49%	2.48%	3.96%	4.96%
	70%	0.06%	0.12%	0.17%	0.23%	0.29%	0.58%	1.16%	1.73%	2.89%	4.63%	5.78%
	80%	0.07%	0.13%	0.20%	0.26%	0.33%	0.66%	1.32%	1.98%	3.30%	5.29%	6.61%
	90%	0.07%	0.15%	0.22%	0.30%	0.37%	0.74%	1.49%	2.23%	3.72%	5.95%	7.43%
	100%	0.08%	0.17%	0.25%	0.33%	0.41%	0.83%	1.65%	2.48%	4.13%	6.61%	8.26%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.03%	0.05%	0.07%	0.08%	0.16%	0.33%	0.49%	0.82%	1.31%	1.64%
	20%	0.03%	0.07%	0.10%	0.13%	0.16%	0.33%	0.65%	0.98%	1.64%	2.62%	3.27%
	30%	0.05%	0.10%	0.15%	0.20%	0.25%	0.49%	0.98%	1.47%	2.45%	3.92%	4.91%
	40%	0.07%	0.13%	0.20%	0.26%	0.33%	0.65%	1.31%	1.96%	3.27%	5.23%	6.54%
	50%	0.08%	0.16%	0.25%	0.33%	0.41%	0.82%	1.64%	2.45%	4.09%	6.54%	8.18%
	60%	0.10%	0.20%	0.29%	0.39%	0.49%	0.98%	1.96%	2.94%	4.91%	7.85%	9.81%
	70%	0.11%	0.23%	0.34%	0.46%	0.57%	1.14%	2.29%	3.43%	5.72%	9.16%	11.45%
	80%	0.13%	0.26%	0.39%	0.52%	0.65%	1.31%	2.62%	3.92%	6.54%	10.47%	13.08%
	90%	0.15%	0.29%	0.44%	0.59%	0.74%	1.47%	2.94%	4.42%	7.36%	11.77%	14.72%
	100%	0.16%	0.33%	0.49%	0.65%	0.82%	1.64%	3.27%	4.91%	8.18%	13.08%	16.35%

Table 3.190 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Cape Wrath SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	2	2	4	8	11	19	31	38
	20%	1	2	2	3	4	8	15	23	38	61	76
	30%	1	2	3	5	6	11	23	34	57	92	115
	40%	2	3	5	6	8	15	31	46	76	122	153
	50%	2	4	6	8	10	19	38	57	96	153	191
	60%	2	5	7	9	11	23	46	69	115	184	229
	70%	3	5	8	11	13	27	54	80	134	214	268
	80%	3	6	9	12	15	31	61	92	153	245	306
	90%	3	7	10	14	17	34	69	103	172	275	344
	100%	4	8	11	15	19	38	76	115	191	306	382

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	1	1	3	6	8	14	22	28
	20%	1	1	2	2	3	6	11	17	28	45	56
	30%	1	2	3	3	4	8	17	25	42	67	84
	40%	1	2	3	4	6	11	22	34	56	90	112
	50%	1	3	4	6	7	14	28	42	70	112	140
	60%	2	3	5	7	8	17	34	50	84	134	168
	70%	2	4	6	8	10	20	39	59	98	157	196
	80%	2	4	7	9	11	22	45	67	112	179	224
	90%	3	5	8	10	13	25	50	76	126	202	252
	100%	3	6	8	11	14	28	56	84	140	224	280
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	2	3	6	11	17	28	44	55
	20%	1	2	3	4	6	11	22	33	55	89	111
	30%	2	3	5	7	8	17	33	50	83	133	166
	40%	2	4	7	9	11	22	44	67	111	177	222
	50%	3	6	8	11	14	28	55	83	139	222	277
	60%	3	7	10	13	17	33	67	100	166	266	333
	70%	4	8	12	16	19	39	78	116	194	310	388
	80%	4	9	13	18	22	44	89	133	222	355	443
	90%	5	10	15	20	25	50	100	150	249	399	499
	100%	6	11	17	22	28	55	111	166	277	443	554

Table 3.191 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Cape Wrath SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.02%	0.03%	0.05%	0.07%	0.08%	0.16%	0.33%	0.49%	0.82%	1.32%	1.65%
	20%	0.03%	0.07%	0.10%	0.13%	0.16%	0.33%	0.66%	0.99%	1.65%	2.63%	3.29%
	30%	0.05%	0.10%	0.15%	0.20%	0.25%	0.49%	0.99%	1.48%	2.47%	3.95%	4.94%
	40%	0.07%	0.13%	0.20%	0.26%	0.33%	0.66%	1.32%	1.97%	3.29%	5.27%	6.58%
	50%	0.08%	0.16%	0.25%	0.33%	0.41%	0.82%	1.65%	2.47%	4.11%	6.58%	8.23%
	60%	0.10%	0.20%	0.30%	0.39%	0.49%	0.99%	1.97%	2.96%	4.94%	7.90%	9.87%
	70%	0.12%	0.23%	0.35%	0.46%	0.58%	1.15%	2.30%	3.46%	5.76%	9.21%	11.52%
	80%	0.13%	0.26%	0.39%	0.53%	0.66%	1.32%	2.63%	3.95%	6.58%	10.53%	13.16%
	90%	0.15%	0.30%	0.44%	0.59%	0.74%	1.48%	2.96%	4.44%	7.40%	11.85%	14.81%
	100%	0.16%	0.33%	0.49%	0.66%	0.82%	1.65%	3.29%	4.94%	8.23%	13.16%	16.45%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.60%	0.96%	1.20%
	20%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.48%	0.72%	1.20%	1.93%	2.41%
	30%	0.04%	0.07%	0.11%	0.14%	0.18%	0.36%	0.72%	1.08%	1.81%	2.89%	3.61%
	40%	0.05%	0.10%	0.14%	0.19%	0.24%	0.48%	0.96%	1.44%	2.41%	3.85%	4.82%
	50%	0.06%	0.12%	0.18%	0.24%	0.30%	0.60%	1.20%	1.81%	3.01%	4.82%	6.02%
	60%	0.07%	0.14%	0.22%	0.29%	0.36%	0.72%	1.44%	2.17%	3.61%	5.78%	7.22%
	70%	0.08%	0.17%	0.25%	0.34%	0.42%	0.84%	1.69%	2.53%	4.21%	6.74%	8.43%
	80%	0.10%	0.19%	0.29%	0.39%	0.48%	0.96%	1.93%	2.89%	4.82%	7.71%	9.63%
	90%	0.11%	0.22%	0.33%	0.43%	0.54%	1.08%	2.17%	3.25%	5.42%	8.67%	10.84%
	100%	0.12%	0.24%	0.36%	0.48%	0.60%	1.20%	2.41%	3.61%	6.02%	9.63%	12.04%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.48%	0.72%	1.19%	1.91%	2.38%
	20%	0.05%	0.10%	0.14%	0.19%	0.24%	0.48%	0.95%	1.43%	2.38%	3.81%	4.77%
	30%	0.07%	0.14%	0.21%	0.29%	0.36%	0.72%	1.43%	2.15%	3.58%	5.72%	7.15%
	40%	0.10%	0.19%	0.29%	0.38%	0.48%	0.95%	1.91%	2.86%	4.77%	7.63%	9.54%
	50%	0.12%	0.24%	0.36%	0.48%	0.60%	1.19%	2.38%	3.58%	5.96%	9.54%	11.92%
	60%	0.14%	0.29%	0.43%	0.57%	0.72%	1.43%	2.86%	4.29%	7.15%	11.44%	14.30%
	70%	0.17%	0.33%	0.50%	0.67%	0.83%	1.67%	3.34%	5.01%	8.34%	13.35%	16.69%
	80%	0.19%	0.38%	0.57%	0.76%	0.95%	1.91%	3.81%	5.72%	9.54%	15.26%	19.07%
	90%	0.21%	0.43%	0.64%	0.86%	1.07%	2.15%	4.29%	6.44%	10.73%	17.16%	21.46%
	100%	0.24%	0.48%	0.72%	0.95%	1.19%	2.38%	4.77%	7.15%	11.92%	19.07%	23.84%

Table 3.192 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Cape Wrath SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	2	2	4	8	11	19	31	38
	20%	1	2	2	3	4	8	15	23	38	61	76
	30%	1	2	3	5	6	11	23	34	57	92	115
	40%	2	3	5	6	8	15	31	46	76	122	153
	50%	2	4	6	8	10	19	38	57	96	153	191
	60%	2	5	7	9	11	23	46	69	115	184	229
	70%	3	5	8	11	13	27	54	80	134	214	268
	80%	3	6	9	12	15	31	61	92	153	245	306
	90%	3	7	10	14	17	34	69	103	172	275	344
	100%	4	8	11	15	19	38	76	115	191	306	382

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	1	1	3	6	8	14	22	28
	20%	1	1	2	2	3	6	11	17	28	45	56
	30%	1	2	3	3	4	8	17	25	42	67	84
	40%	1	2	3	4	6	11	22	34	56	90	112
	50%	1	3	4	6	7	14	28	42	70	112	140
	60%	2	3	5	7	8	17	34	50	84	134	168
	70%	2	4	6	8	10	20	39	59	98	157	196
	80%	2	4	7	9	11	22	45	67	112	179	224
	90%	3	5	8	10	13	25	50	76	126	202	252
	100%	3	6	8	11	14	28	56	84	140	224	280
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	2	3	6	11	17	28	44	55
	20%	1	2	3	4	6	11	22	33	55	89	111
	30%	2	3	5	7	8	17	33	50	83	133	166
	40%	2	4	7	9	11	22	44	67	111	177	222
	50%	3	6	8	11	14	28	55	83	139	222	277
	60%	3	7	10	13	17	33	67	100	166	266	333
	70%	4	8	12	16	19	39	78	116	194	310	388
	80%	4	9	13	18	22	44	89	133	222	355	443
	90%	5	10	15	20	25	50	100	150	249	399	499
	100%	6	11	17	22	28	55	111	166	277	443	554

Table 3.193 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Cape Wrath SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.02%	0.03%	0.05%	0.07%	0.08%	0.16%	0.33%	0.49%	0.82%	1.32%	1.65%
	20%	0.03%	0.07%	0.10%	0.13%	0.16%	0.33%	0.66%	0.99%	1.65%	2.63%	3.29%
	30%	0.05%	0.10%	0.15%	0.20%	0.25%	0.49%	0.99%	1.48%	2.47%	3.95%	4.94%
	40%	0.07%	0.13%	0.20%	0.26%	0.33%	0.66%	1.32%	1.97%	3.29%	5.27%	6.58%
	50%	0.08%	0.16%	0.25%	0.33%	0.41%	0.82%	1.65%	2.47%	4.11%	6.58%	8.23%
	60%	0.10%	0.20%	0.30%	0.39%	0.49%	0.99%	1.97%	2.96%	4.94%	7.90%	9.87%
	70%	0.12%	0.23%	0.35%	0.46%	0.58%	1.15%	2.30%	3.46%	5.76%	9.21%	11.52%
	80%	0.13%	0.26%	0.39%	0.53%	0.66%	1.32%	2.63%	3.95%	6.58%	10.53%	13.16%
	90%	0.15%	0.30%	0.44%	0.59%	0.74%	1.48%	2.96%	4.44%	7.40%	11.85%	14.81%
	100%	0.16%	0.33%	0.49%	0.66%	0.82%	1.65%	3.29%	4.94%	8.23%	13.16%	16.45%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.60%	0.96%	1.20%
	20%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.48%	0.72%	1.20%	1.93%	2.41%
	30%	0.04%	0.07%	0.11%	0.14%	0.18%	0.36%	0.72%	1.08%	1.81%	2.89%	3.61%
	40%	0.05%	0.10%	0.14%	0.19%	0.24%	0.48%	0.96%	1.44%	2.41%	3.85%	4.82%
	50%	0.06%	0.12%	0.18%	0.24%	0.30%	0.60%	1.20%	1.81%	3.01%	4.82%	6.02%
	60%	0.07%	0.14%	0.22%	0.29%	0.36%	0.72%	1.44%	2.17%	3.61%	5.78%	7.22%
	70%	0.08%	0.17%	0.25%	0.34%	0.42%	0.84%	1.69%	2.53%	4.21%	6.74%	8.43%
	80%	0.10%	0.19%	0.29%	0.39%	0.48%	0.96%	1.93%	2.89%	4.82%	7.71%	9.63%
	90%	0.11%	0.22%	0.33%	0.43%	0.54%	1.08%	2.17%	3.25%	5.42%	8.67%	10.84%
	100%	0.12%	0.24%	0.36%	0.48%	0.60%	1.20%	2.41%	3.61%	6.02%	9.63%	12.04%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.48%	0.72%	1.19%	1.91%	2.38%
	20%	0.05%	0.10%	0.14%	0.19%	0.24%	0.48%	0.95%	1.43%	2.38%	3.81%	4.77%
	30%	0.07%	0.14%	0.21%	0.29%	0.36%	0.72%	1.43%	2.15%	3.58%	5.72%	7.15%
	40%	0.10%	0.19%	0.29%	0.38%	0.48%	0.95%	1.91%	2.86%	4.77%	7.63%	9.54%
	50%	0.12%	0.24%	0.36%	0.48%	0.60%	1.19%	2.38%	3.58%	5.96%	9.54%	11.92%
	60%	0.14%	0.29%	0.43%	0.57%	0.72%	1.43%	2.86%	4.29%	7.15%	11.44%	14.30%
	70%	0.17%	0.33%	0.50%	0.67%	0.83%	1.67%	3.34%	5.01%	8.34%	13.35%	16.69%
	80%	0.19%	0.38%	0.57%	0.76%	0.95%	1.91%	3.81%	5.72%	9.54%	15.26%	19.07%
	90%	0.21%	0.43%	0.64%	0.86%	1.07%	2.15%	4.29%	6.44%	10.73%	17.16%	21.46%
	100%	0.24%	0.48%	0.72%	0.95%	1.19%	2.38%	4.77%	7.15%	11.92%	19.07%	23.84%

Table 3.194 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Flannan Isles SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	1	3	4	7	11	13
	20%	0	1	1	1	1	3	5	8	13	21	27
	30%	0	1	1	2	2	4	8	12	20	32	40
	40%	1	1	2	2	3	5	11	16	27	43	53
	50%	1	1	2	3	3	7	13	20	33	53	67
	60%	1	2	2	3	4	8	16	24	40	64	80
	70%	1	2	3	4	5	9	19	28	47	75	93
	80%	1	2	3	4	5	11	21	32	53	85	106
	90%	1	2	4	5	6	12	24	36	60	96	120
	100%	1	3	4	5	7	13	27	40	67	106	133

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	3	5	8	10
	20%	0	0	1	1	1	2	4	6	10	16	19
	30%	0	1	1	1	1	3	6	9	15	23	29
	40%	0	1	1	2	2	4	8	12	19	31	39
	50%	0	1	1	2	2	5	10	15	24	39	49
	60%	1	1	2	2	3	6	12	18	29	47	58
	70%	1	1	2	3	3	7	14	20	34	55	68
	80%	1	2	2	3	4	8	16	23	39	62	78
	90%	1	2	3	4	4	9	18	26	44	70	88
	100%	1	2	3	4	5	10	19	29	49	78	97
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	6	10	15	19
	20%	0	1	1	2	2	4	8	12	19	31	39
	30%	1	1	2	2	3	6	12	17	29	46	58
	40%	1	2	2	3	4	8	15	23	39	62	77
	50%	1	2	3	4	5	10	19	29	48	77	96
	60%	1	2	3	5	6	12	23	35	58	93	116
	70%	1	3	4	5	7	13	27	40	67	108	135
	80%	2	3	5	6	8	15	31	46	77	123	154
	90%	2	3	5	7	9	17	35	52	87	139	173
	100%	2	4	6	8	10	19	39	58	96	154	193

Table 3.195 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Flannan Isles SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.04%	0.08%	0.12%	0.15%	0.19%	0.39%	0.77%	1.16%	1.94%	3.10%	3.87%
	20%	0.08%	0.15%	0.23%	0.31%	0.39%	0.77%	1.55%	2.32%	3.87%	6.20%	7.74%
	30%	0.12%	0.23%	0.35%	0.46%	0.58%	1.16%	2.32%	3.49%	5.81%	9.29%	11.62%
	40%	0.15%	0.31%	0.46%	0.62%	0.77%	1.55%	3.10%	4.65%	7.74%	12.39%	15.49%
	50%	0.19%	0.39%	0.58%	0.77%	0.97%	1.94%	3.87%	5.81%	9.68%	15.49%	19.36%
	60%	0.23%	0.46%	0.70%	0.93%	1.16%	2.32%	4.65%	6.97%	11.62%	18.59%	23.23%
	70%	0.27%	0.54%	0.81%	1.08%	1.36%	2.71%	5.42%	8.13%	13.55%	21.69%	27.11%
	80%	0.31%	0.62%	0.93%	1.24%	1.55%	3.10%	6.20%	9.29%	15.49%	24.78%	30.98%
	90%	0.35%	0.70%	1.05%	1.39%	1.74%	3.49%	6.97%	10.46%	17.43%	27.88%	34.85%
	100%	0.39%	0.77%	1.16%	1.55%	1.94%	3.87%	7.74%	11.62%	19.36%	30.98%	38.72%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.03%	0.06%	0.09%	0.11%	0.14%	0.28%	0.57%	0.85%	1.42%	2.27%	2.83%
	20%	0.06%	0.11%	0.17%	0.23%	0.28%	0.57%	1.13%	1.70%	2.83%	4.53%	5.67%
	30%	0.09%	0.17%	0.26%	0.34%	0.43%	0.85%	1.70%	2.55%	4.25%	6.80%	8.50%
	40%	0.11%	0.23%	0.34%	0.45%	0.57%	1.13%	2.27%	3.40%	5.67%	9.07%	11.34%
	50%	0.14%	0.28%	0.43%	0.57%	0.71%	1.42%	2.83%	4.25%	7.08%	11.34%	14.17%
	60%	0.17%	0.34%	0.51%	0.68%	0.85%	1.70%	3.40%	5.10%	8.50%	13.60%	17.00%
	70%	0.20%	0.40%	0.60%	0.79%	0.99%	1.98%	3.97%	5.95%	9.92%	15.87%	19.84%
	80%	0.23%	0.45%	0.68%	0.91%	1.13%	2.27%	4.53%	6.80%	11.34%	18.14%	22.67%
	90%	0.26%	0.51%	0.77%	1.02%	1.28%	2.55%	5.10%	7.65%	12.75%	20.40%	25.51%
	100%	0.28%	0.57%	0.85%	1.13%	1.42%	2.83%	5.67%	8.50%	14.17%	22.67%	28.34%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.06%	0.11%	0.17%	0.22%	0.28%	0.56%	1.12%	1.68%	2.81%	4.49%	5.61%
	20%	0.11%	0.22%	0.34%	0.45%	0.56%	1.12%	2.24%	3.37%	5.61%	8.98%	11.22%
	30%	0.17%	0.34%	0.50%	0.67%	0.84%	1.68%	3.37%	5.05%	8.42%	13.47%	16.83%
	40%	0.22%	0.45%	0.67%	0.90%	1.12%	2.24%	4.49%	6.73%	11.22%	17.95%	22.44%
	50%	0.28%	0.56%	0.84%	1.12%	1.40%	2.81%	5.61%	8.42%	14.03%	22.44%	28.05%
	60%	0.34%	0.67%	1.01%	1.35%	1.68%	3.37%	6.73%	10.10%	16.83%	26.93%	33.66%
	70%	0.39%	0.79%	1.18%	1.57%	1.96%	3.93%	7.86%	11.78%	19.64%	31.42%	39.28%
	80%	0.45%	0.90%	1.35%	1.80%	2.24%	4.49%	8.98%	13.47%	22.44%	35.91%	44.89%
	90%	0.50%	1.01%	1.51%	2.02%	2.52%	5.05%	10.10%	15.15%	25.25%	40.40%	50.50%
	100%	0.56%	1.12%	1.68%	2.24%	2.81%	5.61%	11.22%	16.83%	28.05%	44.89%	56.11%

Table 3.196 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Flannan Isles SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	1	3	4	7	11	13
	20%	0	1	1	1	1	3	5	8	13	21	27
	30%	0	1	1	2	2	4	8	12	20	32	40
	40%	1	1	2	2	3	5	11	16	27	43	53
	50%	1	1	2	3	3	7	13	20	33	53	67
	60%	1	2	2	3	4	8	16	24	40	64	80
	70%	1	2	3	4	5	9	19	28	47	75	93
	80%	1	2	3	4	5	11	21	32	53	85	106
	90%	1	2	4	5	6	12	24	36	60	96	120
	100%	1	3	4	5	7	13	27	40	67	106	133

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	3	5	8	10
	20%	0	0	1	1	1	2	4	6	10	16	19
	30%	0	1	1	1	1	3	6	9	15	23	29
	40%	0	1	1	2	2	4	8	12	19	31	39
	50%	0	1	1	2	2	5	10	15	24	39	49
	60%	1	1	2	2	3	6	12	18	29	47	58
	70%	1	1	2	3	3	7	14	20	34	55	68
	80%	1	2	2	3	4	8	16	23	39	62	78
	90%	1	2	3	4	4	9	18	26	44	70	88
	100%	1	2	3	4	5	10	19	29	49	78	97
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	6	10	15	19
	20%	0	1	1	2	2	4	8	12	19	31	39
	30%	1	1	2	2	3	6	12	17	29	46	58
	40%	1	2	2	3	4	8	15	23	39	62	77
	50%	1	2	3	4	5	10	19	29	48	77	96
	60%	1	2	3	5	6	12	23	35	58	93	116
	70%	1	3	4	5	7	13	27	40	67	108	135
	80%	2	3	5	6	8	15	31	46	77	123	154
	90%	2	3	5	7	9	17	35	52	87	139	173
	100%	2	4	6	8	10	19	39	58	96	154	193

Table 3.197 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Flannan Isles SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.04%	0.08%	0.12%	0.15%	0.19%	0.39%	0.77%	1.16%	1.94%	3.10%	3.87%
	20%	0.08%	0.15%	0.23%	0.31%	0.39%	0.77%	1.55%	2.32%	3.87%	6.20%	7.74%
	30%	0.12%	0.23%	0.35%	0.46%	0.58%	1.16%	2.32%	3.49%	5.81%	9.29%	11.62%
	40%	0.15%	0.31%	0.46%	0.62%	0.77%	1.55%	3.10%	4.65%	7.74%	12.39%	15.49%
	50%	0.19%	0.39%	0.58%	0.77%	0.97%	1.94%	3.87%	5.81%	9.68%	15.49%	19.36%
	60%	0.23%	0.46%	0.70%	0.93%	1.16%	2.32%	4.65%	6.97%	11.62%	18.59%	23.23%
	70%	0.27%	0.54%	0.81%	1.08%	1.36%	2.71%	5.42%	8.13%	13.55%	21.69%	27.11%
	80%	0.31%	0.62%	0.93%	1.24%	1.55%	3.10%	6.20%	9.29%	15.49%	24.78%	30.98%
	90%	0.35%	0.70%	1.05%	1.39%	1.74%	3.49%	6.97%	10.46%	17.43%	27.88%	34.85%
	100%	0.39%	0.77%	1.16%	1.55%	1.94%	3.87%	7.74%	11.62%	19.36%	30.98%	38.72%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.03%	0.06%	0.09%	0.11%	0.14%	0.28%	0.57%	0.85%	1.42%	2.27%	2.83%
	20%	0.06%	0.11%	0.17%	0.23%	0.28%	0.57%	1.13%	1.70%	2.83%	4.53%	5.67%
	30%	0.09%	0.17%	0.26%	0.34%	0.43%	0.85%	1.70%	2.55%	4.25%	6.80%	8.50%
	40%	0.11%	0.23%	0.34%	0.45%	0.57%	1.13%	2.27%	3.40%	5.67%	9.07%	11.34%
	50%	0.14%	0.28%	0.43%	0.57%	0.71%	1.42%	2.83%	4.25%	7.08%	11.34%	14.17%
	60%	0.17%	0.34%	0.51%	0.68%	0.85%	1.70%	3.40%	5.10%	8.50%	13.60%	17.00%
	70%	0.20%	0.40%	0.60%	0.79%	0.99%	1.98%	3.97%	5.95%	9.92%	15.87%	19.84%
	80%	0.23%	0.45%	0.68%	0.91%	1.13%	2.27%	4.53%	6.80%	11.34%	18.14%	22.67%
	90%	0.26%	0.51%	0.77%	1.02%	1.28%	2.55%	5.10%	7.65%	12.75%	20.40%	25.51%
	100%	0.28%	0.57%	0.85%	1.13%	1.42%	2.83%	5.67%	8.50%	14.17%	22.67%	28.34%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.06%	0.11%	0.17%	0.22%	0.28%	0.56%	1.12%	1.68%	2.81%	4.49%	5.61%
	20%	0.11%	0.22%	0.34%	0.45%	0.56%	1.12%	2.24%	3.37%	5.61%	8.98%	11.22%
	30%	0.17%	0.34%	0.50%	0.67%	0.84%	1.68%	3.37%	5.05%	8.42%	13.47%	16.83%
	40%	0.22%	0.45%	0.67%	0.90%	1.12%	2.24%	4.49%	6.73%	11.22%	17.95%	22.44%
	50%	0.28%	0.56%	0.84%	1.12%	1.40%	2.81%	5.61%	8.42%	14.03%	22.44%	28.05%
	60%	0.34%	0.67%	1.01%	1.35%	1.68%	3.37%	6.73%	10.10%	16.83%	26.93%	33.66%
	70%	0.39%	0.79%	1.18%	1.57%	1.96%	3.93%	7.86%	11.78%	19.64%	31.42%	39.28%
	80%	0.45%	0.90%	1.35%	1.80%	2.24%	4.49%	8.98%	13.47%	22.44%	35.91%	44.89%
	90%	0.50%	1.01%	1.51%	2.02%	2.52%	5.05%	10.10%	15.15%	25.25%	40.40%	50.50%
	100%	0.56%	1.12%	1.68%	2.24%	2.81%	5.61%	11.22%	16.83%	28.05%	44.89%	56.11%

Table 3.198 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	1	1	2	3	5	9	11
	20%	0	0	1	1	1	2	4	6	11	17	22
	30%	0	1	1	1	2	3	6	10	16	26	32
	40%	0	1	1	2	2	4	9	13	22	35	43
	50%	1	1	2	2	3	5	11	16	27	43	54
	60%	1	1	2	3	3	6	13	19	32	52	65
	70%	1	2	2	3	4	8	15	23	38	61	76
	80%	1	2	3	3	4	9	17	26	43	69	86
	90%	1	2	3	4	5	10	19	29	49	78	97
	100%	1	2	3	4	5	11	22	32	54	86	108

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	2	4	6	8
	20%	0	0	0	1	1	2	3	5	8	13	16
	30%	0	0	1	1	1	2	5	7	12	19	24
	40%	0	1	1	1	2	3	6	9	16	25	32
	50%	0	1	1	2	2	4	8	12	20	32	40
	60%	0	1	1	2	2	5	9	14	24	38	47
	70%	1	1	2	2	3	6	11	17	28	44	55
	80%	1	1	2	3	3	6	13	19	32	51	63
	90%	1	1	2	3	4	7	14	21	36	57	71
	100%	1	2	2	3	4	8	16	24	40	63	79
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	2	3	5	8	13	16
	20%	0	1	1	1	2	3	6	9	16	25	31
	30%	0	1	1	2	2	5	9	14	23	38	47
	40%	1	1	2	3	3	6	13	19	31	50	63
	50%	1	2	2	3	4	8	16	23	39	63	78
	60%	1	2	3	4	5	9	19	28	47	75	94
	70%	1	2	3	4	5	11	22	33	55	88	110
	80%	1	3	4	5	6	13	25	38	63	100	125
	90%	1	3	4	6	7	14	28	42	70	113	141
	100%	2	3	5	6	8	16	31	47	78	125	157

Table 3.199 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.35%	0.53%	0.88%	1.41%	1.76%
	20%	0.04%	0.07%	0.11%	0.14%	0.18%	0.35%	0.70%	1.06%	1.76%	2.82%	3.52%
	30%	0.05%	0.11%	0.16%	0.21%	0.26%	0.53%	1.06%	1.58%	2.64%	4.22%	5.28%
	40%	0.07%	0.14%	0.21%	0.28%	0.35%	0.70%	1.41%	2.11%	3.52%	5.63%	7.04%
	50%	0.09%	0.18%	0.26%	0.35%	0.44%	0.88%	1.76%	2.64%	4.40%	7.04%	8.80%
	60%	0.11%	0.21%	0.32%	0.42%	0.53%	1.06%	2.11%	3.17%	5.28%	8.45%	10.56%
	70%	0.12%	0.25%	0.37%	0.49%	0.62%	1.23%	2.46%	3.70%	6.16%	9.86%	12.32%
	80%	0.14%	0.28%	0.42%	0.56%	0.70%	1.41%	2.82%	4.22%	7.04%	11.26%	14.08%
	90%	0.16%	0.32%	0.48%	0.63%	0.79%	1.58%	3.17%	4.75%	7.92%	12.67%	15.84%
	100%	0.18%	0.35%	0.53%	0.70%	0.88%	1.76%	3.52%	5.28%	8.80%	14.08%	17.60%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.29%
	20%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.52%	0.77%	1.29%	2.06%	2.58%
	30%	0.04%	0.08%	0.12%	0.15%	0.19%	0.39%	0.77%	1.16%	1.93%	3.09%	3.86%
	40%	0.05%	0.10%	0.15%	0.21%	0.26%	0.52%	1.03%	1.55%	2.58%	4.12%	5.15%
	50%	0.06%	0.13%	0.19%	0.26%	0.32%	0.64%	1.29%	1.93%	3.22%	5.15%	6.44%
	60%	0.08%	0.15%	0.23%	0.31%	0.39%	0.77%	1.55%	2.32%	3.86%	6.18%	7.73%
	70%	0.09%	0.18%	0.27%	0.36%	0.45%	0.90%	1.80%	2.70%	4.51%	7.21%	9.02%
	80%	0.10%	0.21%	0.31%	0.41%	0.52%	1.03%	2.06%	3.09%	5.15%	8.24%	10.30%
	90%	0.12%	0.23%	0.35%	0.46%	0.58%	1.16%	2.32%	3.48%	5.80%	9.27%	11.59%
	100%	0.13%	0.26%	0.39%	0.52%	0.64%	1.29%	2.58%	3.86%	6.44%	10.30%	12.88%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.51%	0.77%	1.28%	2.04%	2.55%
	20%	0.05%	0.10%	0.15%	0.20%	0.26%	0.51%	1.02%	1.53%	2.55%	4.08%	5.10%
	30%	0.08%	0.15%	0.23%	0.31%	0.38%	0.77%	1.53%	2.30%	3.83%	6.12%	7.65%
	40%	0.10%	0.20%	0.31%	0.41%	0.51%	1.02%	2.04%	3.06%	5.10%	8.16%	10.20%
	50%	0.13%	0.26%	0.38%	0.51%	0.64%	1.28%	2.55%	3.83%	6.38%	10.20%	12.75%
	60%	0.15%	0.31%	0.46%	0.61%	0.77%	1.53%	3.06%	4.59%	7.65%	12.24%	15.30%
	70%	0.18%	0.36%	0.54%	0.71%	0.89%	1.79%	3.57%	5.36%	8.93%	14.28%	17.85%
	80%	0.20%	0.41%	0.61%	0.82%	1.02%	2.04%	4.08%	6.12%	10.20%	16.32%	20.40%
	90%	0.23%	0.46%	0.69%	0.92%	1.15%	2.30%	4.59%	6.89%	11.48%	18.36%	22.95%
	100%	0.26%	0.51%	0.77%	1.02%	1.28%	2.55%	5.10%	7.65%	12.75%	20.40%	25.50%

Table 3.200 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	1	1	2	3	5	9	11
	20%	0	0	1	1	1	2	4	6	11	17	22
	30%	0	1	1	1	2	3	6	10	16	26	32
	40%	0	1	1	2	2	4	9	13	22	35	43
	50%	1	1	2	2	3	5	11	16	27	43	54
	60%	1	1	2	3	3	6	13	19	32	52	65
	70%	1	2	2	3	4	8	15	23	38	61	76
	80%	1	2	3	3	4	9	17	26	43	69	86
	90%	1	2	3	4	5	10	19	29	49	78	97
	100%	1	2	3	4	5	11	22	32	54	86	108

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	2	4	6	8
	20%	0	0	0	1	1	2	3	5	8	13	16
	30%	0	0	1	1	1	2	5	7	12	19	24
	40%	0	1	1	1	2	3	6	9	16	25	32
	50%	0	1	1	2	2	4	8	12	20	32	40
	60%	0	1	1	2	2	5	9	14	24	38	47
	70%	1	1	2	2	3	6	11	17	28	44	55
	80%	1	1	2	3	3	6	13	19	32	51	63
	90%	1	1	2	3	4	7	14	21	36	57	71
	100%	1	2	2	3	4	8	16	24	40	63	79
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	2	3	5	8	13	16
	20%	0	1	1	1	2	3	6	9	16	25	31
	30%	0	1	1	2	2	5	9	14	23	38	47
	40%	1	1	2	3	3	6	13	19	31	50	63
	50%	1	2	2	3	4	8	16	23	39	63	78
	60%	1	2	3	4	5	9	19	28	47	75	94
	70%	1	2	3	4	5	11	22	33	55	88	110
	80%	1	3	4	5	6	13	25	38	63	100	125
	90%	1	3	4	6	7	14	28	42	70	113	141
	100%	2	3	5	6	8	16	31	47	78	125	157

Table 3.201 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.35%	0.53%	0.88%	1.41%	1.76%
	20%	0.04%	0.07%	0.11%	0.14%	0.18%	0.35%	0.70%	1.06%	1.76%	2.82%	3.52%
	30%	0.05%	0.11%	0.16%	0.21%	0.26%	0.53%	1.06%	1.58%	2.64%	4.22%	5.28%
	40%	0.07%	0.14%	0.21%	0.28%	0.35%	0.70%	1.41%	2.11%	3.52%	5.63%	7.04%
	50%	0.09%	0.18%	0.26%	0.35%	0.44%	0.88%	1.76%	2.64%	4.40%	7.04%	8.80%
	60%	0.11%	0.21%	0.32%	0.42%	0.53%	1.06%	2.11%	3.17%	5.28%	8.45%	10.56%
	70%	0.12%	0.25%	0.37%	0.49%	0.62%	1.23%	2.46%	3.70%	6.16%	9.86%	12.32%
	80%	0.14%	0.28%	0.42%	0.56%	0.70%	1.41%	2.82%	4.22%	7.04%	11.26%	14.08%
	90%	0.16%	0.32%	0.48%	0.63%	0.79%	1.58%	3.17%	4.75%	7.92%	12.67%	15.84%
	100%	0.18%	0.35%	0.53%	0.70%	0.88%	1.76%	3.52%	5.28%	8.80%	14.08%	17.60%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.29%
	20%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.52%	0.77%	1.29%	2.06%	2.58%
	30%	0.04%	0.08%	0.12%	0.15%	0.19%	0.39%	0.77%	1.16%	1.93%	3.09%	3.86%
	40%	0.05%	0.10%	0.15%	0.21%	0.26%	0.52%	1.03%	1.55%	2.58%	4.12%	5.15%
	50%	0.06%	0.13%	0.19%	0.26%	0.32%	0.64%	1.29%	1.93%	3.22%	5.15%	6.44%
	60%	0.08%	0.15%	0.23%	0.31%	0.39%	0.77%	1.55%	2.32%	3.86%	6.18%	7.73%
	70%	0.09%	0.18%	0.27%	0.36%	0.45%	0.90%	1.80%	2.70%	4.51%	7.21%	9.02%
	80%	0.10%	0.21%	0.31%	0.41%	0.52%	1.03%	2.06%	3.09%	5.15%	8.24%	10.30%
	90%	0.12%	0.23%	0.35%	0.46%	0.58%	1.16%	2.32%	3.48%	5.80%	9.27%	11.59%
	100%	0.13%	0.26%	0.39%	0.52%	0.64%	1.29%	2.58%	3.86%	6.44%	10.30%	12.88%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.51%	0.77%	1.28%	2.04%	2.55%
	20%	0.05%	0.10%	0.15%	0.20%	0.26%	0.51%	1.02%	1.53%	2.55%	4.08%	5.10%
	30%	0.08%	0.15%	0.23%	0.31%	0.38%	0.77%	1.53%	2.30%	3.83%	6.12%	7.65%
	40%	0.10%	0.20%	0.31%	0.41%	0.51%	1.02%	2.04%	3.06%	5.10%	8.16%	10.20%
	50%	0.13%	0.26%	0.38%	0.51%	0.64%	1.28%	2.55%	3.83%	6.38%	10.20%	12.75%
	60%	0.15%	0.31%	0.46%	0.61%	0.77%	1.53%	3.06%	4.59%	7.65%	12.24%	15.30%
	70%	0.18%	0.36%	0.54%	0.71%	0.89%	1.79%	3.57%	5.36%	8.93%	14.28%	17.85%
	80%	0.20%	0.41%	0.61%	0.82%	1.02%	2.04%	4.08%	6.12%	10.20%	16.32%	20.40%
	90%	0.23%	0.46%	0.69%	0.92%	1.15%	2.30%	4.59%	6.89%	11.48%	18.36%	22.95%
	100%	0.26%	0.51%	0.77%	1.02%	1.28%	2.55%	5.10%	7.65%	12.75%	20.40%	25.50%

Table 3.202 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **North Rona and Sula Sgeir SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	5	7
	20%	0	0	0	1	1	1	3	4	7	11	13
	30%	0	0	1	1	1	2	4	6	10	16	20
	40%	0	1	1	1	1	3	5	8	13	21	27
	50%	0	1	1	1	2	3	7	10	17	27	33
	60%	0	1	1	2	2	4	8	12	20	32	40
	70%	0	1	1	2	2	5	9	14	23	37	47
	80%	1	1	2	2	3	5	11	16	27	43	53
	90%	1	1	2	2	3	6	12	18	30	48	60
	100%	1	1	2	3	3	7	13	20	33	53	67

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	4	5
	20%	0	0	0	0	0	1	2	3	5	8	10
	30%	0	0	0	1	1	1	3	4	7	12	15
	40%	0	0	1	1	1	2	4	6	10	16	19
	50%	0	0	1	1	1	2	5	7	12	19	24
	60%	0	1	1	1	1	3	6	9	15	23	29
	70%	0	1	1	1	2	3	7	10	17	27	34
	80%	0	1	1	2	2	4	8	12	19	31	39
	90%	0	1	1	2	2	4	9	13	22	35	44
	100%	0	1	1	2	2	5	10	15	24	39	49
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	3	5	8	10
	20%	0	0	1	1	1	2	4	6	10	15	19
	30%	0	1	1	1	1	3	6	9	14	23	29
	40%	0	1	1	2	2	4	8	12	19	31	39
	50%	0	1	1	2	2	5	10	14	24	39	48
	60%	1	1	2	2	3	6	12	17	29	46	58
	70%	1	1	2	3	3	7	13	20	34	54	67
	80%	1	2	2	3	4	8	15	23	39	62	77
	90%	1	2	3	3	4	9	17	26	43	69	87
	100%	1	2	3	4	5	10	19	29	48	77	96

Table 3.203 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **North Rona and Sula Sgeir SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.33%	0.55%	0.87%	1.09%
	20%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.44%	0.65%	1.09%	1.74%	2.18%
	30%	0.03%	0.07%	0.10%	0.13%	0.16%	0.33%	0.65%	0.98%	1.64%	2.62%	3.27%
	40%	0.04%	0.09%	0.13%	0.17%	0.22%	0.44%	0.87%	1.31%	2.18%	3.49%	4.36%
	50%	0.05%	0.11%	0.16%	0.22%	0.27%	0.55%	1.09%	1.64%	2.73%	4.36%	5.45%
	60%	0.07%	0.13%	0.20%	0.26%	0.33%	0.65%	1.31%	1.96%	3.27%	5.23%	6.54%
	70%	0.08%	0.15%	0.23%	0.31%	0.38%	0.76%	1.53%	2.29%	3.82%	6.11%	7.63%
	80%	0.09%	0.17%	0.26%	0.35%	0.44%	0.87%	1.74%	2.62%	4.36%	6.98%	8.72%
	90%	0.10%	0.20%	0.29%	0.39%	0.49%	0.98%	1.96%	2.94%	4.91%	7.85%	9.81%
	100%	0.11%	0.22%	0.33%	0.44%	0.55%	1.09%	2.18%	3.27%	5.45%	8.72%	10.90%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.64%	0.80%
	20%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.28%	1.60%
	30%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.48%	0.72%	1.20%	1.92%	2.39%
	40%	0.03%	0.06%	0.10%	0.13%	0.16%	0.32%	0.64%	0.96%	1.60%	2.55%	3.19%
	50%	0.04%	0.08%	0.12%	0.16%	0.20%	0.40%	0.80%	1.20%	2.00%	3.19%	3.99%
	60%	0.05%	0.10%	0.14%	0.19%	0.24%	0.48%	0.96%	1.44%	2.39%	3.83%	4.79%
	70%	0.06%	0.11%	0.17%	0.22%	0.28%	0.56%	1.12%	1.68%	2.79%	4.47%	5.59%
	80%	0.06%	0.13%	0.19%	0.26%	0.32%	0.64%	1.28%	1.92%	3.19%	5.11%	6.38%
	90%	0.07%	0.14%	0.22%	0.29%	0.36%	0.72%	1.44%	2.15%	3.59%	5.75%	7.18%
	100%	0.08%	0.16%	0.24%	0.32%	0.40%	0.80%	1.60%	2.39%	3.99%	6.38%	7.98%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.47%	0.79%	1.26%	1.58%
	20%	0.03%	0.06%	0.09%	0.13%	0.16%	0.32%	0.63%	0.95%	1.58%	2.53%	3.16%
	30%	0.05%	0.09%	0.14%	0.19%	0.24%	0.47%	0.95%	1.42%	2.37%	3.79%	4.74%
	40%	0.06%	0.13%	0.19%	0.25%	0.32%	0.63%	1.26%	1.90%	3.16%	5.06%	6.32%
	50%	0.08%	0.16%	0.24%	0.32%	0.39%	0.79%	1.58%	2.37%	3.95%	6.32%	7.90%
	60%	0.09%	0.19%	0.28%	0.38%	0.47%	0.95%	1.90%	2.84%	4.74%	7.58%	9.48%
	70%	0.11%	0.22%	0.33%	0.44%	0.55%	1.11%	2.21%	3.32%	5.53%	8.85%	11.06%
	80%	0.13%	0.25%	0.38%	0.51%	0.63%	1.26%	2.53%	3.79%	6.32%	10.11%	12.64%
	90%	0.14%	0.28%	0.43%	0.57%	0.71%	1.42%	2.84%	4.27%	7.11%	11.38%	14.22%
	100%	0.16%	0.32%	0.47%	0.63%	0.79%	1.58%	3.16%	4.74%	7.90%	12.64%	15.80%

Table 3.204 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **North Rona and Sula Sgeir SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	5	7
	20%	0	0	0	1	1	1	3	4	7	11	13
	30%	0	0	1	1	1	2	4	6	10	16	20
	40%	0	1	1	1	1	3	5	8	13	21	27
	50%	0	1	1	1	2	3	7	10	17	27	33
	60%	0	1	1	2	2	4	8	12	20	32	40
	70%	0	1	1	2	2	5	9	14	23	37	47
	80%	1	1	2	2	3	5	11	16	27	43	53
	90%	1	1	2	2	3	6	12	18	30	48	60
	100%	1	1	2	3	3	7	13	20	33	53	67

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	4	5
	20%	0	0	0	0	0	1	2	3	5	8	10
	30%	0	0	0	1	1	1	3	4	7	12	15
	40%	0	0	1	1	1	2	4	6	10	16	19
	50%	0	0	1	1	1	2	5	7	12	19	24
	60%	0	1	1	1	1	3	6	9	15	23	29
	70%	0	1	1	1	2	3	7	10	17	27	34
	80%	0	1	1	2	2	4	8	12	19	31	39
	90%	0	1	1	2	2	4	9	13	22	35	44
	100%	0	1	1	2	2	5	10	15	24	39	49
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	3	5	8	10
	20%	0	0	1	1	1	2	4	6	10	15	19
	30%	0	1	1	1	1	3	6	9	14	23	29
	40%	0	1	1	2	2	4	8	12	19	31	39
	50%	0	1	1	2	2	5	10	14	24	39	48
	60%	1	1	2	2	3	6	12	17	29	46	58
	70%	1	1	2	3	3	7	13	20	34	54	67
	80%	1	2	2	3	4	8	15	23	39	62	77
	90%	1	2	3	3	4	9	17	26	43	69	87
	100%	1	2	3	4	5	10	19	29	48	77	96

Table 3.205 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **North Rona and Sula Sgeir SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.33%	0.55%	0.87%	1.09%
	20%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.44%	0.65%	1.09%	1.74%	2.18%
	30%	0.03%	0.07%	0.10%	0.13%	0.16%	0.33%	0.65%	0.98%	1.64%	2.62%	3.27%
	40%	0.04%	0.09%	0.13%	0.17%	0.22%	0.44%	0.87%	1.31%	2.18%	3.49%	4.36%
	50%	0.05%	0.11%	0.16%	0.22%	0.27%	0.55%	1.09%	1.64%	2.73%	4.36%	5.45%
	60%	0.07%	0.13%	0.20%	0.26%	0.33%	0.65%	1.31%	1.96%	3.27%	5.23%	6.54%
	70%	0.08%	0.15%	0.23%	0.31%	0.38%	0.76%	1.53%	2.29%	3.82%	6.11%	7.63%
	80%	0.09%	0.17%	0.26%	0.35%	0.44%	0.87%	1.74%	2.62%	4.36%	6.98%	8.72%
	90%	0.10%	0.20%	0.29%	0.39%	0.49%	0.98%	1.96%	2.94%	4.91%	7.85%	9.81%
	100%	0.11%	0.22%	0.33%	0.44%	0.55%	1.09%	2.18%	3.27%	5.45%	8.72%	10.90%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.64%	0.80%
	20%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.28%	1.60%
	30%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.48%	0.72%	1.20%	1.92%	2.39%
	40%	0.03%	0.06%	0.10%	0.13%	0.16%	0.32%	0.64%	0.96%	1.60%	2.55%	3.19%
	50%	0.04%	0.08%	0.12%	0.16%	0.20%	0.40%	0.80%	1.20%	2.00%	3.19%	3.99%
	60%	0.05%	0.10%	0.14%	0.19%	0.24%	0.48%	0.96%	1.44%	2.39%	3.83%	4.79%
	70%	0.06%	0.11%	0.17%	0.22%	0.28%	0.56%	1.12%	1.68%	2.79%	4.47%	5.59%
	80%	0.06%	0.13%	0.19%	0.26%	0.32%	0.64%	1.28%	1.92%	3.19%	5.11%	6.38%
	90%	0.07%	0.14%	0.22%	0.29%	0.36%	0.72%	1.44%	2.15%	3.59%	5.75%	7.18%
	100%	0.08%	0.16%	0.24%	0.32%	0.40%	0.80%	1.60%	2.39%	3.99%	6.38%	7.98%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.47%	0.79%	1.26%	1.58%
	20%	0.03%	0.06%	0.09%	0.13%	0.16%	0.32%	0.63%	0.95%	1.58%	2.53%	3.16%
	30%	0.05%	0.09%	0.14%	0.19%	0.24%	0.47%	0.95%	1.42%	2.37%	3.79%	4.74%
	40%	0.06%	0.13%	0.19%	0.25%	0.32%	0.63%	1.26%	1.90%	3.16%	5.06%	6.32%
	50%	0.08%	0.16%	0.24%	0.32%	0.39%	0.79%	1.58%	2.37%	3.95%	6.32%	7.90%
	60%	0.09%	0.19%	0.28%	0.38%	0.47%	0.95%	1.90%	2.84%	4.74%	7.58%	9.48%
	70%	0.11%	0.22%	0.33%	0.44%	0.55%	1.11%	2.21%	3.32%	5.53%	8.85%	11.06%
	80%	0.13%	0.25%	0.38%	0.51%	0.63%	1.26%	2.53%	3.79%	6.32%	10.11%	12.64%
	90%	0.14%	0.28%	0.43%	0.57%	0.71%	1.42%	2.84%	4.27%	7.11%	11.38%	14.22%
	100%	0.16%	0.32%	0.47%	0.63%	0.79%	1.58%	3.16%	4.74%	7.90%	12.64%	15.80%

Table 3.206 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Lambay Island SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	2	3	5	11	16	27	43	54
	20%	1	2	3	4	5	11	22	32	54	86	108
	30%	2	3	5	6	8	16	32	49	81	130	162
	40%	2	4	6	9	11	22	43	65	108	173	216
	50%	3	5	8	11	14	27	54	81	135	216	270
	60%	3	6	10	13	16	32	65	97	162	259	324
	70%	4	8	11	15	19	38	76	113	189	303	378
	80%	4	9	13	17	22	43	86	130	216	346	432
	90%	5	10	15	19	24	49	97	146	243	389	486
	100%	5	11	16	22	27	54	108	162	270	432	540

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	2	2	4	8	12	20	32	40
	20%	1	2	2	3	4	8	16	24	40	63	79
	30%	1	2	4	5	6	12	24	36	59	95	119
	40%	2	3	5	6	8	16	32	47	79	127	158
	50%	2	4	6	8	10	20	40	59	99	158	198
	60%	2	5	7	9	12	24	47	71	119	190	237
	70%	3	6	8	11	14	28	55	83	138	221	277
	80%	3	6	9	13	16	32	63	95	158	253	316
	90%	4	7	11	14	18	36	71	107	178	285	356
	100%	4	8	12	16	20	40	79	119	198	316	396
UCI		Mortality										
		%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	2	2	3	4	8	16	23	39	63	78
	20%	2	3	5	6	8	16	31	47	78	125	157
	30%	2	5	7	9	12	23	47	70	117	188	235
	40%	3	6	9	13	16	31	63	94	157	251	313
	50%	4	8	12	16	20	39	78	117	196	313	392
	60%	5	9	14	19	23	47	94	141	235	376	470
	70%	5	11	16	22	27	55	110	164	274	439	548
	80%	6	13	19	25	31	63	125	188	313	501	626
	90%	7	14	21	28	35	70	141	211	352	564	705
	100%	8	16	23	31	39	78	157	235	392	626	783

Table 3.207 Mean, LCI and UCI) displacement matrices showing change in mortality rate for **guillemot** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.30%	0.44%	0.74%	1.18%	1.48%
	20%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.59%	0.89%	1.48%	2.36%	2.95%
	30%	0.04%	0.09%	0.13%	0.18%	0.22%	0.44%	0.89%	1.33%	2.22%	3.55%	4.43%
	40%	0.06%	0.12%	0.18%	0.24%	0.30%	0.59%	1.18%	1.77%	2.95%	4.73%	5.91%
	50%	0.07%	0.15%	0.22%	0.30%	0.37%	0.74%	1.48%	2.22%	3.69%	5.91%	7.39%
	60%	0.09%	0.18%	0.27%	0.35%	0.44%	0.89%	1.77%	2.66%	4.43%	7.09%	8.86%
	70%	0.10%	0.21%	0.31%	0.41%	0.52%	1.03%	2.07%	3.10%	5.17%	8.27%	10.34%
	80%	0.12%	0.24%	0.35%	0.47%	0.59%	1.18%	2.36%	3.55%	5.91%	9.45%	11.82%
	90%	0.13%	0.27%	0.40%	0.53%	0.66%	1.33%	2.66%	3.99%	6.65%	10.64%	13.29%
	100%	0.15%	0.30%	0.44%	0.59%	0.74%	1.48%	2.95%	4.43%	7.39%	11.82%	14.77%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.86%	1.08%
	20%	0.02%	0.04%	0.06%	0.09%	0.11%	0.22%	0.43%	0.65%	1.08%	1.73%	2.16%
	30%	0.03%	0.06%	0.10%	0.13%	0.16%	0.32%	0.65%	0.97%	1.62%	2.59%	3.24%
	40%	0.04%	0.09%	0.13%	0.17%	0.22%	0.43%	0.86%	1.30%	2.16%	3.46%	4.32%
	50%	0.05%	0.11%	0.16%	0.22%	0.27%	0.54%	1.08%	1.62%	2.70%	4.32%	5.41%
	60%	0.06%	0.13%	0.19%	0.26%	0.32%	0.65%	1.30%	1.95%	3.24%	5.19%	6.49%
	70%	0.08%	0.15%	0.23%	0.30%	0.38%	0.76%	1.51%	2.27%	3.78%	6.05%	7.57%
	80%	0.09%	0.17%	0.26%	0.35%	0.43%	0.86%	1.73%	2.59%	4.32%	6.92%	8.65%
	90%	0.10%	0.19%	0.29%	0.39%	0.49%	0.97%	1.95%	2.92%	4.86%	7.78%	9.73%
	100%	0.11%	0.22%	0.32%	0.43%	0.54%	1.08%	2.16%	3.24%	5.41%	8.65%	10.81%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.04%	0.06%	0.09%	0.11%	0.21%	0.43%	0.64%	1.07%	1.71%	2.14%
	20%	0.04%	0.09%	0.13%	0.17%	0.21%	0.43%	0.86%	1.28%	2.14%	3.42%	4.28%
	30%	0.06%	0.13%	0.19%	0.26%	0.32%	0.64%	1.28%	1.93%	3.21%	5.14%	6.42%
	40%	0.09%	0.17%	0.26%	0.34%	0.43%	0.86%	1.71%	2.57%	4.28%	6.85%	8.56%
	50%	0.11%	0.21%	0.32%	0.43%	0.54%	1.07%	2.14%	3.21%	5.35%	8.56%	10.70%
	60%	0.13%	0.26%	0.39%	0.51%	0.64%	1.28%	2.57%	3.85%	6.42%	10.27%	12.84%
	70%	0.15%	0.30%	0.45%	0.60%	0.75%	1.50%	3.00%	4.49%	7.49%	11.98%	14.98%
	80%	0.17%	0.34%	0.51%	0.68%	0.86%	1.71%	3.42%	5.14%	8.56%	13.70%	17.12%
	90%	0.19%	0.39%	0.58%	0.77%	0.96%	1.93%	3.85%	5.78%	9.63%	15.41%	19.26%
	100%	0.21%	0.43%	0.64%	0.86%	1.07%	2.14%	4.28%	6.42%	10.70%	17.12%	21.40%

Table 3.208 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Lambay Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	2	3	5	11	16	27	43	54
	20%	1	2	3	4	5	11	22	32	54	86	108
	30%	2	3	5	6	8	16	32	49	81	130	162
	40%	2	4	6	9	11	22	43	65	108	173	216
	50%	3	5	8	11	14	27	54	81	135	216	270
	60%	3	6	10	13	16	32	65	97	162	259	324
	70%	4	8	11	15	19	38	76	113	189	303	378
	80%	4	9	13	17	22	43	86	130	216	346	432
	90%	5	10	15	19	24	49	97	146	243	389	486
	100%	5	11	16	22	27	54	108	162	270	432	540

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	2	2	4	8	12	20	32	40
	20%	1	2	2	3	4	8	16	24	40	63	79
	30%	1	2	4	5	6	12	24	36	59	95	119
	40%	2	3	5	6	8	16	32	47	79	127	158
	50%	2	4	6	8	10	20	40	59	99	158	198
	60%	2	5	7	9	12	24	47	71	119	190	237
	70%	3	6	8	11	14	28	55	83	138	221	277
	80%	3	6	9	13	16	32	63	95	158	253	316
	90%	4	7	11	14	18	36	71	107	178	285	356
	100%	4	8	12	16	20	40	79	119	198	316	396
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	2	2	3	4	8	16	23	39	63	78
	20%	2	3	5	6	8	16	31	47	78	125	157
	30%	2	5	7	9	12	23	47	70	117	188	235
	40%	3	6	9	13	16	31	63	94	157	251	313
	50%	4	8	12	16	20	39	78	117	196	313	392
	60%	5	9	14	19	23	47	94	141	235	376	470
	70%	5	11	16	22	27	55	110	164	274	439	548
	80%	6	13	19	25	31	63	125	188	313	501	626
	90%	7	14	21	28	35	70	141	211	352	564	705
	100%	8	16	23	31	39	78	157	235	392	626	783

Table 3.209 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.30%	0.44%	0.74%	1.18%	1.48%
	20%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.59%	0.89%	1.48%	2.36%	2.95%
	30%	0.04%	0.09%	0.13%	0.18%	0.22%	0.44%	0.89%	1.33%	2.22%	3.55%	4.43%
	40%	0.06%	0.12%	0.18%	0.24%	0.30%	0.59%	1.18%	1.77%	2.95%	4.73%	5.91%
	50%	0.07%	0.15%	0.22%	0.30%	0.37%	0.74%	1.48%	2.22%	3.69%	5.91%	7.39%
	60%	0.09%	0.18%	0.27%	0.35%	0.44%	0.89%	1.77%	2.66%	4.43%	7.09%	8.86%
	70%	0.10%	0.21%	0.31%	0.41%	0.52%	1.03%	2.07%	3.10%	5.17%	8.27%	10.34%
	80%	0.12%	0.24%	0.35%	0.47%	0.59%	1.18%	2.36%	3.55%	5.91%	9.45%	11.82%
	90%	0.13%	0.27%	0.40%	0.53%	0.66%	1.33%	2.66%	3.99%	6.65%	10.64%	13.29%
	100%	0.15%	0.30%	0.44%	0.59%	0.74%	1.48%	2.95%	4.43%	7.39%	11.82%	14.77%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.86%	1.08%
	20%	0.02%	0.04%	0.06%	0.09%	0.11%	0.22%	0.43%	0.65%	1.08%	1.73%	2.16%
	30%	0.03%	0.06%	0.10%	0.13%	0.16%	0.32%	0.65%	0.97%	1.62%	2.59%	3.24%
	40%	0.04%	0.09%	0.13%	0.17%	0.22%	0.43%	0.86%	1.30%	2.16%	3.46%	4.32%
	50%	0.05%	0.11%	0.16%	0.22%	0.27%	0.54%	1.08%	1.62%	2.70%	4.32%	5.41%
	60%	0.06%	0.13%	0.19%	0.26%	0.32%	0.65%	1.30%	1.95%	3.24%	5.19%	6.49%
	70%	0.08%	0.15%	0.23%	0.30%	0.38%	0.76%	1.51%	2.27%	3.78%	6.05%	7.57%
	80%	0.09%	0.17%	0.26%	0.35%	0.43%	0.86%	1.73%	2.59%	4.32%	6.92%	8.65%
	90%	0.10%	0.19%	0.29%	0.39%	0.49%	0.97%	1.95%	2.92%	4.86%	7.78%	9.73%
	100%	0.11%	0.22%	0.32%	0.43%	0.54%	1.08%	2.16%	3.24%	5.41%	8.65%	10.81%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.04%	0.06%	0.09%	0.11%	0.21%	0.43%	0.64%	1.07%	1.71%	2.14%
	20%	0.04%	0.09%	0.13%	0.17%	0.21%	0.43%	0.86%	1.28%	2.14%	3.42%	4.28%
	30%	0.06%	0.13%	0.19%	0.26%	0.32%	0.64%	1.28%	1.93%	3.21%	5.14%	6.42%
	40%	0.09%	0.17%	0.26%	0.34%	0.43%	0.86%	1.71%	2.57%	4.28%	6.85%	8.56%
	50%	0.11%	0.21%	0.32%	0.43%	0.54%	1.07%	2.14%	3.21%	5.35%	8.56%	10.70%
	60%	0.13%	0.26%	0.39%	0.51%	0.64%	1.28%	2.57%	3.85%	6.42%	10.27%	12.84%
	70%	0.15%	0.30%	0.45%	0.60%	0.75%	1.50%	3.00%	4.49%	7.49%	11.98%	14.98%
	80%	0.17%	0.34%	0.51%	0.68%	0.86%	1.71%	3.42%	5.14%	8.56%	13.70%	17.12%
	90%	0.19%	0.39%	0.58%	0.77%	0.96%	1.93%	3.85%	5.78%	9.63%	15.41%	19.26%
	100%	0.21%	0.43%	0.64%	0.86%	1.07%	2.14%	4.28%	6.42%	10.70%	17.12%	21.40%

Table 3.210 Mean, LCI and UCI displacement matrices for **guillemot** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	1	1	2	4	6	10	12
	20%	0	0	1	1	1	2	5	7	12	20	25
	30%	0	1	1	1	2	4	7	11	19	30	37
	40%	0	1	1	2	2	5	10	15	25	40	50
	50%	1	1	2	2	3	6	12	19	31	50	62
	60%	1	1	2	3	4	7	15	22	37	60	75
	70%	1	2	3	3	4	9	17	26	44	70	87
	80%	1	2	3	4	5	10	20	30	50	80	100
	90%	1	2	3	4	6	11	22	34	56	90	112
	100%	1	2	4	5	6	12	25	37	62	100	125

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	3	5	7	9
	20%	0	0	1	1	1	2	4	5	9	15	18
	30%	0	1	1	1	1	3	5	8	14	22	27
	40%	0	1	1	1	2	4	7	11	18	29	37
	50%	0	1	1	2	2	5	9	14	23	37	46
	60%	1	1	2	2	3	5	11	16	27	44	55
	70%	1	1	2	3	3	6	13	19	32	51	64
	80%	1	1	2	3	4	7	15	22	37	58	73
	90%	1	2	2	3	4	8	16	25	41	66	82
	100%	1	2	3	4	5	9	18	27	46	73	91
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	5	9	14	18
	20%	0	1	1	1	2	4	7	11	18	29	36
	30%	1	1	2	2	3	5	11	16	27	43	54
	40%	1	1	2	3	4	7	14	22	36	58	72
	50%	1	2	3	4	5	9	18	27	45	72	90
	60%	1	2	3	4	5	11	22	33	54	87	108
	70%	1	3	4	5	6	13	25	38	63	101	126
	80%	1	3	4	6	7	14	29	43	72	116	145
	90%	2	3	5	7	8	16	33	49	81	130	163
	100%	2	4	5	7	9	18	36	54	90	145	181

Table 3.211 Mean, LCI and UCI displacement matrices showing change in mortality rate for **guillemot** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.17%
	20%	0.02%	0.05%	0.07%	0.09%	0.12%	0.23%	0.47%	0.70%	1.17%	1.87%	2.34%
	30%	0.04%	0.07%	0.11%	0.14%	0.18%	0.35%	0.70%	1.05%	1.75%	2.80%	3.50%
	40%	0.05%	0.09%	0.14%	0.19%	0.23%	0.47%	0.93%	1.40%	2.34%	3.74%	4.67%
	50%	0.06%	0.12%	0.18%	0.23%	0.29%	0.58%	1.17%	1.75%	2.92%	4.67%	5.84%
	60%	0.07%	0.14%	0.21%	0.28%	0.35%	0.70%	1.40%	2.10%	3.50%	5.61%	7.01%
	70%	0.08%	0.16%	0.25%	0.33%	0.41%	0.82%	1.64%	2.45%	4.09%	6.54%	8.18%
	80%	0.09%	0.19%	0.28%	0.37%	0.47%	0.93%	1.87%	2.80%	4.67%	7.48%	9.35%
	90%	0.11%	0.21%	0.32%	0.42%	0.53%	1.05%	2.10%	3.15%	5.26%	8.41%	10.51%
	100%	0.12%	0.23%	0.35%	0.47%	0.58%	1.17%	2.34%	3.50%	5.84%	9.35%	11.68%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.68%	0.86%
	20%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.34%	0.51%	0.86%	1.37%	1.71%
	30%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.51%	0.77%	1.28%	2.05%	2.57%
	40%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.68%	1.03%	1.71%	2.74%	3.42%
	50%	0.04%	0.09%	0.13%	0.17%	0.21%	0.43%	0.86%	1.28%	2.14%	3.42%	4.28%
	60%	0.05%	0.10%	0.15%	0.21%	0.26%	0.51%	1.03%	1.54%	2.57%	4.10%	5.13%
	70%	0.06%	0.12%	0.18%	0.24%	0.30%	0.60%	1.20%	1.80%	2.99%	4.79%	5.99%
	80%	0.07%	0.14%	0.21%	0.27%	0.34%	0.68%	1.37%	2.05%	3.42%	5.47%	6.84%
	90%	0.08%	0.15%	0.23%	0.31%	0.38%	0.77%	1.54%	2.31%	3.85%	6.16%	7.70%
	100%	0.09%	0.17%	0.26%	0.34%	0.43%	0.86%	1.71%	2.57%	4.28%	6.84%	8.55%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.34%	0.51%	0.85%	1.35%	1.69%
	20%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.68%	1.02%	1.69%	2.71%	3.39%
	30%	0.05%	0.10%	0.15%	0.20%	0.25%	0.51%	1.02%	1.52%	2.54%	4.06%	5.08%
	40%	0.07%	0.14%	0.20%	0.27%	0.34%	0.68%	1.35%	2.03%	3.39%	5.42%	6.77%
	50%	0.08%	0.17%	0.25%	0.34%	0.42%	0.85%	1.69%	2.54%	4.23%	6.77%	8.46%
	60%	0.10%	0.20%	0.30%	0.41%	0.51%	1.02%	2.03%	3.05%	5.08%	8.13%	10.16%
	70%	0.12%	0.24%	0.36%	0.47%	0.59%	1.18%	2.37%	3.55%	5.92%	9.48%	11.85%
	80%	0.14%	0.27%	0.41%	0.54%	0.68%	1.35%	2.71%	4.06%	6.77%	10.83%	13.54%
	90%	0.15%	0.30%	0.46%	0.61%	0.76%	1.52%	3.05%	4.57%	7.62%	12.19%	15.23%
	100%	0.17%	0.34%	0.51%	0.68%	0.85%	1.69%	3.39%	5.08%	8.46%	13.54%	16.93%

Table 3.212 Mean, LCI and UCI **year-round** displacement matrices for **guillemot** apportioned to **Saltee Islands SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	1	1	2	4	6	10	12
	20%	0	0	1	1	1	2	5	7	12	20	25
	30%	0	1	1	1	2	4	7	11	19	30	37
	40%	0	1	1	2	2	5	10	15	25	40	50
	50%	1	1	2	2	3	6	12	19	31	50	62
	60%	1	1	2	3	4	7	15	22	37	60	75
	70%	1	2	3	3	4	9	17	26	44	70	87
	80%	1	2	3	4	5	10	20	30	50	80	100
	90%	1	2	3	4	6	11	22	34	56	90	112
	100%	1	2	4	5	6	12	25	37	62	100	125

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	3	5	7	9
	20%	0	0	1	1	1	2	4	5	9	15	18
	30%	0	1	1	1	1	3	5	8	14	22	27
	40%	0	1	1	1	2	4	7	11	18	29	37
	50%	0	1	1	2	2	5	9	14	23	37	46
	60%	1	1	2	2	3	5	11	16	27	44	55
	70%	1	1	2	3	3	6	13	19	32	51	64
	80%	1	1	2	3	4	7	15	22	37	58	73
	90%	1	2	2	3	4	8	16	25	41	66	82
	100%	1	2	3	4	5	9	18	27	46	73	91
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	5	9	14	18
	20%	0	1	1	1	2	4	7	11	18	29	36
	30%	1	1	2	2	3	5	11	16	27	43	54
	40%	1	1	2	3	4	7	14	22	36	58	72
	50%	1	2	3	4	5	9	18	27	45	72	90
	60%	1	2	3	4	5	11	22	33	54	87	108
	70%	1	3	4	5	6	13	25	38	63	101	126
	80%	1	3	4	6	7	14	29	43	72	116	145
	90%	2	3	5	7	8	16	33	49	81	130	163
	100%	2	4	5	7	9	18	36	54	90	145	181

Table 3.213 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **guillemot** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.17%
	20%	0.02%	0.05%	0.07%	0.09%	0.12%	0.23%	0.47%	0.70%	1.17%	1.87%	2.34%
	30%	0.04%	0.07%	0.11%	0.14%	0.18%	0.35%	0.70%	1.05%	1.75%	2.80%	3.50%
	40%	0.05%	0.09%	0.14%	0.19%	0.23%	0.47%	0.93%	1.40%	2.34%	3.74%	4.67%
	50%	0.06%	0.12%	0.18%	0.23%	0.29%	0.58%	1.17%	1.75%	2.92%	4.67%	5.84%
	60%	0.07%	0.14%	0.21%	0.28%	0.35%	0.70%	1.40%	2.10%	3.50%	5.61%	7.01%
	70%	0.08%	0.16%	0.25%	0.33%	0.41%	0.82%	1.64%	2.45%	4.09%	6.54%	8.18%
	80%	0.09%	0.19%	0.28%	0.37%	0.47%	0.93%	1.87%	2.80%	4.67%	7.48%	9.35%
	90%	0.11%	0.21%	0.32%	0.42%	0.53%	1.05%	2.10%	3.15%	5.26%	8.41%	10.51%
	100%	0.12%	0.23%	0.35%	0.47%	0.58%	1.17%	2.34%	3.50%	5.84%	9.35%	11.68%



LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.68%	0.86%
	20%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.34%	0.51%	0.86%	1.37%	1.71%
	30%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.51%	0.77%	1.28%	2.05%	2.57%
	40%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.68%	1.03%	1.71%	2.74%	3.42%
	50%	0.04%	0.09%	0.13%	0.17%	0.21%	0.43%	0.86%	1.28%	2.14%	3.42%	4.28%
	60%	0.05%	0.10%	0.15%	0.21%	0.26%	0.51%	1.03%	1.54%	2.57%	4.10%	5.13%
	70%	0.06%	0.12%	0.18%	0.24%	0.30%	0.60%	1.20%	1.80%	2.99%	4.79%	5.99%
	80%	0.07%	0.14%	0.21%	0.27%	0.34%	0.68%	1.37%	2.05%	3.42%	5.47%	6.84%
	90%	0.08%	0.15%	0.23%	0.31%	0.38%	0.77%	1.54%	2.31%	3.85%	6.16%	7.70%
	100%	0.09%	0.17%	0.26%	0.34%	0.43%	0.86%	1.71%	2.57%	4.28%	6.84%	8.55%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.34%	0.51%	0.85%	1.35%	1.69%
	20%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.68%	1.02%	1.69%	2.71%	3.39%
	30%	0.05%	0.10%	0.15%	0.20%	0.25%	0.51%	1.02%	1.52%	2.54%	4.06%	5.08%
	40%	0.07%	0.14%	0.20%	0.27%	0.34%	0.68%	1.35%	2.03%	3.39%	5.42%	6.77%
	50%	0.08%	0.17%	0.25%	0.34%	0.42%	0.85%	1.69%	2.54%	4.23%	6.77%	8.46%
	60%	0.10%	0.20%	0.30%	0.41%	0.51%	1.02%	2.03%	3.05%	5.08%	8.13%	10.16%
	70%	0.12%	0.24%	0.36%	0.47%	0.59%	1.18%	2.37%	3.55%	5.92%	9.48%	11.85%
	80%	0.14%	0.27%	0.41%	0.54%	0.68%	1.35%	2.71%	4.06%	6.77%	10.83%	13.54%
	90%	0.15%	0.30%	0.46%	0.61%	0.76%	1.52%	3.05%	4.57%	7.62%	12.19%	15.23%
	100%	0.17%	0.34%	0.51%	0.68%	0.85%	1.69%	3.39%	5.08%	8.46%	13.54%	16.93%

Table 3.214 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Ailsa Craig SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	2	2	4	8	12	20	32	40
	20%	1	2	2	3	4	8	16	24	40	64	80
	30%	1	2	4	5	6	12	24	36	60	96	120
	40%	2	3	5	6	8	16	32	48	80	128	160
	50%	2	4	6	8	10	20	40	60	100	160	200
	60%	2	5	7	10	12	24	48	72	120	192	240
	70%	3	6	8	11	14	28	56	84	140	224	280
	80%	3	6	10	13	16	32	64	96	160	256	319
	90%	4	7	11	14	18	36	72	108	180	288	359
	100%	4	8	12	16	20	40	80	120	200	319	399

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	1	1	2	4	6	9	12
	20%	0	0	1	1	1	2	5	7	12	19	24
	30%	0	1	1	1	2	4	7	11	18	28	35
	40%	0	1	1	2	2	5	9	14	24	38	47
	50%	1	1	2	2	3	6	12	18	30	47	59
	60%	1	1	2	3	4	7	14	21	35	57	71
	70%	1	2	2	3	4	8	17	25	41	66	83
	80%	1	2	3	4	5	9	19	28	47	76	94
	90%	1	2	3	4	5	11	21	32	53	85	106
	100%	1	2	4	5	6	12	24	35	59	94	118
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	2	3	6	12	18	30	48	60
	20%	1	2	4	5	6	12	24	36	60	96	119
	30%	2	4	5	7	9	18	36	54	90	143	179
	40%	2	5	7	10	12	24	48	72	119	191	239
	50%	3	6	9	12	15	30	60	90	149	239	299
	60%	4	7	11	14	18	36	72	108	179	287	358
	70%	5	8	13	17	21	42	84	125	209	334	418
	80%	5	10	14	19	24	48	96	143	239	382	478
	90%	5	11	16	22	27	54	108	161	269	430	538
	100%	6	12	18	24	30	60	119	179	299	478	597

Table 3.215 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Ailsa Craig SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.59%	0.74%
	20%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.30%	0.45%	0.74%	1.19%	1.48%
	30%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.45%	0.67%	1.11%	1.78%	2.23%
	40%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.59%	0.89%	1.48%	2.37%	2.97%
	50%	0.04%	0.07%	0.11%	0.15%	0.19%	0.37%	0.74%	1.11%	1.85%	2.97%	3.71%
	60%	0.04%	0.09%	0.13%	0.18%	0.22%	0.45%	0.89%	1.34%	2.23%	3.56%	4.45%
	70%	0.05%	0.10%	0.16%	0.21%	0.26%	0.52%	1.04%	1.56%	2.60%	4.15%	5.19%
	80%	0.06%	0.12%	0.18%	0.24%	0.30%	0.59%	1.19%	1.78%	2.97%	4.75%	5.93%
	90%	0.07%	0.13%	0.20%	0.27%	0.33%	0.67%	1.34%	2.00%	3.34%	5.34%	6.68%
	100%	0.07%	0.15%	0.22%	0.30%	0.37%	0.74%	1.48%	2.23%	3.71%	5.93%	7.42%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.66%
	40%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.26%	0.44%	0.70%	0.88%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.33%	0.55%	0.88%	1.10%
	60%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.26%	0.39%	0.66%	1.05%	1.32%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.31%	0.46%	0.77%	1.23%	1.54%
	80%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.35%	0.53%	0.88%	1.40%	1.75%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.39%	0.59%	0.99%	1.58%	1.97%
	100%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.44%	0.66%	1.10%	1.75%	2.19%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.03%	0.04%	0.06%	0.11%	0.22%	0.33%	0.55%	0.89%	1.11%
	20%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.44%	0.67%	1.11%	1.78%	2.22%
	30%	0.03%	0.07%	0.10%	0.13%	0.17%	0.33%	0.67%	1.00%	1.66%	2.66%	3.33%
	40%	0.04%	0.09%	0.13%	0.18%	0.22%	0.44%	0.89%	1.33%	2.22%	3.55%	4.44%
	50%	0.06%	0.11%	0.17%	0.22%	0.28%	0.55%	1.11%	1.66%	2.77%	4.44%	5.55%
	60%	0.07%	0.13%	0.20%	0.27%	0.33%	0.67%	1.33%	2.00%	3.33%	5.33%	6.66%
	70%	0.08%	0.16%	0.23%	0.31%	0.39%	0.78%	1.55%	2.33%	3.88%	6.21%	7.77%
	80%	0.09%	0.18%	0.27%	0.36%	0.44%	0.89%	1.78%	2.66%	4.44%	7.10%	8.88%
	90%	0.10%	0.20%	0.30%	0.40%	0.50%	1.00%	2.00%	3.00%	4.99%	7.99%	9.99%
	100%	0.11%	0.22%	0.33%	0.44%	0.55%	1.11%	2.22%	3.33%	5.55%	8.88%	11.10%

Table 3.216 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Ailsa Craig SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	0	1	1	2	4	5
	50%	0	0	0	0	0	1	1	2	3	5	6
	60%	0	0	0	0	0	1	1	2	4	6	7
	70%	0	0	0	0	0	1	2	3	4	7	9
	80%	0	0	0	0	0	1	2	3	5	8	10
	90%	0	0	0	0	1	1	2	3	6	9	11
	100%	0	0	0	0	1	1	2	4	6	10	12

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	1	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	4	6
	40%	0	0	0	0	0	1	1	2	4	6	7
	50%	0	0	0	0	0	1	2	3	5	7	9
	60%	0	0	0	0	1	1	2	3	6	9	11
	70%	0	0	0	1	1	1	3	4	7	10	13
	80%	0	0	0	1	1	1	3	4	7	12	15
	90%	0	0	1	1	1	2	3	5	8	13	17
	100%	0	0	1	1	1	2	4	6	9	15	19

Table 3.217 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Ailsa Craig SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%
	50%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	60%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	70%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.15%	0.18%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.21%
	100%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.07%	
	30%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%	
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%	
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.14%	0.17%	
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.17%	0.21%	
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%	
	80%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.22%	0.28%	
	90%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%	
	100%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%	

Table 3.218 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Ailsa Craig SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	1
	90%	0	0	0	0	0	0	0	0	0	0	1
	100%	0	0	0	0	0	0	0	0	0	1	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1

Table 3.219 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Ailsa Craig SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	

Table 3.220 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Ailsa Craig SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	1	1	2	2	4	8	12	21	33	41
	20%	1	2	2	3	4	8	16	25	41	66	82
	30%	1	2	4	5	6	12	25	37	62	99	124
	40%	2	3	5	7	8	16	33	49	82	132	165
	50%	2	4	6	8	10	21	41	62	103	165	206
	60%	2	5	7	10	12	25	49	74	124	198	247
	70%	3	6	9	12	14	29	58	87	144	231	289
	80%	3	7	10	13	16	33	66	99	165	264	330
	90%	4	7	11	15	19	37	74	111	186	297	371
	100%	4	8	12	16	21	41	82	124	206	330	412

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	1	1	2	4	6	9	12
	20%	0	0	1	1	1	2	5	7	12	19	24
	30%	0	1	1	1	2	4	7	11	18	28	35
	40%	0	1	1	2	2	5	9	14	24	38	47
	50%	1	1	2	2	3	6	12	18	30	47	59
	60%	1	1	2	3	4	7	14	21	35	57	71
	70%	1	2	2	3	4	8	17	25	41	66	83
	80%	1	2	3	4	5	9	19	28	47	76	94
	90%	1	2	3	4	5	11	21	32	53	85	106
	100%	1	2	4	5	6	12	24	35	59	94	118
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	1	1	2	2	3	6	12	19	31	49	62
	20%	1	2	4	5	6	12	25	37	62	99	123
	30%	2	4	6	7	9	19	37	56	93	148	185
	40%	2	5	7	10	12	25	49	74	123	198	247
	50%	3	6	9	12	15	31	62	93	154	247	309
	60%	4	7	11	15	19	37	74	111	185	296	370
	70%	4	9	13	17	22	43	86	130	216	346	432
	80%	5	10	15	20	25	49	99	148	247	395	494
	90%	6	11	17	22	28	56	111	167	278	444	556
	100%	6	12	19	25	31	62	123	185	309	494	617

Table 3.221 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Ailsa Craig SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.38%	0.61%	0.77%
	20%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.31%	0.46%	0.77%	1.23%	1.53%
	30%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.69%	1.15%	1.84%	2.30%
	40%	0.03%	0.06%	0.09%	0.12%	0.15%	0.31%	0.61%	0.92%	1.53%	2.45%	3.06%
	50%	0.04%	0.08%	0.11%	0.15%	0.19%	0.38%	0.77%	1.15%	1.91%	3.06%	3.83%
	60%	0.05%	0.09%	0.14%	0.18%	0.23%	0.46%	0.92%	1.38%	2.30%	3.68%	4.60%
	70%	0.05%	0.11%	0.16%	0.21%	0.27%	0.54%	1.07%	1.61%	2.68%	4.29%	5.36%
	80%	0.06%	0.12%	0.18%	0.25%	0.31%	0.61%	1.23%	1.84%	3.06%	4.90%	6.13%
	90%	0.07%	0.14%	0.21%	0.28%	0.34%	0.69%	1.38%	2.07%	3.45%	5.51%	6.89%
	100%	0.08%	0.15%	0.23%	0.31%	0.38%	0.77%	1.53%	2.30%	3.83%	6.13%	7.66%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.66%
	40%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.26%	0.44%	0.70%	0.88%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.33%	0.55%	0.88%	1.10%
	60%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.26%	0.39%	0.66%	1.05%	1.32%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.31%	0.46%	0.77%	1.23%	1.54%
	80%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.35%	0.53%	0.88%	1.40%	1.75%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.39%	0.59%	0.99%	1.58%	1.97%
	100%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.44%	0.66%	1.10%	1.75%	2.19%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.92%	1.15%
	20%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.69%	1.15%	1.84%	2.29%
	30%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.69%	1.03%	1.72%	2.75%	3.44%
	40%	0.05%	0.09%	0.14%	0.18%	0.23%	0.46%	0.92%	1.38%	2.29%	3.67%	4.59%
	50%	0.06%	0.11%	0.17%	0.23%	0.29%	0.57%	1.15%	1.72%	2.87%	4.59%	5.73%
	60%	0.07%	0.14%	0.21%	0.28%	0.34%	0.69%	1.38%	2.06%	3.44%	5.51%	6.88%
	70%	0.08%	0.16%	0.24%	0.32%	0.40%	0.80%	1.61%	2.41%	4.01%	6.42%	8.03%
	80%	0.09%	0.18%	0.28%	0.37%	0.46%	0.92%	1.84%	2.75%	4.59%	7.34%	9.18%
	90%	0.10%	0.21%	0.31%	0.41%	0.52%	1.03%	2.06%	3.10%	5.16%	8.26%	10.32%
	100%	0.11%	0.23%	0.34%	0.46%	0.57%	1.15%	2.29%	3.44%	5.73%	9.18%	11.47%

Table 3.222 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Flamborough and Filey Coast SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.223 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Flamborough and Filey Coast SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	

Table 3.224 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Flamborough and Filey Coast SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.225 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Flamborough and Filey Coast SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	

Table 3.226 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Outer Firth of Forth and St Andrews Bay Complex SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1

Table 3.227 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Outer Firth of Forth and St Andrews Bay Complex SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	

Table 3.228 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Outer Firth of Forth and St Andrews Bay Complex SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1

Table 3.229 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Outer Firth of Forth and St Andrews Bay Complex SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	

Table 3.230 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Grassholm SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.231 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Grassholm SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.232 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Grassholm SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	1	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	4	5
	40%	0	0	0	0	0	1	1	2	4	6	7
	50%	0	0	0	0	0	1	2	3	4	7	9
	60%	0	0	0	0	1	1	2	3	5	9	11
	70%	0	0	0	0	1	1	2	4	6	10	12
	80%	0	0	0	1	1	1	3	4	7	11	14
	90%	0	0	0	1	1	2	3	5	8	13	16
	100%	0	0	1	1	1	2	4	5	9	14	18

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	1	2	3
	20%	0	0	0	0	0	1	1	2	3	4	5
	30%	0	0	0	0	0	1	2	2	4	7	8
	40%	0	0	0	0	1	1	2	3	5	9	11
	50%	0	0	0	1	1	1	3	4	7	11	14
	60%	0	0	0	1	1	2	3	5	8	13	16
	70%	0	0	1	1	1	2	4	6	10	15	19
	80%	0	0	1	1	1	2	4	7	11	17	22
	90%	0	0	1	1	1	2	5	7	12	20	24
	100%	0	1	1	1	1	3	5	8	14	22	27

Table 3.233 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Grassholm SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%
	40%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.15%	0.18%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.21%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.20%	0.24%
	90%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.22%	0.28%
	100%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.24%	0.31%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	20%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%	
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%	
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.15%	0.19%	
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%	
	60%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.22%	0.28%	
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.16%	0.26%	0.33%	
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.19%	0.30%	0.37%	
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.13%	0.21%	0.34%	0.42%	
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.47%	

Table 3.234 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Grassholm SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	2
	90%	0	0	0	0	0	0	0	1	1	1	2
	100%	0	0	0	0	0	0	0	1	1	2	2

Table 3.235 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Grassholm SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	

Table 3.236 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Grassholm SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	2	4	6	8
	50%	0	0	0	0	0	1	2	3	5	8	9
	60%	0	0	0	0	1	1	2	3	6	9	11
	70%	0	0	0	1	1	1	3	4	7	11	13
	80%	0	0	0	1	1	2	3	5	8	12	15
	90%	0	0	1	1	1	2	3	5	8	14	17
	100%	0	0	1	1	1	2	4	6	9	15	19

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	1	2	3
	20%	0	0	0	0	0	1	1	2	3	5	6
	30%	0	0	0	0	0	1	2	3	4	7	9
	40%	0	0	0	0	1	1	2	3	6	9	12
	50%	0	0	0	1	1	1	3	4	7	12	15
	60%	0	0	1	1	1	2	3	5	9	14	17
	70%	0	0	1	1	1	2	4	6	10	16	20
	80%	0	0	1	1	1	2	5	7	12	19	23
	90%	0	1	1	1	1	3	5	8	13	21	26
	100%	0	1	1	1	1	3	6	9	15	23	29

Table 3.237 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Grassholm SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	80%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	90%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%
	100%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.26%	0.32%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%	
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%	
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%	
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.20%	0.25%	
	60%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%	
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%	
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%	
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%	
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%	

Table 3.238 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **St Kilda SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.239 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.240 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **St Kilda SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	4	5
	30%	0	0	0	0	0	1	1	2	4	6	7
	40%	0	0	0	0	0	1	2	3	5	8	10
	50%	0	0	0	0	1	1	2	4	6	10	12
	60%	0	0	0	1	1	1	3	4	7	12	15
	70%	0	0	1	1	1	2	3	5	9	14	17
	80%	0	0	1	1	1	2	4	6	10	16	20
	90%	0	0	1	1	1	2	4	7	11	18	22
	100%	0	0	1	1	1	2	5	7	12	20	24

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	0	1	1	2	4	6	7
	30%	0	0	0	0	1	1	2	3	6	9	11
	40%	0	0	0	1	1	1	3	4	7	12	15
	50%	0	0	1	1	1	2	4	6	9	15	19
	60%	0	0	1	1	1	2	4	7	11	18	22
	70%	0	1	1	1	1	3	5	8	13	21	26
	80%	0	1	1	1	1	3	6	9	15	24	30
	90%	0	1	1	1	2	3	7	10	17	27	34
	100%	0	1	1	1	2	4	7	11	19	30	37

Table 3.241 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	50%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	60%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.14%	0.17%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	100%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.20%	0.25%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%	
	30%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%	
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%	
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%	
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%	
	70%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.27%	
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%	
	90%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%	
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.30%	0.38%	

Table 3.242 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **St Kilda SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1
	60%	0	0	0	0	0	0	0	1	1	1	2
	70%	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	0	1	1	2	2
	90%	0	0	0	0	0	0	1	1	1	2	3
	100%	0	0	0	0	0	0	1	1	1	2	3

Table 3.243 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	

Table 3.244 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **St Kilda SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	1	2	3
	20%	0	0	0	0	0	1	1	2	3	4	5
	30%	0	0	0	0	0	1	2	2	4	6	8
	40%	0	0	0	0	1	1	2	3	5	8	10
	50%	0	0	0	1	1	1	3	4	6	10	13
	60%	0	0	0	1	1	2	3	5	8	12	15
	70%	0	0	1	1	1	2	4	5	9	14	18
	80%	0	0	1	1	1	2	4	6	10	17	21
	90%	0	0	1	1	1	2	5	7	12	19	23
	100%	0	1	1	1	1	3	5	8	13	21	26

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	0	1	2	2	4	6	8
	30%	0	0	0	0	1	1	2	4	6	10	12
	40%	0	0	0	1	1	2	3	5	8	13	16
	50%	0	0	1	1	1	2	4	6	10	16	20
	60%	0	0	1	1	1	2	5	7	12	19	24
	70%	0	1	1	1	1	3	6	8	14	22	28
	80%	0	1	1	1	2	3	6	10	16	26	32
	90%	0	1	1	1	2	4	7	11	18	29	36
	100%	0	1	1	2	2	4	8	12	20	32	40

Table 3.245 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	40%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.11%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.13%
	60%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.15%	0.19%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.21%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	100%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.07%	0.08%	
	30%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%	
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%	
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.21%	
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.20%	0.25%	
	70%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%	
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.16%	0.26%	0.33%	
	90%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.30%	0.37%	
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.21%	0.33%	0.41%	

Table 3.246 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.247 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.248 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	1	1	1	2
	100%	0	0	0	0	0	0	0	1	1	1	2

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1
	60%	0	0	0	0	0	0	0	1	1	1	2
	70%	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	0	1	1	2	2
	90%	0	0	0	0	0	0	1	1	1	2	3
	100%	0	0	0	0	0	0	1	1	1	2	3

Table 3.249 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	40%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	60%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	100%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%	
	30%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%	
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.16%	
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.19%	
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%	
	70%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%	
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%	
	90%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%	
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%	

Table 3.250 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Sule Skerry and Sure Stack SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.251 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.02%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.02%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.02%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.03%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%	0.03%

Table 3.252 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	2
	90%	0	0	0	0	0	0	0	1	1	1	2
	100%	0	0	0	0	0	0	0	1	1	2	2

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	1	1	2
	60%	0	0	0	0	0	0	0	1	1	1	2
	70%	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	0	1	1	2	2
	90%	0	0	0	0	0	0	1	1	1	2	3
	100%	0	0	0	0	0	0	1	1	2	2	3

Table 3.253 Mean, LCI and UCI year-round displacement matrices showing change in mortality rate for **gannet** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	40%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.11%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.13%
	60%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.15%	0.19%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.22%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	100%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.22%	0.27%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.08%	
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%	
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.17%	
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.17%	0.21%	
	60%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%	
	70%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.23%	0.29%	
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.33%	
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.30%	0.38%	
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.13%	0.21%	0.33%	0.42%	

Table 3.254 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **North Rona and Sula Sgeir SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.255 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **North Rona and Sula Sgeir SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.256 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **North Rona and Sula Sgeir SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1	2
	60%	0	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	0	1	1	1	2	3
	80%	0	0	0	0	0	0	0	1	1	1	2	3
	90%	0	0	0	0	0	0	0	1	1	2	3	3
	100%	0	0	0	0	0	0	0	1	1	2	3	4

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	1	2
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	1	1	1	2	3
	60%	0	0	0	0	0	0	1	1	2	3	3
	70%	0	0	0	0	0	0	1	1	2	3	4
	80%	0	0	0	0	0	0	1	1	2	4	5
	90%	0	0	0	0	0	1	1	2	3	4	5
	100%	0	0	0	0	0	1	1	2	3	5	6

Table 3.257 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **North Rona and Sula Sgeir SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	0%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.07%	0.08%
	50%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	60%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	70%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	80%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.15%	0.18%
	100%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%	
	40%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%	
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.16%	
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.15%	0.19%	
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.17%	0.22%	
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.20%	0.25%	
	90%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.22%	0.28%	
	100%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%	

Table 3.258 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **North Rona and Sula Sgeir SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.259 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **North Rona and Sula Sgeir SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	

Table 3.260 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **North Rona and Sula Sgeir SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1	2
	50%	0	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	0	1	1	1	2	3
	80%	0	0	0	0	0	0	0	1	1	2	3	3
	90%	0	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	0	1	1	2	3	4

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	1	2
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	1	1	2	2	3
	60%	0	0	0	0	0	0	1	1	2	3	4
	70%	0	0	0	0	0	0	1	1	2	3	4
	80%	0	0	0	0	0	0	1	1	2	4	5
	90%	0	0	0	0	0	1	1	2	3	4	6
	100%	0	0	0	0	0	1	1	2	3	5	6

Table 3.261 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **North Rona and Sula Sgeir SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	50%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.11%
	60%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	70%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.14%	0.17%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.19%
	100%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.22%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%
	30%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.13%
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.17%
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	80%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.22%	0.27%
	90%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	100%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%

Table 3.262 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Noss SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.263 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Noss SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.264 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Noss SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	1
	70%	0	0	0	0	0	0	0	0	0	0	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1

Table 3.265 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Noss SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%	



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%	

Table 3.266 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Noss SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.267 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Noss SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	

Table 3.268 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Noss SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1

Table 3.269 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Noss SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.02%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.02%	0.03%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%	0.03%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.04%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%	0.05%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%	0.05%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.06%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%	

Table 3.270 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Hermaness, Saxa Vord and Valla Field SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.271 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Hermaness, Saxa Vord and Valla SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.272 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Hermaness, Saxa Vord and Valla SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	2
	80%	0	0	0	0	0	0	0	1	1	1	2
	90%	0	0	0	0	0	0	0	1	1	2	2
	100%	0	0	0	0	0	0	0	1	1	2	2

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	1	1	1	2
	60%	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	1	1	1	2	3
	90%	0	0	0	0	0	0	1	1	2	2	3
	100%	0	0	0	0	0	0	1	1	2	3	3

Table 3.273 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Hermaness, Saxa Vord and Valla SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.07%	0.08%	

Table 3.274 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Hermaness, Saxa Vord and Valla SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.275 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Hermaness, Saxa Vord and Valla SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	

Table 3.276 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Hermaness, Saxa Vord and Valla SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	1	1	1	2
	80%	0	0	0	0	0	0	0	1	1	2	2
	90%	0	0	0	0	0	0	0	1	1	2	2
	100%	0	0	0	0	0	0	0	1	1	2	2

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	1	1	1	2	3
	80%	0	0	0	0	0	0	1	1	2	2	3
	90%	0	0	0	0	0	0	1	1	2	3	3
	100%	0	0	0	0	0	0	1	1	2	3	4

Table 3.277 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Hermaness, Saxa Vord and Valla SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.07%	0.08%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%	

Table 3.278 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.279 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.280 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	1	1	1	2
	90%	0	0	0	0	0	0	0	1	1	2	2
	100%	0	0	0	0	0	0	0	1	1	2	2

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	1	1	2
	60%	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	1	1	1	2	3
	90%	0	0	0	0	0	0	1	1	1	2	3
	100%	0	0	0	0	0	0	1	1	2	3	3

Table 3.281 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.06%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.07%	0.08%
	40%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	60%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.17%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.20%	0.25%
	100%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.22%	0.28%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.08%	
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%	
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.17%	
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.17%	0.21%	
	60%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%	
	70%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.29%	
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%	
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.30%	0.38%	
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.13%	0.21%	0.34%	0.42%	

Table 3.282 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.283 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	

Table 3.284 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Saltee Islands SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	2
	80%	0	0	0	0	0	0	0	1	1	1	2
	90%	0	0	0	0	0	0	0	1	1	2	2
	100%	0	0	0	0	0	0	0	1	1	2	2

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	1	1	1	2
	60%	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	1	1	1	2	3
	90%	0	0	0	0	0	0	1	1	2	2	3
	100%	0	0	0	0	0	0	1	1	2	3	3

Table 3.285 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	40%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.14%
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.14%	0.17%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%
	90%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	100%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.04%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%	
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.13%	
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%	
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%	
	60%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.22%	0.27%	
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%	
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%	
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%	
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%	

Table 3.286 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **The Bull and the Cow Rocks SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.287 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **The Bull and the Cow Rocks SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.288 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **The Bull and the Cow Rocks SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	1
	100%	0	0	0	0	0	0	0	0	0	0	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1

Table 3.289 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **The Bull and the Cow Rocks SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.02%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.02%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.03%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.04%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.04%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%	0.05%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%	0.05%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	0.06%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.07%	0.08%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%	

Table 3.290 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **The Bull and the Cow Rocks SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.291 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **The Bull and the Cow Rocks SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	

Table 3.292 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **The Bull and the Cow Rocks SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	1
	90%	0	0	0	0	0	0	0	0	0	0	1
	100%	0	0	0	0	0	0	0	0	0	1	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	1
	60%	0	0	0	0	0	0	0	0	0	0	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1

Table 3.293 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **The Bull and the Cow Rocks SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%	
	100%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%	

Table 3.294 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Skelligs SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.295 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Skelligs SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1	2
	60%	0	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	0	1	1	1	2	3
	90%	0	0	0	0	0	0	0	1	1	1	2	3
	100%	0	0	0	0	0	0	0	1	1	2	3	3

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	1	1	1	2	3
	70%	0	0	0	0	0	0	1	1	2	3	3
	80%	0	0	0	0	0	0	1	1	2	3	4
	90%	0	0	0	0	0	0	1	1	2	4	4
	100%	0	0	0	0	0	0	1	1	2	4	5

Table 3.296 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%	

Table 3.297 Mean, LCI and UCI displacement matrices for **gannet** apportioned to **Skelligs SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	1

Table 3.298 Mean, LCI and UCI displacement matrices showing change in mortality rate for **gannet** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	

Table 3.299 Mean, LCI and UCI **year-round** displacement matrices for **gannet** apportioned to **Skelligs SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1	2
	60%	0	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	0	1	1	1	2	3
	90%	0	0	0	0	0	0	0	1	1	2	3	3
	100%	0	0	0	0	0	0	0	1	1	2	3	3

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	0	1	1	2
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	1	1	1	2	3
	60%	0	0	0	0	0	0	1	1	2	3	3
	70%	0	0	0	0	0	0	1	1	2	3	4
	80%	0	0	0	0	0	0	1	1	2	3	4
	90%	0	0	0	0	0	0	1	1	2	4	5
	100%	0	0	0	0	0	1	1	2	3	4	5

Table 3.300 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **gannet** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.02%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.02%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%	0.03%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.04%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.04%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%	0.05%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%	0.05%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	0.06%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.09%	

Table 3.301 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Rathlin Island SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.302 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%	
	100%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.11%	

Table 3.303 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Rathlin Island SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	1

Table 3.304 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.31%	0.38%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	80%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	90%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	100%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.27%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.42%	0.53%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.66%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.64%	0.80%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.19%	0.28%	0.46%	0.74%	0.93%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.85%	1.06%
	90%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.60%	0.96%	1.19%
	100%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.27%	0.40%	0.66%	1.06%	1.33%

Table 3.305 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Rathlin Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	1

Table 3.306 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.33%	0.41%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.14%	0.24%	0.38%	0.48%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.54%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.31%	0.49%	0.61%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.20%	0.34%	0.54%	0.68%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%
	80%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	90%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.12%
	100%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.10%	0.13%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.34%	0.43%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	50%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.22%	0.36%	0.57%	0.72%
	60%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.69%	0.86%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.80%	1.01%
	80%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.92%	1.15%
	90%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.65%	1.03%	1.29%
	100%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.29%	0.43%	0.72%	1.15%	1.44%

Table 3.307 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Farne Islands SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1

Table 3.308 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Farne Islands SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	

Table 3.309 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Farne Islands SPA** during **operation** of the Project in the **breeding season** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.310 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Farne Islands SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.311 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Farne Islands SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1

Table 3.312 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Farne Islands SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	

Table 3.313 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Forth Islands SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	1
	100%	0	0	0	0	0	0	0	0	0	0	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1

Table 3.314 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Forth Islands SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	

Table 3.315 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Forth Islands SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.316 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Forth Islands SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.317 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Forth Islands SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	1
	100%	0	0	0	0	0	0	0	0	0	0	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1

Table 3.318 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Forth Islands SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	

Table 3.319 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Skomer, Skokholm and the seas off Pembrokeshire SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1

Table 3.320 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Skomer, Skokholm and the seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	

Table 3.321 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Skomer, Skokholm and the seas off Pembrokeshire SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	3	4	7	8
	50%	0	0	0	0	1	1	2	3	5	8	11
	60%	0	0	0	1	1	1	3	4	6	10	13
	70%	0	0	0	1	1	1	3	4	7	12	15
	80%	0	0	1	1	1	2	3	5	8	13	17
	90%	0	0	1	1	1	2	4	6	9	15	19
	100%	0	0	1	1	1	2	4	6	11	17	21

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	1	1	1	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	1	1	1	2	3
	70%	0	0	0	0	0	0	1	1	1	2	3
	80%	0	0	0	0	0	0	1	1	2	3	3
	90%	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	1	1	2	3	4
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	4	4
	20%	0	0	0	0	0	1	2	3	4	7	9
	30%	0	0	0	1	1	1	3	4	7	11	13
	40%	0	0	1	1	1	2	4	5	9	14	18
	50%	0	0	1	1	1	2	4	7	11	18	22
	60%	0	1	1	1	1	3	5	8	13	21	26
	70%	0	1	1	1	2	3	6	9	15	25	31
	80%	0	1	1	1	2	4	7	11	18	28	35
	90%	0	1	1	2	2	4	8	12	20	32	39
	100%	0	1	1	2	2	4	9	13	22	35	44

Table 3.322 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Skomer, Skokholm and the seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.06%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.17%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.22%	0.28%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.31%	0.39%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.45%	0.56%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.04%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.06%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	100%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.47%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.47%	0.58%
	60%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.35%	0.56%	0.70%
	70%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.41%	0.65%	0.81%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.19%	0.28%	0.47%	0.74%	0.93%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.84%	1.05%
	100%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%

Table 3.323 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Skomer, Skokholm and the seas off Pembrokeshire SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	3	4	7	9
	50%	0	0	0	0	1	1	2	3	5	9	11
	60%	0	0	0	1	1	1	3	4	6	10	13
	70%	0	0	0	1	1	2	3	5	8	12	15
	80%	0	0	1	1	1	2	3	5	9	14	17
	90%	0	0	1	1	1	2	4	6	10	16	19
	100%	0	0	1	1	1	2	4	6	11	17	22

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	1	1	1	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	1	1	1	2	3
	70%	0	0	0	0	0	0	1	1	1	2	3
	80%	0	0	0	0	0	0	1	1	2	3	3
	90%	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	1	1	2	3	4
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	4	5
	20%	0	0	0	0	0	1	2	3	5	7	9
	30%	0	0	0	1	1	1	3	4	7	11	14
	40%	0	0	1	1	1	2	4	5	9	14	18
	50%	0	0	1	1	1	2	5	7	11	18	23
	60%	0	1	1	1	1	3	5	8	14	22	27
	70%	0	1	1	1	2	3	6	10	16	25	32
	80%	0	1	1	1	2	4	7	11	18	29	36
	90%	0	1	1	2	2	4	8	12	20	33	41
	100%	0	1	1	2	2	5	9	14	23	36	45

Table 3.324 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Skomer, Skokholm and the seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.14%	0.17%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.34%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.52%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.04%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.06%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	90%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	100%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.14%	0.24%	0.38%	0.48%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.60%
	60%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.22%	0.36%	0.58%	0.72%
	70%	0.01%	0.02%	0.03%	0.03%	0.04%	0.08%	0.17%	0.25%	0.42%	0.67%	0.84%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.19%	0.29%	0.48%	0.77%	0.96%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.87%	1.08%
	100%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.60%	0.96%	1.20%

Table 3.325 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Shiant Isles SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	2

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	1	1	1	2	3
	80%	0	0	0	0	0	0	1	1	2	3	3
	90%	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	1	1	2	3	4

Table 3.326 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	

Table 3.327 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Shiant Isles SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.328 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.329 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Shiant Isles SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	2

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	1	1	1	2	3
	80%	0	0	0	0	0	0	1	1	2	3	3
	90%	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	1	1	2	3	4

Table 3.330 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	

Table 3.331 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **St Kilda SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1	2
	60%	0	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	0	1	1	1	2	3
	90%	0	0	0	0	0	0	0	1	1	1	2	3
	100%	0	0	0	0	0	0	0	1	1	2	3	3

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	1	1	1	2
	30%	0	0	0	0	0	0	1	1	1	2	3
	40%	0	0	0	0	0	0	1	1	2	3	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	1	1	2	3	4	5
	70%	0	0	0	0	0	1	1	2	3	5	6
	80%	0	0	0	0	0	1	1	2	3	5	7
	90%	0	0	0	0	0	1	2	2	4	6	8
	100%	0	0	0	0	0	1	2	3	4	7	9

Table 3.332 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	

Table 3.333 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **St Kilda SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.334 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.335 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **St Kilda SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1	2
	60%	0	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	0	1	1	1	2	3
	90%	0	0	0	0	0	0	0	1	1	1	2	3
	100%	0	0	0	0	0	0	0	1	1	2	3	3

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	1	1	1	2
	30%	0	0	0	0	0	0	1	1	1	2	3
	40%	0	0	0	0	0	0	1	1	2	3	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	1	1	2	3	4	5
	70%	0	0	0	0	0	1	1	2	3	5	6
	80%	0	0	0	0	0	1	1	2	3	5	7
	90%	0	0	0	0	0	1	2	2	4	6	8
	100%	0	0	0	0	0	1	2	3	4	7	9

Table 3.336 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **St Kilda SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	

Table 3.337 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Flannan Isles SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1

Table 3.338 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Flannan Isles SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	

Table 3.339 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Flannan Isles SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.340 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Flannan Isles SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.341 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Flannan Isles SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1

Table 3.342 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Flannan Isles SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	

Table 3.343 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	1	1	1	2
	60%	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	1	1	1	2	3
	90%	0	0	0	0	0	0	1	1	2	3	3
	100%	0	0	0	0	0	0	1	1	2	3	4

Table 3.344 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	

Table 3.345 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.346 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	

Table 3.347 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Sule Skerry and Sule Stack SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	1	1	1	2
	60%	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	1	1	1	2	3
	90%	0	0	0	0	0	0	1	1	2	3	3
	100%	0	0	0	0	0	0	1	1	2	3	4

Table 3.348 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Sule Skerry and Sule Stack SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%

Table 3.349 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Foula SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	1
	100%	0	0	0	0	0	0	0	0	0	0	1

Table 3.350 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Foula SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.02%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.02%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.03%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%	0.04%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.04%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.04%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%	
	100%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%	

Table 3.351 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Foula SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.352 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Foula SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.353 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Foula SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	1
	100%	0	0	0	0	0	0	0	0	0	0	1

Table 3.354 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Foula SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%	
	100%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%	

Table 3.355 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Saxa Vord and Hermaness SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	1
	90%	0	0	0	0	0	0	0	0	0	0	1
	100%	0	0	0	0	0	0	0	0	0	1	1

Table 3.356 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Saxa Vord and Hermaness SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	

Table 3.357 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Saxa Vord and Hermaness SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.358 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Saxa Vord and Hermaness SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	

Table 3.359 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Saxa Vord and Hermaness SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	1
	90%	0	0	0	0	0	0	0	0	0	0	1
	100%	0	0	0	0	0	0	0	0	0	1	1

Table 3.360 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Saxa Vord and Hermaness SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	

Table 3.361 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Lambay Island SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.362 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%	

Table 3.363 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Lambay Island SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1

Table 3.364 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.16%	0.26%	0.33%
	20%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.52%	0.65%
	30%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.29%	0.49%	0.78%	0.98%
	40%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.26%	0.39%	0.65%	1.04%	1.30%
	50%	0.02%	0.03%	0.05%	0.07%	0.08%	0.16%	0.33%	0.49%	0.81%	1.30%	1.63%
	60%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.39%	0.59%	0.98%	1.56%	1.95%
	70%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.68%	1.14%	1.82%	2.28%
	80%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.52%	0.78%	1.30%	2.08%	2.61%
	90%	0.03%	0.06%	0.09%	0.12%	0.15%	0.29%	0.59%	0.88%	1.47%	2.35%	2.93%
	100%	0.03%	0.07%	0.10%	0.13%	0.16%	0.33%	0.65%	0.98%	1.63%	2.61%	3.26%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.26%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.36%	0.45%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.52%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.46%	0.58%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.65%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.20%	0.34%	0.54%	0.68%
	20%	0.01%	0.03%	0.04%	0.05%	0.07%	0.14%	0.27%	0.41%	0.68%	1.09%	1.36%
	30%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.41%	0.61%	1.02%	1.63%	2.04%
	40%	0.03%	0.05%	0.08%	0.11%	0.14%	0.27%	0.54%	0.81%	1.36%	2.17%	2.72%
	50%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.68%	1.02%	1.70%	2.72%	3.39%
	60%	0.04%	0.08%	0.12%	0.16%	0.20%	0.41%	0.81%	1.22%	2.04%	3.26%	4.07%
	70%	0.05%	0.10%	0.14%	0.19%	0.24%	0.48%	0.95%	1.43%	2.38%	3.80%	4.75%
	80%	0.05%	0.11%	0.16%	0.22%	0.27%	0.54%	1.09%	1.63%	2.72%	4.34%	5.43%
	90%	0.06%	0.12%	0.18%	0.24%	0.31%	0.61%	1.22%	1.83%	3.06%	4.89%	6.11%
	100%	0.07%	0.14%	0.20%	0.27%	0.34%	0.68%	1.36%	2.04%	3.39%	5.43%	6.79%

Table 3.365 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Lambay Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1

Table 3.366 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.16%	0.26%	0.33%
	20%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.66%
	30%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.49%	0.79%	0.99%
	40%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.26%	0.39%	0.66%	1.05%	1.31%
	50%	0.02%	0.03%	0.05%	0.07%	0.08%	0.16%	0.33%	0.49%	0.82%	1.31%	1.64%
	60%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.39%	0.59%	0.99%	1.58%	1.97%
	70%	0.02%	0.05%	0.07%	0.09%	0.12%	0.23%	0.46%	0.69%	1.15%	1.84%	2.30%
	80%	0.03%	0.05%	0.08%	0.11%	0.13%	0.26%	0.53%	0.79%	1.31%	2.10%	2.63%
	90%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.59%	0.89%	1.48%	2.37%	2.96%
	100%	0.03%	0.07%	0.10%	0.13%	0.16%	0.33%	0.66%	0.99%	1.64%	2.63%	3.29%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.26%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.36%	0.45%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.16%	0.26%	0.41%	0.52%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.29%	0.47%	0.58%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.65%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.34%	0.55%	0.69%
	20%	0.01%	0.03%	0.04%	0.05%	0.07%	0.14%	0.27%	0.41%	0.69%	1.10%	1.37%
	30%	0.02%	0.04%	0.06%	0.08%	0.10%	0.21%	0.41%	0.62%	1.03%	1.65%	2.06%
	40%	0.03%	0.05%	0.08%	0.11%	0.14%	0.27%	0.55%	0.82%	1.37%	2.20%	2.75%
	50%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.69%	1.03%	1.72%	2.75%	3.43%
	60%	0.04%	0.08%	0.12%	0.16%	0.21%	0.41%	0.82%	1.24%	2.06%	3.29%	4.12%
	70%	0.05%	0.10%	0.14%	0.19%	0.24%	0.48%	0.96%	1.44%	2.40%	3.84%	4.80%
	80%	0.05%	0.11%	0.16%	0.22%	0.27%	0.55%	1.10%	1.65%	2.75%	4.39%	5.49%
	90%	0.06%	0.12%	0.19%	0.25%	0.31%	0.62%	1.24%	1.85%	3.09%	4.94%	6.18%
	100%	0.07%	0.14%	0.21%	0.27%	0.34%	0.69%	1.37%	2.06%	3.43%	5.49%	6.86%

Table 3.367 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.368 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	

Table 3.369 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.370 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.371 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Saltee Islands SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.372 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%	

Table 3.373 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Blasket Islands SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.374 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Blasket Islands SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	

Table 3.375 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Blasket Islands SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.376 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Blasket Islands SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.377 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Blasket Islands SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.378 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Blasket Islands SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	

Table 3.379 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Puffin Island SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.380 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Puffin Island SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	

Table 3.381 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Puffin Island SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.382 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Puffin Island SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.383 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Puffin Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.384 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Puffin Island SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	

Table 3.385 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Skelligs SPA** during **operation** of the Project in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.386 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation** in the **non-breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	

Table 3.387 Mean, LCI and UCI displacement matrices for **puffin** apportioned to **Skelligs SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.388 Mean, LCI and UCI displacement matrices showing change in mortality rate for **puffin** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3.389 Mean, LCI and UCI **year-round** displacement matrices for **puffin** apportioned to **Skelligs SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0

Table 3.390 **year-round** displacement matrices showing change in mortality rate for **puffin** apportioned to **Skelligs SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	

Table 3.391 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Rathlin Island SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	3
	20%	0	0	0	0	0	1	1	2	3	6	7
	30%	0	0	0	0	1	1	2	3	5	8	10
	40%	0	0	0	1	1	1	3	4	7	11	14
	50%	0	0	1	1	1	2	3	5	9	14	17
	60%	0	0	1	1	1	2	4	6	10	17	21
	70%	0	0	1	1	1	2	5	7	12	19	24
	80%	0	1	1	1	1	3	6	8	14	22	28
	90%	0	1	1	1	2	3	6	9	16	25	31
	100%	0	1	1	1	2	3	7	10	17	28	35

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	2
	20%	0	0	0	0	0	0	1	1	2	2	3
	30%	0	0	0	0	0	0	1	1	2	4	5
	40%	0	0	0	0	0	1	1	2	3	5	6
	50%	0	0	0	0	0	1	2	2	4	6	8
	60%	0	0	0	0	0	1	2	3	5	7	9
	70%	0	0	0	0	1	1	2	3	5	9	11
	80%	0	0	0	0	1	1	2	4	6	10	12
	90%	0	0	0	1	1	1	3	4	7	11	14
	100%	0	0	0	1	1	2	3	5	8	12	15
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	4	5
	20%	0	0	0	0	1	1	2	3	5	9	11
	30%	0	0	0	1	1	2	3	5	8	13	16
	40%	0	0	1	1	1	2	4	6	11	17	21
	50%	0	1	1	1	1	3	5	8	13	21	27
	60%	0	1	1	1	2	3	6	10	16	26	32
	70%	0	1	1	1	2	4	7	11	19	30	37
	80%	0	1	1	2	2	4	9	13	21	34	43
	90%	0	1	1	2	2	5	10	14	24	39	48
	100%	1	1	2	2	3	5	11	16	27	43	53

Table 3.392 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.29%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.29%	0.47%	0.59%
	50%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.59%	0.74%
	60%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.44%	0.71%	0.88%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.83%	1.03%
	80%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.35%	0.59%	0.94%	1.18%
	90%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.27%	0.40%	0.66%	1.06%	1.33%
	100%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.29%	0.44%	0.74%	1.18%	1.47%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.16%	0.26%	0.33%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.39%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.26%	0.42%	0.53%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.47%	0.59%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.66%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.36%	0.45%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.20%	0.34%	0.55%	0.68%
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.73%	0.91%
	50%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.91%	1.14%
	60%	0.01%	0.03%	0.04%	0.05%	0.07%	0.14%	0.27%	0.41%	0.68%	1.09%	1.36%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.27%	1.59%
	80%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.55%	0.91%	1.45%	1.82%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.41%	0.61%	1.02%	1.64%	2.04%
	100%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.45%	0.68%	1.14%	1.82%	2.27%

Table 3.393 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Rathlin Island SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	4	5
	30%	0	0	0	0	0	1	1	2	4	6	7
	40%	0	0	0	0	0	1	2	3	5	8	9
	50%	0	0	0	0	1	1	2	4	6	9	12
	60%	0	0	0	1	1	1	3	4	7	11	14
	70%	0	0	0	1	1	2	3	5	8	13	16
	80%	0	0	1	1	1	2	4	6	9	15	19
	90%	0	0	1	1	1	2	4	6	11	17	21
	100%	0	0	1	1	1	2	5	7	12	19	23

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	1	2
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	1	1	1	2	3
	60%	0	0	0	0	0	0	1	1	2	3	3
	70%	0	0	0	0	0	0	1	1	2	3	4
	80%	0	0	0	0	0	0	1	1	2	4	5
	90%	0	0	0	0	0	1	1	2	3	4	5
	100%	0	0	0	0	0	1	1	2	3	5	6
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	4	5
	20%	0	0	0	0	0	1	2	3	5	7	9
	30%	0	0	0	1	1	1	3	4	7	11	14
	40%	0	0	1	1	1	2	4	6	9	15	19
	50%	0	0	1	1	1	2	5	7	12	19	23
	60%	0	1	1	1	1	3	6	8	14	22	28
	70%	0	1	1	1	2	3	7	10	16	26	33
	80%	0	1	1	1	2	4	7	11	19	30	37
	90%	0	1	1	2	2	4	8	13	21	34	42
	100%	0	1	1	2	2	5	9	14	23	37	47

Table 3.394 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	30%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	60%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.60%
	70%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.35%	0.56%	0.70%
	80%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.64%	0.80%
	90%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.80%	1.00%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	50%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	60%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.14%	0.17%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.19%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	100%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	30%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.60%
	40%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.63%	0.79%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.79%	0.99%
	60%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.60%	0.95%	1.19%
	70%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.42%	0.69%	1.11%	1.39%
	80%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.79%	1.27%	1.59%
	90%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.54%	0.89%	1.43%	1.79%
	100%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.40%	0.60%	0.99%	1.59%	1.98%

Table 3.395 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Rathlin Island SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	2	4	6	8
	50%	0	0	0	0	0	1	2	3	5	8	10
	60%	0	0	0	0	1	1	2	3	6	9	11
	70%	0	0	0	1	1	1	3	4	7	11	13
	80%	0	0	0	1	1	2	3	5	8	12	15
	90%	0	0	1	1	1	2	3	5	9	14	17
	100%	0	0	1	1	1	2	4	6	10	15	19

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	3
	40%	0	0	0	0	0	0	1	1	2	3	4
	50%	0	0	0	0	0	1	1	2	3	4	5
	60%	0	0	0	0	0	1	1	2	3	5	6
	70%	0	0	0	0	0	1	1	2	4	6	7
	80%	0	0	0	0	0	1	2	3	4	7	9
	90%	0	0	0	0	0	1	2	3	5	8	10
	100%	0	0	0	0	1	1	2	3	5	9	11
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	1	2	3
	20%	0	0	0	0	0	1	1	2	3	5	6
	30%	0	0	0	0	0	1	2	3	4	7	9
	40%	0	0	0	0	1	1	2	3	6	9	12
	50%	0	0	0	1	1	1	3	4	7	12	14
	60%	0	0	1	1	1	2	3	5	9	14	17
	70%	0	0	1	1	1	2	4	6	10	16	20
	80%	0	0	1	1	1	2	5	7	12	19	23
	90%	0	1	1	1	1	3	5	8	13	21	26
	100%	0	1	1	1	1	3	6	9	14	23	29

Table 3.396 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.26%	0.32%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.41%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.24%	0.39%	0.49%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.45%	0.57%
	80%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.65%
	90%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.36%	0.58%	0.73%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.41%	0.65%	0.81%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.15%	0.18%
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	60%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.33%	0.41%
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.36%	0.45%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.20%	0.25%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.30%	0.37%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.25%	0.39%	0.49%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.31%	0.49%	0.62%
	60%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.59%	0.74%
	70%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.69%	0.86%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.49%	0.79%	0.99%
	90%	0.01%	0.02%	0.03%	0.04%	0.06%	0.11%	0.22%	0.33%	0.55%	0.89%	1.11%
	100%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.25%	0.37%	0.62%	0.99%	1.23%

Table 3.397 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Rathlin Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	2	4	6	8
	20%	0	0	0	1	1	2	3	5	8	12	15
	30%	0	0	1	1	1	2	5	7	12	19	23
	40%	0	1	1	1	2	3	6	9	15	25	31
	50%	0	1	1	2	2	4	8	12	19	31	39
	60%	0	1	1	2	2	5	9	14	23	37	46
	70%	1	1	2	2	3	5	11	16	27	43	54
	80%	1	1	2	2	3	6	12	19	31	49	62
	90%	1	1	2	3	3	7	14	21	35	56	69
	100%	1	2	2	3	4	8	15	23	39	62	77

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	3
	20%	0	0	0	0	0	1	1	2	3	5	6
	30%	0	0	0	0	0	1	2	3	5	8	10
	40%	0	0	0	1	1	1	3	4	6	10	13
	50%	0	0	0	1	1	2	3	5	8	13	16
	60%	0	0	1	1	1	2	4	6	10	15	19
	70%	0	0	1	1	1	2	4	7	11	18	22
	80%	0	1	1	1	1	3	5	8	13	20	25
	90%	0	1	1	1	1	3	6	9	14	23	29
	100%	0	1	1	1	2	3	6	10	16	25	32
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	1	3	4	6	10	13
	20%	0	1	1	1	1	3	5	8	13	21	26
	30%	0	1	1	2	2	4	8	12	19	31	39
	40%	1	1	2	2	3	5	10	16	26	41	52
	50%	1	1	2	3	3	6	13	19	32	52	65
	60%	1	2	2	3	4	8	16	23	39	62	78
	70%	1	2	3	4	5	9	18	27	45	72	90
	80%	1	2	3	4	5	10	21	31	52	83	103
	90%	1	2	3	5	6	12	23	35	58	93	116
	100%	1	3	4	5	6	13	26	39	65	103	129

Table 3.398 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Rathlin Island SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.16%	0.26%	0.33%
	20%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.52%	0.66%
	30%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.49%	0.79%	0.98%
	40%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.26%	0.39%	0.66%	1.05%	1.31%
	50%	0.02%	0.03%	0.05%	0.07%	0.08%	0.16%	0.33%	0.49%	0.82%	1.31%	1.64%
	60%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.39%	0.59%	0.98%	1.57%	1.97%
	70%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.69%	1.15%	1.84%	2.30%
	80%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.52%	0.79%	1.31%	2.10%	2.62%
	90%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.59%	0.89%	1.48%	2.36%	2.95%
	100%	0.03%	0.07%	0.10%	0.13%	0.16%	0.33%	0.66%	0.98%	1.64%	2.62%	3.28%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.41%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.54%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.20%	0.34%	0.54%	0.68%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.41%	0.65%	0.81%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.19%	0.28%	0.47%	0.76%	0.95%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.87%	1.08%
	90%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.37%	0.61%	0.97%	1.22%
	100%	0.01%	0.03%	0.04%	0.05%	0.07%	0.14%	0.27%	0.41%	0.68%	1.08%	1.35%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.44%	0.55%
	20%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.33%	0.55%	0.88%	1.10%
	30%	0.02%	0.03%	0.05%	0.07%	0.08%	0.16%	0.33%	0.49%	0.82%	1.32%	1.65%
	40%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.44%	0.66%	1.10%	1.76%	2.19%
	50%	0.03%	0.05%	0.08%	0.11%	0.14%	0.27%	0.55%	0.82%	1.37%	2.19%	2.74%
	60%	0.03%	0.07%	0.10%	0.13%	0.16%	0.33%	0.66%	0.99%	1.65%	2.63%	3.29%
	70%	0.04%	0.08%	0.12%	0.15%	0.19%	0.38%	0.77%	1.15%	1.92%	3.07%	3.84%
	80%	0.04%	0.09%	0.13%	0.18%	0.22%	0.44%	0.88%	1.32%	2.19%	3.51%	4.39%
	90%	0.05%	0.10%	0.15%	0.20%	0.25%	0.49%	0.99%	1.48%	2.47%	3.95%	4.94%
	100%	0.05%	0.11%	0.16%	0.22%	0.27%	0.55%	1.10%	1.65%	2.74%	4.39%	5.49%

Table 3.399 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	1	1	1	2	3
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	1	1	2	3	4	5
	50%	0	0	0	0	0	1	1	2	3	5	7
	60%	0	0	0	0	0	1	2	2	4	6	8
	70%	0	0	0	0	0	1	2	3	5	7	9
	80%	0	0	0	0	1	1	2	3	5	8	11
	90%	0	0	0	0	1	1	2	4	6	9	12
	100%	0	0	0	1	1	1	3	4	7	11	13

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	1	2
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	1	1	1	2	3
	60%	0	0	0	0	0	0	1	1	2	3	4
	70%	0	0	0	0	0	0	1	1	2	3	4
	80%	0	0	0	0	0	0	1	1	2	4	5
	90%	0	0	0	0	0	1	1	2	3	4	5
	100%	0	0	0	0	0	1	1	2	3	5	6
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	2	4	7	8
	50%	0	0	0	0	1	1	2	3	5	8	10
	60%	0	0	0	0	1	1	2	4	6	10	12
	70%	0	0	0	1	1	1	3	4	7	11	14
	80%	0	0	0	1	1	2	3	5	8	13	16
	90%	0	0	1	1	1	2	4	5	9	15	18
	100%	0	0	1	1	1	2	4	6	10	16	20

Table 3.400 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.39%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.26%	0.42%	0.53%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.66%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.79%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.28%	0.46%	0.74%	0.92%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.84%	1.05%
	90%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.59%	0.95%	1.18%
	100%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.26%	0.39%	0.66%	1.05%	1.32%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.12%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.23%	0.29%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.28%	0.35%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.21%	0.33%	0.41%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.38%	0.47%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.26%	0.42%	0.53%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.29%	0.47%	0.59%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.41%
	30%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.49%	0.61%
	40%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.41%	0.65%	0.81%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.51%	0.81%	1.01%
	60%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.37%	0.61%	0.97%	1.22%
	70%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.43%	0.71%	1.14%	1.42%
	80%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.49%	0.81%	1.30%	1.62%
	90%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.37%	0.55%	0.91%	1.46%	1.83%
	100%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.41%	0.61%	1.01%	1.62%	2.03%

Table 3.401 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	1	2	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	0	1	1	2	3	4
	70%	0	0	0	0	0	1	1	2	3	4	5
	80%	0	0	0	0	0	1	1	2	3	5	6
	90%	0	0	0	0	0	1	1	2	3	5	6
	100%	0	0	0	0	0	1	1	2	4	6	7

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	2
	100%	0	0	0	0	0	0	0	1	1	1	2
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	1	1	1	2	3
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	1	1	2	3	5	6
	50%	0	0	0	0	0	1	1	2	4	6	7
	60%	0	0	0	0	0	1	2	3	4	7	9
	70%	0	0	0	0	0	1	2	3	5	8	10
	80%	0	0	0	0	1	1	2	3	6	9	11
	90%	0	0	0	1	1	1	3	4	6	10	13
	100%	0	0	0	1	1	1	3	4	7	11	14

Table 3.402 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.21%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.21%	0.34%	0.43%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	90%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
	100%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.36%	0.57%	0.71%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.07%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	60%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	70%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	80%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	90%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	100%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.14%	0.17%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.28%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.21%	0.34%	0.43%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.46%	0.57%
	50%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.36%	0.57%	0.71%
	60%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.68%	0.85%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.80%	1.00%
	80%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.91%	1.14%
	90%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.38%	0.64%	1.03%	1.28%
	100%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.43%	0.71%	1.14%	1.42%

Table 3.403 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	1	2	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	0	1	1	2	3	4
	70%	0	0	0	0	0	1	1	2	3	4	5
	80%	0	0	0	0	0	1	1	2	3	5	6
	90%	0	0	0	0	0	1	1	2	3	5	7
	100%	0	0	0	0	0	1	1	2	4	6	7

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	1	1	1	2	3
	80%	0	0	0	0	0	0	1	1	2	3	3
	90%	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	1	1	2	3	4
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	3
	40%	0	0	0	0	0	0	1	1	2	4	4
	50%	0	0	0	0	0	1	1	2	3	4	6
	60%	0	0	0	0	0	1	1	2	3	5	7
	70%	0	0	0	0	0	1	2	2	4	6	8
	80%	0	0	0	0	0	1	2	3	4	7	9
	90%	0	0	0	0	0	1	2	3	5	8	10
	100%	0	0	0	0	1	1	2	3	6	9	11

Table 3.404 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.14%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.17%	0.22%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.43%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.46%	0.58%
	90%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.52%	0.65%
	100%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.22%	0.36%	0.58%	0.72%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	30%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	70%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.28%
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.26%	0.32%
	90%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.11%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.16%	0.26%	0.33%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.44%	0.55%
	60%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.66%
	70%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.38%	0.62%	0.77%
	80%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.26%	0.44%	0.70%	0.88%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.49%	0.79%	0.99%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.33%	0.55%	0.88%	1.10%

Table 3.405 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	1	2	3
	20%	0	0	0	0	0	1	1	2	3	4	6
	30%	0	0	0	0	0	1	2	2	4	7	8
	40%	0	0	0	0	1	1	2	3	6	9	11
	50%	0	0	0	1	1	1	3	4	7	11	14
	60%	0	0	0	1	1	2	3	5	8	13	17
	70%	0	0	1	1	1	2	4	6	10	15	19
	80%	0	0	1	1	1	2	4	7	11	18	22
	90%	0	0	1	1	1	2	5	7	12	20	25
	100%	0	1	1	1	1	3	6	8	14	22	28

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	0	1	1	2	4	5
	50%	0	0	0	0	0	1	1	2	3	5	6
	60%	0	0	0	0	0	1	1	2	4	6	7
	70%	0	0	0	0	0	1	2	2	4	7	8
	80%	0	0	0	0	0	1	2	3	5	7	9
	90%	0	0	0	0	1	1	2	3	5	8	11
	100%	0	0	0	0	1	1	2	4	6	9	12
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	4	5
	20%	0	0	0	0	0	1	2	3	5	7	9
	30%	0	0	0	1	1	1	3	4	7	11	14
	40%	0	0	1	1	1	2	4	5	9	15	18
	50%	0	0	1	1	1	2	5	7	11	18	23
	60%	0	1	1	1	1	3	5	8	14	22	27
	70%	0	1	1	1	2	3	6	10	16	26	32
	80%	0	1	1	1	2	4	7	11	18	29	36
	90%	0	1	1	2	2	4	8	12	21	33	41
	100%	0	1	1	2	2	5	9	14	23	36	46

Table 3.406 Mean, LCI and UCI year-round displacement matrices showing change in mortality rate for **razorbill** apportioned to **Skomer, Skokholm and the Seas off Pembrokeshire SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.22%	0.28%
	20%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.44%	0.55%
	30%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.17%	0.25%	0.41%	0.66%	0.83%
	40%	0.01%	0.02%	0.03%	0.04%	0.06%	0.11%	0.22%	0.33%	0.55%	0.88%	1.10%
	50%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.41%	0.69%	1.10%	1.38%
	60%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.33%	0.50%	0.83%	1.32%	1.65%
	70%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.96%	1.54%	1.93%
	80%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.44%	0.66%	1.10%	1.76%	2.20%
	90%	0.02%	0.05%	0.07%	0.10%	0.12%	0.25%	0.50%	0.74%	1.24%	1.98%	2.48%
	100%	0.03%	0.06%	0.08%	0.11%	0.14%	0.28%	0.55%	0.83%	1.38%	2.20%	2.75%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.47%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.47%	0.58%
	60%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.35%	0.56%	0.70%
	70%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.41%	0.65%	0.82%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.19%	0.28%	0.47%	0.75%	0.93%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.84%	1.05%
	100%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.17%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.36%	0.46%
	20%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.46%	0.73%	0.91%
	30%	0.01%	0.03%	0.04%	0.05%	0.07%	0.14%	0.27%	0.41%	0.68%	1.09%	1.37%
	40%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.55%	0.91%	1.46%	1.82%
	50%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.68%	1.14%	1.82%	2.28%
	60%	0.03%	0.05%	0.08%	0.11%	0.14%	0.27%	0.55%	0.82%	1.37%	2.18%	2.73%
	70%	0.03%	0.06%	0.10%	0.13%	0.16%	0.32%	0.64%	0.96%	1.59%	2.55%	3.19%
	80%	0.04%	0.07%	0.11%	0.15%	0.18%	0.36%	0.73%	1.09%	1.82%	2.91%	3.64%
	90%	0.04%	0.08%	0.12%	0.16%	0.20%	0.41%	0.82%	1.23%	2.05%	3.28%	4.10%
	100%	0.05%	0.09%	0.14%	0.18%	0.23%	0.46%	0.91%	1.37%	2.28%	3.64%	4.55%

Table 3.407 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Mingulay and Berneray SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	4	5
	30%	0	0	0	0	0	1	1	2	3	5	7
	40%	0	0	0	0	0	1	2	3	5	7	9
	50%	0	0	0	0	1	1	2	3	6	9	11
	60%	0	0	0	1	1	1	3	4	7	11	14
	70%	0	0	0	1	1	2	3	5	8	13	16
	80%	0	0	1	1	1	2	4	5	9	15	18
	90%	0	0	1	1	1	2	4	6	10	16	21
	100%	0	0	1	1	1	2	5	7	11	18	23

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	2	3
	40%	0	0	0	0	0	0	1	1	2	3	4
	50%	0	0	0	0	0	1	1	2	3	4	5
	60%	0	0	0	0	0	1	1	2	3	5	6
	70%	0	0	0	0	0	1	1	2	4	6	7
	80%	0	0	0	0	0	1	2	2	4	7	8
	90%	0	0	0	0	0	1	2	3	5	7	9
	100%	0	0	0	0	1	1	2	3	5	8	10
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	0	1	1	2	4	6	7
	30%	0	0	0	0	1	1	2	3	5	8	11
	40%	0	0	0	1	1	1	3	4	7	11	14
	50%	0	0	1	1	1	2	4	5	9	14	18
	60%	0	0	1	1	1	2	4	6	11	17	21
	70%	0	0	1	1	1	2	5	7	12	20	25
	80%	0	1	1	1	1	3	6	8	14	23	28
	90%	0	1	1	1	2	3	6	10	16	25	32
	100%	0	1	1	1	2	4	7	11	18	28	35

Table 3.408 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Mingulay and Berneray SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.11%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.17%	0.22%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.16%	0.26%	0.33%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.44%	0.55%
	60%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.52%	0.66%
	70%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.38%	0.61%	0.76%
	80%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.44%	0.70%	0.87%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.29%	0.49%	0.79%	0.98%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.33%	0.55%	0.87%	1.09%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.19%
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	60%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.23%	0.29%
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.24%	0.39%	0.49%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.17%
	20%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%
	30%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	40%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.34%	0.54%	0.67%
	50%	0.01%	0.02%	0.03%	0.03%	0.04%	0.08%	0.17%	0.25%	0.42%	0.67%	0.84%
	60%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.81%	1.01%
	70%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.35%	0.59%	0.94%	1.18%
	80%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.27%	0.40%	0.67%	1.08%	1.35%
	90%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.45%	0.76%	1.21%	1.51%
	100%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.34%	0.50%	0.84%	1.35%	1.68%

Table 3.409 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Mingulay and Berneray SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	2
	20%	0	0	0	0	0	0	1	1	2	3	3
	30%	0	0	0	0	0	0	1	1	2	4	5
	40%	0	0	0	0	0	1	1	2	3	5	6
	50%	0	0	0	0	0	1	2	2	4	6	8
	60%	0	0	0	0	0	1	2	3	5	8	9
	70%	0	0	0	0	1	1	2	3	5	9	11
	80%	0	0	0	1	1	1	3	4	6	10	13
	90%	0	0	0	1	1	1	3	4	7	11	14
	100%	0	0	0	1	1	2	3	5	8	13	16

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	1	1	1	2	3
	80%	0	0	0	0	0	0	1	1	2	2	3
	90%	0	0	0	0	0	0	1	1	2	3	3
	100%	0	0	0	0	0	0	1	1	2	3	4
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	2	3
	20%	0	0	0	0	0	1	1	2	3	5	6
	30%	0	0	0	0	0	1	2	3	5	7	9
	40%	0	0	0	0	1	1	2	4	6	10	12
	50%	0	0	0	1	1	2	3	5	8	12	16
	60%	0	0	1	1	1	2	4	6	9	15	19
	70%	0	0	1	1	1	2	4	7	11	17	22
	80%	0	0	1	1	1	2	5	7	12	20	25
	90%	0	1	1	1	1	3	6	8	14	22	28
	100%	0	1	1	1	2	3	6	9	16	25	31

Table 3.410 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Mingulay and Berneray SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.19%	0.30%	0.37%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.16%	0.26%	0.42%	0.52%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.60%
	90%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.34%	0.54%	0.67%
	100%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.60%	0.74%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%
	60%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.11%
	70%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	80%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
	90%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	100%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.15%	0.18%
UCI		Mortality										
Displacement		1%	%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.47%	0.59%
	50%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.59%	0.74%
	60%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.45%	0.71%	0.89%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.83%	1.04%
	80%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.59%	0.95%	1.19%
	90%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.27%	0.40%	0.67%	1.07%	1.34%
	100%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.30%	0.45%	0.74%	1.19%	1.48%

Table 3.411 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Mingulay and Berneray SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	1	1	1	2	3
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	1	1	2	3	4	5
	50%	0	0	0	0	0	1	1	2	3	5	6
	60%	0	0	0	0	0	1	2	2	4	6	8
	70%	0	0	0	0	0	1	2	3	4	7	9
	80%	0	0	0	0	1	1	2	3	5	8	10
	90%	0	0	0	0	1	1	2	3	6	9	11
	100%	0	0	0	1	1	1	3	4	6	10	13

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	1	2	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	0	1	1	2	3	4
	70%	0	0	0	0	0	0	1	1	2	4	5
	80%	0	0	0	0	0	1	1	2	3	5	6
	90%	0	0	0	0	0	1	1	2	3	5	6
	100%	0	0	0	0	0	1	1	2	4	6	7
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	2	4	6	8
	50%	0	0	0	0	0	1	2	3	5	8	10
	60%	0	0	0	0	1	1	2	3	6	9	11
	70%	0	0	0	1	1	1	3	4	7	11	13
	80%	0	0	0	1	1	2	3	5	8	12	15
	90%	0	0	1	1	1	2	3	5	9	14	17
	100%	0	0	1	1	1	2	4	6	10	15	19

Table 3.412 Displacement matrices showing change in mortality rate for **razorbill** apportioned to **Mingulay and Berneray SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	1	1	1	2	3
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	1	1	2	3	4	5
	50%	0	0	0	0	0	1	1	2	3	5	6
	60%	0	0	0	0	0	1	2	2	4	6	8
	70%	0	0	0	0	0	1	2	3	4	7	9
	80%	0	0	0	0	1	1	2	3	5	8	10
	90%	0	0	0	0	1	1	2	3	6	9	11
	100%	0	0	0	1	1	1	3	4	6	10	13



LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	1	2	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	0	1	1	2	3	4
	70%	0	0	0	0	0	0	1	1	2	4	5
	80%	0	0	0	0	0	1	1	2	3	5	6
	90%	0	0	0	0	0	1	1	2	3	5	6
	100%	0	0	0	0	0	1	1	2	4	6	7
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	2	4	6	8
	50%	0	0	0	0	0	1	2	3	5	8	10
	60%	0	0	0	0	1	1	2	3	6	9	11
	70%	0	0	0	1	1	1	3	4	7	11	13
	80%	0	0	0	1	1	2	3	5	8	12	15
	90%	0	0	1	1	1	2	3	5	9	14	17
	100%	0	0	1	1	1	2	4	6	10	15	19

Table 3.413 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Mingulay and Berneray SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	4	5
	20%	0	0	0	0	1	1	2	3	5	8	10
	30%	0	0	0	1	1	2	3	5	8	12	15
	40%	0	0	1	1	1	2	4	6	10	16	20
	50%	0	1	1	1	1	3	5	8	13	20	26
	60%	0	1	1	1	2	3	6	9	15	25	31
	70%	0	1	1	1	2	4	7	11	18	29	36
	80%	0	1	1	2	2	4	8	12	20	33	41
	90%	0	1	1	2	2	5	9	14	23	37	46
	100%	1	1	2	2	3	5	10	15	26	41	51

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	3	4	7	8
	50%	0	0	0	0	1	1	2	3	5	8	11
	60%	0	0	0	1	1	1	3	4	6	10	13
	70%	0	0	0	1	1	1	3	4	7	12	15
	80%	0	0	1	1	1	2	3	5	8	13	17
	90%	0	0	1	1	1	2	4	6	9	15	19
	100%	0	0	1	1	1	2	4	6	11	17	21
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	3	4	7	9
	20%	0	0	1	1	1	2	3	5	9	14	17
	30%	0	1	1	1	1	3	5	8	13	21	26
	40%	0	1	1	1	2	3	7	10	17	27	34
	50%	0	1	1	2	2	4	9	13	21	34	43
	60%	1	1	2	2	3	5	10	15	26	41	51
	70%	1	1	2	2	3	6	12	18	30	48	60
	80%	1	1	2	3	3	7	14	21	34	55	68
	90%	1	2	2	3	4	8	15	23	39	62	77
	100%	1	2	3	3	4	9	17	26	43	68	86

Table 3.414 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Mingulay and Berneray SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.24%	0.39%	0.49%
	30%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.58%	0.73%
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.19%	0.29%	0.49%	0.78%	0.97%
	50%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.37%	0.61%	0.97%	1.22%
	60%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.29%	0.44%	0.73%	1.17%	1.46%
	70%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.34%	0.51%	0.85%	1.36%	1.71%
	80%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.97%	1.56%	1.95%
	90%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.44%	0.66%	1.10%	1.75%	2.19%
	100%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.49%	0.73%	1.22%	1.95%	2.44%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	60%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.60%
	70%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.56%	0.70%
	80%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.64%	0.80%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.80%	1.00%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.33%	0.41%
	20%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.41%	0.65%	0.82%
	30%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.37%	0.61%	0.98%	1.22%
	40%	0.02%	0.03%	0.05%	0.07%	0.08%	0.16%	0.33%	0.49%	0.82%	1.31%	1.63%
	50%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.41%	0.61%	1.02%	1.63%	2.04%
	60%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.49%	0.73%	1.22%	1.96%	2.45%
	70%	0.03%	0.06%	0.09%	0.11%	0.14%	0.29%	0.57%	0.86%	1.43%	2.28%	2.86%
	80%	0.03%	0.07%	0.10%	0.13%	0.16%	0.33%	0.65%	0.98%	1.63%	2.61%	3.26%
	90%	0.04%	0.07%	0.11%	0.15%	0.18%	0.37%	0.73%	1.10%	1.84%	2.94%	3.67%
	100%	0.04%	0.08%	0.12%	0.16%	0.20%	0.41%	0.82%	1.22%	2.04%	3.26%	4.08%

Table 3.415 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Shiant Isles SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	1	2	3
	40%	0	0	0	0	0	0	1	1	2	3	4
	50%	0	0	0	0	0	0	1	1	2	4	5
	60%	0	0	0	0	0	1	1	2	3	5	6
	70%	0	0	0	0	0	1	1	2	3	5	7
	80%	0	0	0	0	0	1	2	2	4	6	8
	90%	0	0	0	0	0	1	2	3	4	7	9
	100%	0	0	0	0	0	1	2	3	5	8	10

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	1	1	1	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	1	1	1	2	3
	70%	0	0	0	0	0	0	1	1	2	2	3
	80%	0	0	0	0	0	0	1	1	2	3	3
	90%	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	1	1	2	3	4
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	1	1	1	2	3
	30%	0	0	0	0	0	0	1	1	2	4	4
	40%	0	0	0	0	0	1	1	2	3	5	6
	50%	0	0	0	0	0	1	1	2	4	6	7
	60%	0	0	0	0	0	1	2	3	4	7	9
	70%	0	0	0	0	1	1	2	3	5	8	10
	80%	0	0	0	0	1	1	2	4	6	10	12
	90%	0	0	0	1	1	1	3	4	7	11	13
	100%	0	0	0	1	1	1	3	4	7	12	15

Table 3.416 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.18%	0.23%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.46%	0.58%
	60%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.35%	0.55%	0.69%
	70%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.65%	0.81%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.28%	0.46%	0.74%	0.92%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.83%	1.04%
	100%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.92%	1.15%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.21%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.25%	0.31%
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.21%	0.33%	0.41%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.51%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	20%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.28%	0.36%
	30%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.53%
	40%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.36%	0.57%	0.71%
	50%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.44%	0.71%	0.89%
	60%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.85%	1.07%
	70%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.25%	0.37%	0.62%	0.99%	1.24%
	80%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.43%	0.71%	1.14%	1.42%
	90%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.28%	1.60%
	100%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.53%	0.89%	1.42%	1.78%

Table 3.417 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Shiant Isles SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	1	2	3
	50%	0	0	0	0	0	0	1	1	2	3	3
	60%	0	0	0	0	0	0	1	1	2	3	4
	70%	0	0	0	0	0	0	1	1	2	4	5
	80%	0	0	0	0	0	1	1	2	3	4	5
	90%	0	0	0	0	0	1	1	2	3	5	6
	100%	0	0	0	0	0	1	1	2	3	5	7

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	2
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	1	1	1	2	3
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	1	1	2	3	4	5
	50%	0	0	0	0	0	1	1	2	3	5	6
	60%	0	0	0	0	0	1	2	2	4	6	8
	70%	0	0	0	0	0	1	2	3	5	7	9
	80%	0	0	0	0	1	1	2	3	5	8	10
	90%	0	0	0	0	1	1	2	4	6	9	12
	100%	0	0	0	1	1	1	3	4	6	10	13

Table 3.418 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.25%	0.31%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.54%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.19%	0.31%	0.49%	0.62%
	90%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.35%	0.56%	0.70%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.39%	0.62%	0.77%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.09%
	60%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	70%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.13%
	80%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.14%	0.17%
	100%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.15%	0.19%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%
	20%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.25%	0.31%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.31%	0.49%	0.62%
	50%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.38%	0.62%	0.77%
	60%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.28%	0.46%	0.74%	0.92%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.86%	1.08%
	80%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.25%	0.37%	0.62%	0.98%	1.23%
	90%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.42%	0.69%	1.11%	1.38%
	100%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.31%	0.46%	0.77%	1.23%	1.54%

Table 3.419 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Shiant Isles SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	0	1	1	2
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	1	1	1	2	3
	60%	0	0	0	0	0	0	1	1	2	3	3
	70%	0	0	0	0	0	0	1	1	2	3	4
	80%	0	0	0	0	0	0	1	1	2	3	4
	90%	0	0	0	0	0	0	1	1	2	4	5
	100%	0	0	0	0	0	1	1	2	3	4	5

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1
	60%	0	0	0	0	0	0	0	1	1	1	2
	70%	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	0	1	1	2	2
	90%	0	0	0	0	0	0	1	1	1	2	3
	100%	0	0	0	0	0	0	1	1	1	2	3
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	2
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	2	3	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	0	1	1	2	4	5
	70%	0	0	0	0	0	1	1	2	3	5	6
	80%	0	0	0	0	0	1	1	2	3	5	6
	90%	0	0	0	0	0	1	1	2	4	6	7
	100%	0	0	0	0	0	1	2	2	4	6	8

Table 3.420 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.30%	0.38%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.63%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	30%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.11%
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.21%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.20%	0.25%
	80%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.28%
	90%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.26%	0.32%
	100%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.28%	0.35%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	30%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.14%	0.24%	0.39%	0.48%
	60%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.46%	0.58%
	70%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.34%	0.54%	0.67%
	80%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.39%	0.62%	0.77%
	90%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.69%	0.87%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.19%	0.29%	0.48%	0.77%	0.96%

Table 3.421 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Shiant Isles SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	3	4	7	9
	50%	0	0	0	0	1	1	2	3	5	9	11
	60%	0	0	0	1	1	1	3	4	6	10	13
	70%	0	0	0	1	1	2	3	5	8	12	15
	80%	0	0	1	1	1	2	3	5	9	14	17
	90%	0	0	1	1	1	2	4	6	10	16	19
	100%	0	0	1	1	1	2	4	6	11	17	22

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	1	1	1	2
	30%	0	0	0	0	0	0	1	1	1	2	3
	40%	0	0	0	0	0	0	1	1	2	3	4
	50%	0	0	0	0	0	0	1	1	2	4	4
	60%	0	0	0	0	0	1	1	2	3	4	5
	70%	0	0	0	0	0	1	1	2	3	5	6
	80%	0	0	0	0	0	1	1	2	4	6	7
	90%	0	0	0	0	0	1	2	2	4	6	8
	100%	0	0	0	0	0	1	2	3	4	7	9
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	0	1	1	2	4	6	7
	30%	0	0	0	0	1	1	2	3	5	9	11
	40%	0	0	0	1	1	1	3	4	7	12	14
	50%	0	0	1	1	1	2	4	5	9	14	18
	60%	0	0	1	1	1	2	4	6	11	17	22
	70%	0	1	1	1	1	3	5	8	13	20	25
	80%	0	1	1	1	1	3	6	9	14	23	29
	90%	0	1	1	1	2	3	6	10	16	26	32
	100%	0	1	1	1	2	4	7	11	18	29	36

Table 3.422 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Shiant Isles SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.26%
	20%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.51%
	30%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.38%	0.61%	0.77%
	40%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.31%	0.51%	0.82%	1.02%
	50%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.38%	0.64%	1.02%	1.28%
	60%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.31%	0.46%	0.77%	1.23%	1.54%
	70%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.54%	0.90%	1.43%	1.79%
	80%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.41%	0.61%	1.02%	1.64%	2.05%
	90%	0.02%	0.05%	0.07%	0.09%	0.12%	0.23%	0.46%	0.69%	1.15%	1.84%	2.30%
	100%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.51%	0.77%	1.28%	2.05%	2.56%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.11%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.21%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.13%	0.21%	0.34%	0.42%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.26%	0.42%	0.53%
	60%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.63%
	70%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.59%	0.74%
	80%	0.01%	0.02%	0.03%	0.03%	0.04%	0.08%	0.17%	0.25%	0.42%	0.68%	0.85%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.19%	0.29%	0.48%	0.76%	0.95%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.85%	1.06%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.21%	0.34%	0.43%
	20%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.68%	0.86%
	30%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.39%	0.64%	1.03%	1.28%
	40%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.34%	0.51%	0.86%	1.37%	1.71%
	50%	0.02%	0.04%	0.06%	0.09%	0.11%	0.21%	0.43%	0.64%	1.07%	1.71%	2.14%
	60%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.51%	0.77%	1.28%	2.05%	2.57%
	70%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.60%	0.90%	1.50%	2.40%	2.99%
	80%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.68%	1.03%	1.71%	2.74%	3.42%
	90%	0.04%	0.08%	0.12%	0.15%	0.19%	0.39%	0.77%	1.16%	1.93%	3.08%	3.85%
	100%	0.04%	0.09%	0.13%	0.17%	0.21%	0.43%	0.86%	1.28%	2.14%	3.42%	4.28%

Table 3.423 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Handa SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	4	4
	40%	0	0	0	0	0	0	1	1	2	4	5	5
	50%	0	0	0	0	0	1	1	2	3	5	6	6
	60%	0	0	0	0	0	1	1	2	4	6	7	7
	70%	0	0	0	0	0	1	2	2	4	7	8	8
	80%	0	0	0	0	0	1	2	3	5	8	9	9
	90%	0	0	0	0	1	1	2	3	5	8	11	11
	100%	0	0	0	0	1	1	2	4	6	9	12	12

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	0	1	1	2
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	1	1	1	2	3
	60%	0	0	0	0	0	0	1	1	2	3	3
	70%	0	0	0	0	0	0	1	1	2	3	4
	80%	0	0	0	0	0	0	1	1	2	3	4
	90%	0	0	0	0	0	0	1	1	2	4	5
	100%	0	0	0	0	0	1	1	2	3	4	5
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	1	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	4	5
	40%	0	0	0	0	0	1	1	2	4	6	7
	50%	0	0	0	0	0	1	2	3	5	7	9
	60%	0	0	0	0	1	1	2	3	5	9	11
	70%	0	0	0	1	1	1	3	4	6	10	13
	80%	0	0	0	1	1	1	3	4	7	12	15
	90%	0	0	0	1	1	2	3	5	8	13	16
	100%	0	0	1	1	1	2	4	5	9	15	18

Table 3.424 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Handa SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.21%	0.33%	0.41%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.44%	0.55%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.34%	0.55%	0.68%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.25%	0.41%	0.66%	0.82%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.19%	0.29%	0.48%	0.77%	0.96%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.33%	0.55%	0.88%	1.10%
	90%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.25%	0.37%	0.62%	0.99%	1.23%
	100%	0.01%	0.03%	0.04%	0.05%	0.07%	0.14%	0.27%	0.41%	0.68%	1.10%	1.37%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.15%	0.18%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.20%	0.24%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.37%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.21%	0.34%	0.43%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.24%	0.39%	0.49%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.44%	0.55%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.49%	0.61%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.21%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.13%	0.21%	0.34%	0.42%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.63%
	40%	0.01%	0.02%	0.03%	0.03%	0.04%	0.08%	0.17%	0.25%	0.42%	0.68%	0.84%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.84%	1.06%
	60%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.25%	0.38%	0.63%	1.01%	1.27%
	70%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.30%	0.44%	0.74%	1.18%	1.48%
	80%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.34%	0.51%	0.84%	1.35%	1.69%
	90%	0.02%	0.04%	0.06%	0.08%	0.09%	0.19%	0.38%	0.57%	0.95%	1.52%	1.90%
	100%	0.02%	0.04%	0.06%	0.08%	0.11%	0.21%	0.42%	0.63%	1.06%	1.69%	2.11%

Table 3.425 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Handa SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	2
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	2	3	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	0	1	1	2	4	5
	70%	0	0	0	0	0	1	1	2	3	4	5
	80%	0	0	0	0	0	1	1	2	3	5	6
	90%	0	0	0	0	0	1	1	2	4	6	7
	100%	0	0	0	0	0	1	2	2	4	6	8

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	2
	90%	0	0	0	0	0	0	0	1	1	1	2
	100%	0	0	0	0	0	0	0	1	1	2	2
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	2
	20%	0	0	0	0	0	0	1	1	2	2	3
	30%	0	0	0	0	0	0	1	1	2	4	5
	40%	0	0	0	0	0	1	1	2	3	5	6
	50%	0	0	0	0	0	1	2	2	4	6	8
	60%	0	0	0	0	0	1	2	3	5	7	9
	70%	0	0	0	0	1	1	2	3	5	9	11
	80%	0	0	0	0	1	1	2	4	6	10	12
	90%	0	0	0	1	1	1	3	4	7	11	14
	100%	0	0	0	1	1	2	3	5	8	12	16

Table 3.426 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Handa SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.15%	0.18%
	30%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.36%	0.45%
	60%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.44%	0.54%
	70%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.63%
	80%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.36%	0.58%	0.73%
	90%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.41%	0.65%	0.82%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.73%	0.91%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.04%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	50%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	60%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.13%
	70%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	100%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	20%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	30%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.54%
	40%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.22%	0.36%	0.58%	0.72%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%
	60%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.33%	0.54%	0.87%	1.08%
	70%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.25%	0.38%	0.63%	1.01%	1.26%
	80%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.29%	0.43%	0.72%	1.16%	1.45%
	90%	0.02%	0.03%	0.05%	0.07%	0.08%	0.16%	0.33%	0.49%	0.81%	1.30%	1.63%
	100%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.54%	0.90%	1.45%	1.81%

Table 3.427 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Handa SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	1	2	3
	50%	0	0	0	0	0	0	1	1	2	3	3
	60%	0	0	0	0	0	0	1	1	2	3	4
	70%	0	0	0	0	0	0	1	1	2	4	5
	80%	0	0	0	0	0	1	1	2	3	4	5
	90%	0	0	0	0	0	1	1	2	3	5	6
	100%	0	0	0	0	0	1	1	2	3	5	6

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	1	1	1	2
	60%	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	1	1	1	2	3
	80%	0	0	0	0	0	0	1	1	1	2	3
	90%	0	0	0	0	0	0	1	1	2	3	3
	100%	0	0	0	0	0	0	1	1	2	3	4
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	1	2	3
	40%	0	0	0	0	0	0	1	1	2	3	4
	50%	0	0	0	0	0	0	1	1	2	4	5
	60%	0	0	0	0	0	1	1	2	3	5	6
	70%	0	0	0	0	0	1	1	2	3	6	7
	80%	0	0	0	0	0	1	2	2	4	6	8
	90%	0	0	0	0	0	1	2	3	4	7	9
	100%	0	0	0	0	0	1	2	3	5	8	10

Table 3.428 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Handa SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.30%	0.38%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.36%	0.45%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.26%	0.42%	0.53%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.60%
	90%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.20%	0.34%	0.54%	0.68%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.38%	0.60%	0.75%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.08%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.17%
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.21%
	60%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	70%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.29%
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.30%	0.38%
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.13%	0.21%	0.34%	0.42%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	60%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.34%	0.55%	0.69%
	70%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.64%	0.80%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.46%	0.73%	0.92%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.51%	0.82%	1.03%
	100%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.92%	1.14%

Table 3.429 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Handa SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	1	2	3
	20%	0	0	0	0	0	1	1	2	3	4	5
	30%	0	0	0	0	0	1	2	2	4	6	8
	40%	0	0	0	0	1	1	2	3	5	8	10
	50%	0	0	0	1	1	1	3	4	7	10	13
	60%	0	0	0	1	1	2	3	5	8	13	16
	70%	0	0	1	1	1	2	4	5	9	15	18
	80%	0	0	1	1	1	2	4	6	10	17	21
	90%	0	0	1	1	1	2	5	7	12	19	23
	100%	0	1	1	1	1	3	5	8	13	21	26

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	3
	40%	0	0	0	0	0	0	1	1	2	3	4
	50%	0	0	0	0	0	1	1	2	3	4	5
	60%	0	0	0	0	0	1	1	2	3	5	6
	70%	0	0	0	0	0	1	2	2	4	6	8
	80%	0	0	0	0	0	1	2	3	4	7	9
	90%	0	0	0	0	0	1	2	3	5	8	10
	100%	0	0	0	0	1	1	2	3	5	9	11
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	2	3	4
	20%	0	0	0	0	0	1	2	3	4	7	9
	30%	0	0	0	1	1	1	3	4	7	10	13
	40%	0	0	1	1	1	2	3	5	9	14	17
	50%	0	0	1	1	1	2	4	7	11	17	22
	60%	0	1	1	1	1	3	5	8	13	21	26
	70%	0	1	1	1	2	3	6	9	15	24	31
	80%	0	1	1	1	2	3	7	10	17	28	35
	90%	0	1	1	2	2	4	8	12	20	31	39
	100%	0	1	1	2	2	4	9	13	22	35	44

Table 3.430 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Handa SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	20%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.61%
	30%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.73%	0.91%
	40%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.61%	0.97%	1.21%
	50%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.45%	0.76%	1.21%	1.51%
	60%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.55%	0.91%	1.45%	1.82%
	70%	0.02%	0.04%	0.06%	0.08%	0.11%	0.21%	0.42%	0.64%	1.06%	1.70%	2.12%
	80%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.48%	0.73%	1.21%	1.94%	2.42%
	90%	0.03%	0.05%	0.08%	0.11%	0.14%	0.27%	0.55%	0.82%	1.36%	2.18%	2.73%
	100%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.61%	0.91%	1.51%	2.42%	3.03%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.30%	0.38%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.31%	0.50%	0.63%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.38%	0.60%	0.75%
	70%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.26%	0.44%	0.70%	0.88%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.80%	1.00%
	90%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.56%	0.90%	1.13%
	100%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.25%	0.38%	0.63%	1.00%	1.25%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.40%	0.51%
	20%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.51%	0.81%	1.01%
	30%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.46%	0.76%	1.21%	1.52%
	40%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.40%	0.61%	1.01%	1.62%	2.02%
	50%	0.03%	0.05%	0.08%	0.10%	0.13%	0.25%	0.51%	0.76%	1.27%	2.02%	2.53%
	60%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.61%	0.91%	1.52%	2.43%	3.04%
	70%	0.04%	0.07%	0.11%	0.14%	0.18%	0.35%	0.71%	1.06%	1.77%	2.83%	3.54%
	80%	0.04%	0.08%	0.12%	0.16%	0.20%	0.40%	0.81%	1.21%	2.02%	3.24%	4.05%
	90%	0.05%	0.09%	0.14%	0.18%	0.23%	0.46%	0.91%	1.37%	2.28%	3.64%	4.55%
	100%	0.05%	0.10%	0.15%	0.20%	0.25%	0.51%	1.01%	1.52%	2.53%	4.05%	5.06%

Table 3.431 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Cape Wrath SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	0	1	1	1	2	3
	70%	0	0	0	0	0	0	0	1	1	2	3	3
	80%	0	0	0	0	0	0	0	1	1	2	3	4
	90%	0	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	0	1	1	2	4	5

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	2
	80%	0	0	0	0	0	0	0	1	1	1	2
	90%	0	0	0	0	0	0	0	1	1	2	2
	100%	0	0	0	0	0	0	0	1	1	2	2
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	1	2	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	0	1	1	2	4	4
	70%	0	0	0	0	0	1	1	2	3	4	5
	80%	0	0	0	0	0	1	1	2	3	5	6
	90%	0	0	0	0	0	1	1	2	3	5	7
	100%	0	0	0	0	0	1	1	2	4	6	7

Table 3.432 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Cape Wrath SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.21%	0.34%	0.43%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	50%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.36%	0.57%	0.71%
	60%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.68%	0.86%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.80%	1.00%
	80%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.91%	1.14%
	90%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.38%	0.64%	1.03%	1.28%
	100%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.29%	0.43%	0.71%	1.14%	1.43%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.30%	0.38%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.44%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.63%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.66%
	40%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.26%	0.44%	0.70%	0.88%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.33%	0.55%	0.88%	1.10%
	60%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.26%	0.40%	0.66%	1.05%	1.32%
	70%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.31%	0.46%	0.77%	1.23%	1.54%
	80%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.35%	0.53%	0.88%	1.41%	1.76%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.40%	0.59%	0.99%	1.58%	1.98%
	100%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.44%	0.66%	1.10%	1.76%	2.20%

Table 3.433 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Cape Wrath SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1	2
	60%	0	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	0	1	1	1	2	3
	90%	0	0	0	0	0	0	0	1	1	1	2	3
	100%	0	0	0	0	0	0	0	1	1	2	3	3

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	1	2	3
	50%	0	0	0	0	0	0	1	1	2	3	3
	60%	0	0	0	0	0	0	1	1	2	3	4
	70%	0	0	0	0	0	0	1	1	2	4	5
	80%	0	0	0	0	0	1	1	2	3	4	5
	90%	0	0	0	0	0	1	1	2	3	5	6
	100%	0	0	0	0	0	1	1	2	3	5	6

Table 3.434 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Cape Wrath SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	30%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.31%	0.38%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.14%	0.24%	0.38%	0.48%
	60%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	70%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.67%
	80%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.38%	0.61%	0.76%
	90%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.69%	0.86%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.19%	0.29%	0.48%	0.76%	0.96%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.07%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%
	50%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%
	60%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	70%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.15%	0.19%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.17%	0.21%
	100%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.30%	0.38%
	30%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.29%	0.46%	0.57%
	40%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.38%	0.61%	0.76%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.19%	0.29%	0.48%	0.76%	0.95%
	60%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.91%	1.14%
	70%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.27%	0.40%	0.67%	1.07%	1.33%
	80%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.46%	0.76%	1.22%	1.52%
	90%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.34%	0.51%	0.86%	1.37%	1.71%
	100%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.38%	0.57%	0.95%	1.52%	1.90%

Table 3.435 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Cape Wrath SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0	1
	30%	0	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1	2
	70%	0	0	0	0	0	0	0	0	1	1	1	2
	80%	0	0	0	0	0	0	0	0	1	1	2	2
	90%	0	0	0	0	0	0	0	0	1	1	2	2
	100%	0	0	0	0	0	0	0	1	1	1	2	3

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	1	1	1	2	3
	80%	0	0	0	0	0	0	1	1	2	3	3
	90%	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	1	1	2	3	4

Table 3.436 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Cape Wrath SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.31%	0.39%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.44%	0.55%
	80%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.31%	0.50%	0.63%
	90%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.56%	0.71%
	100%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.78%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.04%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.13%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	60%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.25%	0.31%
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.28%	0.35%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.39%
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.14%	0.24%	0.38%	0.48%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.60%
	60%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.36%	0.57%	0.71%
	70%	0.01%	0.02%	0.03%	0.03%	0.04%	0.08%	0.17%	0.25%	0.42%	0.67%	0.83%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.19%	0.29%	0.48%	0.76%	0.95%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.54%	0.86%	1.07%
	100%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.60%	0.95%	1.19%

Table 3.437 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Cape Wrath SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	3
	40%	0	0	0	0	0	0	1	1	2	3	4
	50%	0	0	0	0	0	1	1	2	3	4	5
	60%	0	0	0	0	0	1	1	2	3	5	6
	70%	0	0	0	0	0	1	2	2	4	6	8
	80%	0	0	0	0	0	1	2	3	4	7	9
	90%	0	0	0	0	0	1	2	3	5	8	10
	100%	0	0	0	0	1	1	2	3	5	9	11

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	1	1	1	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	1	1	1	2	3
	70%	0	0	0	0	0	0	1	1	2	2	3
	80%	0	0	0	0	0	0	1	1	2	3	4
	90%	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	1	1	2	4	4
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	1	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	4	5
	40%	0	0	0	0	0	1	1	2	4	6	7
	50%	0	0	0	0	0	1	2	3	5	7	9
	60%	0	0	0	0	1	1	2	3	5	9	11
	70%	0	0	0	1	1	1	3	4	6	10	13
	80%	0	0	0	1	1	1	3	4	7	12	14
	90%	0	0	0	1	1	2	3	5	8	13	16
	100%	0	0	1	1	1	2	4	5	9	14	18

Table 3.438 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Cape Wrath SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.32%
	20%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.63%
	30%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.19%	0.28%	0.47%	0.76%	0.95%
	40%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.25%	0.38%	0.63%	1.01%	1.27%
	50%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.47%	0.79%	1.27%	1.58%
	60%	0.02%	0.04%	0.06%	0.08%	0.09%	0.19%	0.38%	0.57%	0.95%	1.52%	1.90%
	70%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.44%	0.66%	1.11%	1.77%	2.22%
	80%	0.03%	0.05%	0.08%	0.10%	0.13%	0.25%	0.51%	0.76%	1.27%	2.03%	2.53%
	90%	0.03%	0.06%	0.09%	0.11%	0.14%	0.28%	0.57%	0.85%	1.42%	2.28%	2.85%
	100%	0.03%	0.06%	0.09%	0.13%	0.16%	0.32%	0.63%	0.95%	1.58%	2.53%	3.16%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.10%	0.13%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.31%	0.39%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.16%	0.26%	0.42%	0.52%
	50%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.52%	0.65%
	60%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.78%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.46%	0.73%	0.91%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.84%	1.05%
	90%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.35%	0.59%	0.94%	1.18%
	100%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.26%	0.39%	0.65%	1.05%	1.31%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.26%	0.42%	0.53%
	20%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.85%	1.06%
	30%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.79%	1.27%	1.59%
	40%	0.02%	0.04%	0.06%	0.08%	0.11%	0.21%	0.42%	0.63%	1.06%	1.69%	2.12%
	50%	0.03%	0.05%	0.08%	0.11%	0.13%	0.26%	0.53%	0.79%	1.32%	2.12%	2.65%
	60%	0.03%	0.06%	0.10%	0.13%	0.16%	0.32%	0.63%	0.95%	1.59%	2.54%	3.17%
	70%	0.04%	0.07%	0.11%	0.15%	0.19%	0.37%	0.74%	1.11%	1.85%	2.96%	3.70%
	80%	0.04%	0.08%	0.13%	0.17%	0.21%	0.42%	0.85%	1.27%	2.12%	3.39%	4.23%
	90%	0.05%	0.10%	0.14%	0.19%	0.24%	0.48%	0.95%	1.43%	2.38%	3.81%	4.76%
	100%	0.05%	0.11%	0.16%	0.21%	0.26%	0.53%	1.06%	1.59%	2.65%	4.23%	5.29%

Table 3.439 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Lambay Island SPA** during **operation** of the Project in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	5	6
	20%	0	0	0	0	1	1	2	4	6	10	12
	30%	0	0	1	1	1	2	4	6	9	15	19
	40%	0	0	1	1	1	2	5	7	12	20	25
	50%	0	1	1	1	2	3	6	9	16	25	31
	60%	0	1	1	1	2	4	7	11	19	30	37
	70%	0	1	1	2	2	4	9	13	22	35	44
	80%	0	1	1	2	2	5	10	15	25	40	50
	90%	1	1	2	2	3	6	11	17	28	45	56
	100%	1	1	2	2	3	6	12	19	31	50	62

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	0	1	1	2
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	1	1	1	2	3
	60%	0	0	0	0	0	0	1	1	2	2	3
	70%	0	0	0	0	0	0	1	1	2	3	4
	80%	0	0	0	0	0	0	1	1	2	3	4
	90%	0	0	0	0	0	0	1	1	2	4	5
	100%	0	0	0	0	0	1	1	2	3	4	5
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	1	1	1	3	4	7	12	15
	20%	0	1	1	1	1	3	6	9	15	24	30
	30%	0	1	1	2	2	4	9	13	22	36	45
	40%	1	1	2	2	3	6	12	18	30	48	60
	50%	1	1	2	3	4	7	15	22	37	60	75
	60%	1	2	3	4	4	9	18	27	45	72	90
	70%	1	2	3	4	5	10	21	31	52	84	105
	80%	1	2	4	5	6	12	24	36	60	96	120
	90%	1	3	4	5	7	13	27	40	67	108	135
	100%	1	3	4	6	7	15	30	45	75	120	150

Table 3.440 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation** in the **breeding** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.65%	0.81%
	20%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.49%	0.81%	1.29%	1.62%
	30%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.49%	0.73%	1.21%	1.94%	2.43%
	40%	0.03%	0.06%	0.10%	0.13%	0.16%	0.32%	0.65%	0.97%	1.62%	2.59%	3.24%
	50%	0.04%	0.08%	0.12%	0.16%	0.20%	0.40%	0.81%	1.21%	2.02%	3.24%	4.05%
	60%	0.05%	0.10%	0.15%	0.19%	0.24%	0.49%	0.97%	1.46%	2.43%	3.88%	4.85%
	70%	0.06%	0.11%	0.17%	0.23%	0.28%	0.57%	1.13%	1.70%	2.83%	4.53%	5.66%
	80%	0.06%	0.13%	0.19%	0.26%	0.32%	0.65%	1.29%	1.94%	3.24%	5.18%	6.47%
	90%	0.07%	0.15%	0.22%	0.29%	0.36%	0.73%	1.46%	2.18%	3.64%	5.83%	7.28%
	100%	0.08%	0.16%	0.24%	0.32%	0.40%	0.81%	1.62%	2.43%	4.05%	6.47%	8.09%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%
	20%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.13%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	40%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.22%	0.27%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%
	60%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
	80%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.54%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.49%	0.61%
	100%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.34%	0.54%	0.67%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.97%	1.55%	1.94%
	20%	0.04%	0.08%	0.12%	0.16%	0.19%	0.39%	0.78%	1.16%	1.94%	3.10%	3.88%
	30%	0.06%	0.12%	0.17%	0.23%	0.29%	0.58%	1.16%	1.74%	2.91%	4.65%	5.82%
	40%	0.08%	0.16%	0.23%	0.31%	0.39%	0.78%	1.55%	2.33%	3.88%	6.20%	7.75%
	50%	0.10%	0.19%	0.29%	0.39%	0.48%	0.97%	1.94%	2.91%	4.85%	7.75%	9.69%
	60%	0.12%	0.23%	0.35%	0.47%	0.58%	1.16%	2.33%	3.49%	5.82%	9.31%	11.63%
	70%	0.14%	0.27%	0.41%	0.54%	0.68%	1.36%	2.71%	4.07%	6.78%	10.86%	13.57%
	80%	0.16%	0.31%	0.47%	0.62%	0.78%	1.55%	3.10%	4.65%	7.75%	12.41%	15.51%
	90%	0.17%	0.35%	0.52%	0.70%	0.87%	1.74%	3.49%	5.23%	8.72%	13.96%	17.45%
	100%	0.19%	0.39%	0.58%	0.78%	0.97%	1.94%	3.88%	5.82%	9.69%	15.51%	19.39%

Table 3.441 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Lambay Island SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	2
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	2	3	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	0	1	1	2	4	5
	70%	0	0	0	0	0	1	1	2	3	5	6
	80%	0	0	0	0	0	1	1	2	3	5	7
	90%	0	0	0	0	0	1	1	2	4	6	7
	100%	0	0	0	0	0	1	2	2	4	7	8

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	1	1	1	2
	60%	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	1	1	1	2	3
	80%	0	0	0	0	0	0	1	1	1	2	3
	90%	0	0	0	0	0	0	1	1	2	3	3
	100%	0	0	0	0	0	0	1	1	2	3	4
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	1	1	1	2	3
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	1	1	2	3	4	5
	50%	0	0	0	0	0	1	1	2	3	5	6
	60%	0	0	0	0	0	1	2	2	4	6	8
	70%	0	0	0	0	0	1	2	3	4	7	9
	80%	0	0	0	0	1	1	2	3	5	8	10
	90%	0	0	0	0	1	1	2	3	6	9	12
	100%	0	0	0	1	1	1	3	4	6	10	13

Table 3.442 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.11%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.22%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.26%	0.32%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.43%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.54%
	60%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.52%	0.65%
	70%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.38%	0.60%	0.76%
	80%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.69%	0.86%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.19%	0.29%	0.49%	0.78%	0.97%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.32%	0.54%	0.86%	1.08%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.14%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	60%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.38%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.43%
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.14%	0.24%	0.38%	0.48%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.17%
	20%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.33%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%
	40%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.53%	0.67%
	50%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.17%	0.25%	0.42%	0.67%	0.83%
	60%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.80%	1.00%
	70%	0.01%	0.02%	0.03%	0.05%	0.06%	0.12%	0.23%	0.35%	0.58%	0.93%	1.16%
	80%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.27%	0.40%	0.67%	1.06%	1.33%
	90%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.30%	0.45%	0.75%	1.20%	1.50%
	100%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.33%	0.50%	0.83%	1.33%	1.66%

Table 3.443 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Lambay Island SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	1	1	1	1	2
	50%	0	0	0	0	0	0	0	1	1	1	2	2
	60%	0	0	0	0	0	0	1	1	1	1	2	3
	70%	0	0	0	0	0	0	1	1	2	3	3	3
	80%	0	0	0	0	0	0	1	1	2	3	3	4
	90%	0	0	0	0	0	0	1	1	2	3	3	4
	100%	0	0	0	0	0	0	1	1	2	4	4	5

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	1	1	1	2
	30%	0	0	0	0	0	0	1	1	1	2	3
	40%	0	0	0	0	0	0	1	1	2	3	4
	50%	0	0	0	0	0	0	1	1	2	4	5
	60%	0	0	0	0	0	1	1	2	3	4	5
	70%	0	0	0	0	0	1	1	2	3	5	6
	80%	0	0	0	0	0	1	1	2	4	6	7
	90%	0	0	0	0	0	1	2	2	4	7	8
	100%	0	0	0	0	0	1	2	3	5	7	9

Table 3.444 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.12%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.28%	0.35%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.21%	0.33%	0.41%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.53%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.47%	0.59%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	70%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	80%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%
	90%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	100%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.14%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.12%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.28%	0.35%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.29%	0.47%	0.59%
	60%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.56%	0.71%
	70%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.25%	0.41%	0.66%	0.82%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.19%	0.28%	0.47%	0.75%	0.94%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.85%	1.06%
	100%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.35%	0.59%	0.94%	1.18%

Table 3.445 displacement matrices for **razorbill** apportioned to **Lambay Island SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	1	1	1	1	2
	50%	0	0	0	0	0	0	0	1	1	1	2	2
	60%	0	0	0	0	0	0	1	1	1	1	2	3
	70%	0	0	0	0	0	0	1	1	2	3	3	3
	80%	0	0	0	0	0	0	1	1	2	3	3	4
	90%	0	0	0	0	0	0	1	1	2	3	3	4
	100%	0	0	0	0	0	0	1	1	2	4	4	5

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1
	60%	0	0	0	0	0	0	0	0	1	1	2
	70%	0	0	0	0	0	0	0	1	1	1	2
	80%	0	0	0	0	0	0	0	1	1	2	2
	90%	0	0	0	0	0	0	0	1	1	2	2
	100%	0	0	0	0	0	0	1	1	1	2	3
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	1	2	3
	50%	0	0	0	0	0	0	1	1	2	3	3
	60%	0	0	0	0	0	0	1	1	2	3	4
	70%	0	0	0	0	0	0	1	1	2	4	5
	80%	0	0	0	0	0	1	1	2	3	4	6
	90%	0	0	0	0	0	1	1	2	3	5	6
	100%	0	0	0	0	0	1	1	2	3	6	7

Table 3.446 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.12%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.28%	0.36%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.21%	0.33%	0.42%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.53%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.47%	0.59%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.13%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.17%
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%
	80%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.27%
	90%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	100%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.33%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	30%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.36%	0.45%
	60%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.54%
	70%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.50%	0.63%
	80%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.22%	0.36%	0.58%	0.72%
	90%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.41%	0.65%	0.81%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.45%	0.72%	0.90%

Table 3.447 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Lambay Island SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	2	2	4	6	8
	20%	0	0	0	1	1	2	3	5	8	13	16
	30%	0	0	1	1	1	2	5	7	12	19	24
	40%	0	1	1	1	2	3	6	10	16	26	32
	50%	0	1	1	2	2	4	8	12	20	32	40
	60%	0	1	1	2	2	5	10	14	24	38	48
	70%	1	1	2	2	3	6	11	17	28	45	56
	80%	1	1	2	3	3	6	13	19	32	51	64
	90%	1	1	2	3	4	7	14	22	36	58	72
	100%	1	2	2	3	4	8	16	24	40	64	80

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	1	1	1	2	3
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	1	1	2	3	4	5
	50%	0	0	0	0	0	1	1	2	3	5	6
	60%	0	0	0	0	0	1	2	2	4	6	8
	70%	0	0	0	0	0	1	2	3	4	7	9
	80%	0	0	0	0	1	1	2	3	5	8	10
	90%	0	0	0	0	1	1	2	3	6	9	11
	100%	0	0	0	1	1	1	3	4	6	10	13
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	1	1	1	2	4	5	9	14	18
	20%	0	1	1	1	2	4	7	11	18	29	36
	30%	1	1	2	2	3	5	11	16	27	43	54
	40%	1	1	2	3	4	7	14	21	36	57	71
	50%	1	2	3	4	4	9	18	27	45	71	89
	60%	1	2	3	4	5	11	21	32	54	86	107
	70%	1	2	4	5	6	12	25	37	62	100	125
	80%	1	3	4	6	7	14	29	43	71	114	143
	90%	2	3	5	6	8	16	32	48	80	129	161
	100%	2	4	5	7	9	18	36	54	89	143	179

Table 3.448 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Lambay Island SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.83%	1.04%
	20%	0.02%	0.04%	0.06%	0.08%	0.10%	0.21%	0.41%	0.62%	1.04%	1.66%	2.07%
	30%	0.03%	0.06%	0.09%	0.12%	0.16%	0.31%	0.62%	0.93%	1.55%	2.48%	3.11%
	40%	0.04%	0.08%	0.12%	0.17%	0.21%	0.41%	0.83%	1.24%	2.07%	3.31%	4.14%
	50%	0.05%	0.10%	0.16%	0.21%	0.26%	0.52%	1.04%	1.55%	2.59%	4.14%	5.18%
	60%	0.06%	0.12%	0.19%	0.25%	0.31%	0.62%	1.24%	1.86%	3.11%	4.97%	6.21%
	70%	0.07%	0.14%	0.22%	0.29%	0.36%	0.72%	1.45%	2.17%	3.62%	5.80%	7.25%
	80%	0.08%	0.17%	0.25%	0.33%	0.41%	0.83%	1.66%	2.48%	4.14%	6.63%	8.28%
	90%	0.09%	0.19%	0.28%	0.37%	0.47%	0.93%	1.86%	2.80%	4.66%	7.45%	9.32%
	100%	0.10%	0.21%	0.31%	0.41%	0.52%	1.04%	2.07%	3.11%	5.18%	8.28%	10.35%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	20%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.16%	0.26%	0.33%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.24%	0.39%	0.49%
	40%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.52%	0.65%
	50%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.41%	0.65%	0.82%
	60%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.29%	0.49%	0.78%	0.98%
	70%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.91%	1.14%
	80%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.26%	0.39%	0.65%	1.04%	1.30%
	90%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.29%	0.44%	0.73%	1.17%	1.47%
	100%	0.02%	0.03%	0.05%	0.07%	0.08%	0.16%	0.33%	0.49%	0.82%	1.30%	1.63%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.02%	0.05%	0.07%	0.09%	0.12%	0.23%	0.46%	0.69%	1.16%	1.85%	2.31%
	20%	0.05%	0.09%	0.14%	0.19%	0.23%	0.46%	0.93%	1.39%	2.31%	3.70%	4.63%
	30%	0.07%	0.14%	0.21%	0.28%	0.35%	0.69%	1.39%	2.08%	3.47%	5.55%	6.94%
	40%	0.09%	0.19%	0.28%	0.37%	0.46%	0.93%	1.85%	2.78%	4.63%	7.40%	9.25%
	50%	0.12%	0.23%	0.35%	0.46%	0.58%	1.16%	2.31%	3.47%	5.78%	9.25%	11.56%
	60%	0.14%	0.28%	0.42%	0.56%	0.69%	1.39%	2.78%	4.16%	6.94%	11.10%	13.88%
	70%	0.16%	0.32%	0.49%	0.65%	0.81%	1.62%	3.24%	4.86%	8.09%	12.95%	16.19%
	80%	0.19%	0.37%	0.56%	0.74%	0.93%	1.85%	3.70%	5.55%	9.25%	14.80%	18.50%
	90%	0.21%	0.42%	0.62%	0.83%	1.04%	2.08%	4.16%	6.24%	10.41%	16.65%	20.81%
	100%	0.23%	0.46%	0.69%	0.93%	1.16%	2.31%	4.63%	6.94%	11.56%	18.50%	23.13%

Table 3.449 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Ireland's Eye SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1

Table 3.450 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Ireland's Eye SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.14%	0.17%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.16%	0.26%	0.42%	0.52%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.46%	0.58%

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	40%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	60%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.21%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%
	100%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	30%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.27%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	60%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.43%	0.53%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.19%	0.31%	0.50%	0.62%
	80%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.36%	0.57%	0.71%
	90%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.64%	0.80%
	100%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.45%	0.71%	0.89%

Table 3.451 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Ireland's Eye SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	1
	60%	0	0	0	0	0	0	0	0	0	0	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1

Table 3.452 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Ireland's Eye SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%
	40%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.16%
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.15%	0.19%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.17%	0.22%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.20%	0.25%
	90%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.22%	0.28%
	100%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.31%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.15%	0.19%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.20%	0.25%
	50%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.25%	0.31%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.19%	0.30%	0.37%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.43%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.25%	0.40%	0.49%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.44%	0.56%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.19%	0.31%	0.49%	0.62%

Table 3.453 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Ireland's Eye SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1

Table 3.454 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Ireland's Eye SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.22%
	80%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	90%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%
	100%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.25%	0.32%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	60%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.11%
	70%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	80%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	90%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	100%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.14%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	60%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.43%
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.14%	0.24%	0.39%	0.48%

Table 3.455 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Ireland's Eye SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	2
	90%	0	0	0	0	0	0	0	1	1	1	2
	100%	0	0	0	0	0	0	0	1	1	2	2

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	1
	70%	0	0	0	0	0	0	0	0	0	0	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	1	1	1	2
	60%	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	1	1	1	2	3
	90%	0	0	0	0	0	0	1	1	2	2	3
	100%	0	0	0	0	0	0	1	1	2	3	3

Table 3.456 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Ireland's Eye SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.14%	0.24%	0.39%	0.48%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.60%
	60%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.22%	0.36%	0.58%	0.72%
	70%	0.01%	0.02%	0.03%	0.03%	0.04%	0.08%	0.17%	0.25%	0.42%	0.68%	0.84%
	80%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.19%	0.29%	0.48%	0.77%	0.97%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.22%	0.33%	0.54%	0.87%	1.09%
	100%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.60%	0.97%	1.21%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.26%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.25%	0.31%
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.33%	0.41%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.26%	0.41%	0.51%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	30%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.48%	0.60%
	40%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.64%	0.80%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.50%	0.80%	1.00%
	60%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.60%	0.96%	1.20%
	70%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.42%	0.70%	1.12%	1.39%
	80%	0.02%	0.03%	0.05%	0.06%	0.08%	0.16%	0.32%	0.48%	0.80%	1.28%	1.59%
	90%	0.02%	0.04%	0.05%	0.07%	0.09%	0.18%	0.36%	0.54%	0.90%	1.43%	1.79%
	100%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.40%	0.60%	1.00%	1.59%	1.99%

Table 3.457 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	0	1	1	2
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	1	1	1	2	3
	60%	0	0	0	0	0	0	1	1	2	3	3
	70%	0	0	0	0	0	0	1	1	2	3	4
	80%	0	0	0	0	0	0	1	1	2	4	4
	90%	0	0	0	0	0	0	1	1	2	4	5
	100%	0	0	0	0	0	1	1	2	3	4	6

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	1	1	1	2
	80%	0	0	0	0	0	0	0	1	1	2	2
	90%	0	0	0	0	0	0	0	1	1	2	2
	100%	0	0	0	0	0	0	0	1	1	2	2
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	1	1	1	2
	30%	0	0	0	0	0	0	1	1	1	2	3
	40%	0	0	0	0	0	0	1	1	2	3	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	1	1	2	3	4	5
	70%	0	0	0	0	0	1	1	2	3	5	6
	80%	0	0	0	0	0	1	1	2	3	5	7
	90%	0	0	0	0	0	1	2	2	4	6	8
	100%	0	0	0	0	0	1	2	3	4	7	9

Table 3.458 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.11%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.21%
	30%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.16%	0.25%	0.32%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.13%	0.21%	0.34%	0.42%
	50%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.26%	0.42%	0.53%
	60%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.63%
	70%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.59%	0.74%
	80%	0.01%	0.02%	0.03%	0.03%	0.04%	0.08%	0.17%	0.25%	0.42%	0.68%	0.84%
	90%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.19%	0.28%	0.47%	0.76%	0.95%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.84%	1.06%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.09%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.15%	0.19%
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.24%
	60%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.23%	0.28%
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.16%	0.26%	0.33%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.30%	0.38%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.13%	0.21%	0.34%	0.42%
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.24%	0.38%	0.47%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	20%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.16%	0.26%	0.33%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.24%	0.39%	0.49%
	40%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.52%	0.65%
	50%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.41%	0.65%	0.81%
	60%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.29%	0.49%	0.78%	0.98%
	70%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.91%	1.14%
	80%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.26%	0.39%	0.65%	1.04%	1.30%
	90%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.29%	0.44%	0.73%	1.17%	1.46%
	100%	0.02%	0.03%	0.05%	0.07%	0.08%	0.16%	0.33%	0.49%	0.81%	1.30%	1.63%

Table 3.459 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1
	60%	0	0	0	0	0	0	0	0	1	1	2
	70%	0	0	0	0	0	0	0	1	1	1	2
	80%	0	0	0	0	0	0	0	1	1	2	2
	90%	0	0	0	0	0	0	0	1	1	2	2
	100%	0	0	0	0	0	0	1	1	1	2	3

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	1
	100%	0	0	0	0	0	0	0	0	0	0	1
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	0	1	1	2
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	1	1	1	2	3
	60%	0	0	0	0	0	0	1	1	2	2	3
	70%	0	0	0	0	0	0	1	1	2	3	4
	80%	0	0	0	0	0	0	1	1	2	3	4
	90%	0	0	0	0	0	0	1	1	2	4	5
	100%	0	0	0	0	0	1	1	2	3	4	5

Table 3.460 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.20%	0.25%
	60%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.36%	0.45%
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.08%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	90%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.11%
	100%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.12%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	30%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.39%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.15%	0.25%	0.39%	0.49%
	60%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.18%	0.30%	0.47%	0.59%
	70%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.35%	0.55%	0.69%
	80%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.39%	0.63%	0.79%
	90%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.27%	0.44%	0.71%	0.89%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.49%	0.79%	0.99%

Table 3.461 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Saltee Islands SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	1	1	1
	50%	0	0	0	0	0	0	0	0	1	1	2
	60%	0	0	0	0	0	0	0	1	1	1	2
	70%	0	0	0	0	0	0	0	1	1	2	2
	80%	0	0	0	0	0	0	0	1	1	2	2
	90%	0	0	0	0	0	0	1	1	1	2	3
	100%	0	0	0	0	0	0	1	1	2	2	3

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	2
	100%	0	0	0	0	0	0	0	1	1	1	2
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	1	1	1	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	1	1	1	2	3
	70%	0	0	0	0	0	0	1	1	2	3	3
	80%	0	0	0	0	0	0	1	1	2	3	4
	90%	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	1	1	2	4	5

Table 3.462 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%
	30%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.14%	0.17%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.19%	0.23%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.23%	0.29%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%
	70%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.41%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	90%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.16%	0.26%	0.42%	0.52%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.46%	0.58%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.19%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	80%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	90%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.23%	0.29%
	100%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.26%	0.32%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	30%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.28%	0.35%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.22%	0.35%	0.44%
	60%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.26%	0.42%	0.53%
	70%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.19%	0.31%	0.49%	0.62%
	80%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.56%	0.71%
	90%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.24%	0.40%	0.63%	0.79%
	100%	0.01%	0.02%	0.03%	0.04%	0.04%	0.09%	0.18%	0.26%	0.44%	0.71%	0.88%

Table 3.463 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Saltee Islands SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	3
	40%	0	0	0	0	0	0	1	1	2	4	4
	50%	0	0	0	0	0	1	1	2	3	4	6
	60%	0	0	0	0	0	1	1	2	3	5	7
	70%	0	0	0	0	0	1	2	2	4	6	8
	80%	0	0	0	0	0	1	2	3	4	7	9
	90%	0	0	0	0	1	1	2	3	5	8	10
	100%	0	0	0	0	1	1	2	3	6	9	11

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	1	1	1	2	3
	70%	0	0	0	0	0	0	1	1	2	3	3
	80%	0	0	0	0	0	0	1	1	2	3	4
	90%	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	1	1	2	4	5
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	1	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	4	6
	40%	0	0	0	0	0	1	1	2	4	6	7
	50%	0	0	0	0	0	1	2	3	5	7	9
	60%	0	0	0	0	1	1	2	3	6	9	11
	70%	0	0	0	1	1	1	3	4	6	10	13
	80%	0	0	0	1	1	1	3	4	7	12	15
	90%	0	0	0	1	1	2	3	5	8	13	17
	100%	0	0	1	1	1	2	4	6	9	15	18

Table 3.464 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Saltee Islands SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.21%
	20%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.09%	0.13%	0.21%	0.34%	0.43%
	30%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
	40%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.68%	0.85%
	50%	0.01%	0.02%	0.03%	0.04%	0.05%	0.11%	0.21%	0.32%	0.53%	0.85%	1.07%
	60%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.26%	0.38%	0.64%	1.02%	1.28%
	70%	0.01%	0.03%	0.04%	0.06%	0.07%	0.15%	0.30%	0.45%	0.75%	1.19%	1.49%
	80%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.34%	0.51%	0.85%	1.36%	1.70%
	90%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.38%	0.58%	0.96%	1.53%	1.92%
	100%	0.02%	0.04%	0.06%	0.09%	0.11%	0.21%	0.43%	0.64%	1.07%	1.70%	2.13%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.15%	0.18%
	30%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.37%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	60%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.44%	0.55%
	70%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
	80%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.59%	0.73%
	90%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.25%	0.41%	0.66%	0.82%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.46%	0.73%	0.92%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.28%	0.35%
	20%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.21%	0.35%	0.56%	0.70%
	30%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.21%	0.31%	0.52%	0.84%	1.05%
	40%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.42%	0.70%	1.12%	1.40%
	50%	0.02%	0.03%	0.05%	0.07%	0.09%	0.17%	0.35%	0.52%	0.87%	1.40%	1.75%
	60%	0.02%	0.04%	0.06%	0.08%	0.10%	0.21%	0.42%	0.63%	1.05%	1.68%	2.10%
	70%	0.02%	0.05%	0.07%	0.10%	0.12%	0.24%	0.49%	0.73%	1.22%	1.96%	2.45%
	80%	0.03%	0.06%	0.08%	0.11%	0.14%	0.28%	0.56%	0.84%	1.40%	2.24%	2.80%
	90%	0.03%	0.06%	0.09%	0.13%	0.16%	0.31%	0.63%	0.94%	1.57%	2.52%	3.15%
	100%	0.03%	0.07%	0.10%	0.14%	0.17%	0.35%	0.70%	1.05%	1.75%	2.80%	3.50%

Table 3.465 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Cliffs of Moher SPA** during **operation** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	1
	100%	0	0	0	0	0	0	0	0	0	0	1
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	1	1	1	2
	90%	0	0	0	0	0	0	0	1	1	2	2
	100%	0	0	0	0	0	0	0	1	1	2	2

Table 3.466 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Cliffs of Moher SPA** due to displacement from Morecambe OWF during **operation** in the **autumn migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.10%	0.13%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	80%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.21%	0.26%
	90%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.15%	0.24%	0.29%
	100%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.16%	0.26%	0.33%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	70%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	80%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.12%
	90%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.10%	0.13%
	100%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.12%	0.15%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.28%	0.35%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.36%	0.45%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%

Table 3.467 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Cliffs of Moher SPA** during **operation** of the Project in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	2
	90%	0	0	0	0	0	0	0	1	1	1	2
	100%	0	0	0	0	0	0	0	1	1	2	2

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	1	1	2
	50%	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	1	1	1	2	3
	80%	0	0	0	0	0	0	1	1	2	2	3
	90%	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	1	1	2	3	4

Table 3.468 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Cliffs of Moher SPA** due to displacement from Morecambe OWF during **operation** in the **winter** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.05%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.09%	0.15%	0.18%
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.11%	0.18%	0.23%
	60%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.22%	0.28%
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.26%	0.32%
	80%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.37%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.21%	0.33%	0.41%
	100%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%



LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.03%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.04%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.06%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.07%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	90%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	100%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.11%
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.15%	0.18%
	30%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%
	40%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.37%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.46%
	60%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.11%	0.16%	0.27%	0.44%	0.55%
	70%	0.01%	0.01%	0.02%	0.03%	0.03%	0.06%	0.13%	0.19%	0.32%	0.51%	0.64%
	80%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.15%	0.22%	0.37%	0.59%	0.73%
	90%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.16%	0.25%	0.41%	0.66%	0.82%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.18%	0.27%	0.46%	0.73%	0.92%

Table 3.469 Mean, LCI and UCI displacement matrices for **razorbill** apportioned to **Cliffs of Moher SPA** during **operation** of the Project in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	1
	80%	0	0	0	0	0	0	0	0	0	0	1
	90%	0	0	0	0	0	0	0	0	0	1	1
	100%	0	0	0	0	0	0	0	0	0	1	1

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	0	1	1
	80%	0	0	0	0	0	0	0	0	0	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	1

Table 3.470 Mean, LCI and UCI displacement matrices showing change in mortality rate for **razorbill** apportioned to **Cliffs of Moher SPA** due to displacement from Morecambe OWF during **operation** in the **spring migration** season. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.04%	0.07%	0.09%
	60%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.11%
	70%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.06%	0.10%	0.13%
	80%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	90%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	100%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%

LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.02%	0.03%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.06%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.07%	0.09%
	100%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.02%	0.04%	0.07%	0.08%
	40%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.11%
	50%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	60%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.13%	0.16%
	70%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	80%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.17%	0.22%
	90%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.05%	0.07%	0.12%	0.20%	0.25%
	100%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.14%	0.22%	0.27%

Table 3.471 Mean, LCI and UCI **year-round** displacement matrices for **razorbill** apportioned to **Cliffs of Moher SPA** during **operation** of the Project. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality												
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	1	1
	30%	0	0	0	0	0	0	0	0	0	1	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1	2
	50%	0	0	0	0	0	0	0	0	1	1	2	2
	60%	0	0	0	0	0	0	0	0	1	1	2	2
	70%	0	0	0	0	0	0	0	1	1	1	2	3
	80%	0	0	0	0	0	0	0	1	1	2	3	3
	90%	0	0	0	0	0	0	0	1	1	2	3	4
	100%	0	0	0	0	0	0	0	1	1	2	3	4

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	1
	50%	0	0	0	0	0	0	0	0	0	1	1
	60%	0	0	0	0	0	0	0	0	0	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	0	1	1	1
	90%	0	0	0	0	0	0	0	0	1	1	1
	100%	0	0	0	0	0	0	0	0	1	1	2
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	1	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	2	2
	40%	0	0	0	0	0	0	1	1	1	2	3
	50%	0	0	0	0	0	0	1	1	2	3	4
	60%	0	0	0	0	0	0	1	1	2	3	4
	70%	0	0	0	0	0	1	1	2	3	4	5
	80%	0	0	0	0	0	1	1	2	3	5	6
	90%	0	0	0	0	0	1	1	2	3	5	6
	100%	0	0	0	0	0	1	1	2	4	6	7

Table 3.472 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **razorbill** apportioned to **Cliffs of Moher SPA** due to displacement from Morecambe OWF during **operation**. Estimated population based on windfarm site + 2km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	20%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.15%	0.19%
	30%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%
	40%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.19%	0.31%	0.39%
	50%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.10%	0.14%	0.24%	0.39%	0.48%
	60%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.12%	0.17%	0.29%	0.46%	0.58%
	70%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.20%	0.34%	0.54%	0.68%
	80%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.39%	0.62%	0.77%
	90%	0.01%	0.02%	0.03%	0.03%	0.04%	0.09%	0.17%	0.26%	0.43%	0.70%	0.87%
	100%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.19%	0.29%	0.48%	0.77%	0.97%



LCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.04%	0.06%	0.07%
	30%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.09%	0.11%
	40%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	50%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.05%	0.09%	0.14%	0.18%
	60%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.11%	0.17%	0.22%
	70%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	80%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.09%	0.14%	0.23%	0.29%
	90%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.10%	0.16%	0.26%	0.32%
	100%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.29%	0.36%
UCI		Mortality										
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
	10%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.14%	0.17%
	20%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.07%	0.10%	0.17%	0.27%	0.34%
	30%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.41%	0.51%
	40%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.14%	0.20%	0.34%	0.54%	0.68%
	50%	0.01%	0.02%	0.03%	0.03%	0.04%	0.08%	0.17%	0.25%	0.42%	0.68%	0.85%
	60%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.51%	0.81%	1.02%
	70%	0.01%	0.02%	0.04%	0.05%	0.06%	0.12%	0.24%	0.36%	0.59%	0.95%	1.18%
	80%	0.01%	0.03%	0.04%	0.05%	0.07%	0.14%	0.27%	0.41%	0.68%	1.08%	1.35%
	90%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.46%	0.76%	1.22%	1.52%
	100%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.34%	0.51%	0.85%	1.35%	1.69%

Table 3.473 Mean, LCI and UCI displacement matrices for **red-throated diver** apportioned to **Liverpool Bay SPA** during **construction** of the Project in the **autumn migration** season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	1	1
	40%	0	0	0	0	0	0	0	0	0	1	1
	50%	0	0	0	0	0	0	0	0	1	1	1
	60%	0	0	0	0	0	0	0	0	1	1	1
	70%	0	0	0	0	0	0	0	0	1	1	1
	80%	0	0	0	0	0	0	0	1	1	1	2
	90%	0	0	0	0	0	0	0	1	1	2	2
	100%	0	0	0	0	0	0	0	1	1	2	2

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	4
	40%	0	0	0	0	0	0	1	1	2	4	5
	50%	0	0	0	0	0	1	1	2	3	5	6
	60%	0	0	0	0	0	1	1	2	4	6	7
	70%	0	0	0	0	0	1	2	2	4	7	8
	80%	0	0	0	0	0	1	2	3	5	8	9
	90%	0	0	0	0	1	1	2	3	5	8	11
	100%	0	0	0	0	1	1	2	4	6	9	12

Table 3.474 Mean, LCI and UCI displacement matrices showing change in mortality rate for **red-throated diver** apportioned to **Liverpool Bay SPA** due to displacement from Morecambe OWF during **construction** in the **autumn migration** season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.04%	0.05%
	20%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.10%
	30%	0.00%	0.00%	0.00%	0.01%	0.01%	0.02%	0.03%	0.05%	0.08%	0.12%	0.15%
	40%	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.06%	0.10%	0.16%	0.20%
	50%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.05%	0.08%	0.13%	0.20%	0.25%
	60%	0.00%	0.01%	0.01%	0.01%	0.02%	0.03%	0.06%	0.09%	0.15%	0.24%	0.30%
	70%	0.00%	0.01%	0.01%	0.01%	0.02%	0.04%	0.07%	0.11%	0.18%	0.28%	0.35%
	80%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.12%	0.20%	0.32%	0.40%
	90%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.36%	0.45%
	100%	0.01%	0.01%	0.02%	0.02%	0.03%	0.05%	0.10%	0.15%	0.25%	0.40%	0.50%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.22%	0.28%	
	20%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.45%	0.56%	
	30%	0.01%	0.02%	0.03%	0.03%	0.04%	0.08%	0.17%	0.25%	0.42%	0.67%	0.84%	
	40%	0.01%	0.02%	0.03%	0.04%	0.06%	0.11%	0.22%	0.34%	0.56%	0.90%	1.12%	
	50%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.42%	0.70%	1.12%	1.40%	
	60%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.34%	0.50%	0.84%	1.34%	1.68%	
	70%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.39%	0.59%	0.98%	1.57%	1.96%	
	80%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.45%	0.67%	1.12%	1.79%	2.24%	
	90%	0.03%	0.05%	0.08%	0.10%	0.13%	0.25%	0.50%	0.76%	1.26%	2.02%	2.52%	
	100%	0.03%	0.06%	0.08%	0.11%	0.14%	0.28%	0.56%	0.84%	1.40%	2.24%	2.80%	

Table 3.475 Mean, LCI and UCI displacement matrices for **red-throated diver** apportioned to **Liverpool Bay SPA** during **construction** of the Project in the **winter** season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	1
	20%	0	0	0	0	0	0	0	1	1	2	2
	30%	0	0	0	0	0	0	1	1	2	3	3
	40%	0	0	0	0	0	0	1	1	2	4	5
	50%	0	0	0	0	0	1	1	2	3	5	6
	60%	0	0	0	0	0	1	1	2	3	6	7
	70%	0	0	0	0	0	1	2	2	4	6	8
	80%	0	0	0	0	0	1	2	3	5	7	9
	90%	0	0	0	0	1	1	2	3	5	8	10
	100%	0	0	0	0	1	1	2	3	6	9	12

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	1	1	1	2	3
	20%	0	0	0	0	0	1	1	2	3	4	5
	30%	0	0	0	0	0	1	2	2	4	7	8
	40%	0	0	0	0	1	1	2	3	5	9	11
	50%	0	0	0	1	1	1	3	4	7	11	14
	60%	0	0	0	1	1	2	3	5	8	13	16
	70%	0	0	1	1	1	2	4	6	10	15	19
	80%	0	0	1	1	1	2	4	7	11	18	22
	90%	0	0	1	1	1	2	5	7	12	20	25
	100%	0	1	1	1	1	3	5	8	14	22	27

Table 3.476 Mean, LCI and UCI displacement matrices showing change in mortality rate for **red-throated diver** apportioned to **Liverpool Bay SPA** due to displacement from Morecambe OWF during **construction** in the **winter** season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.22%	0.28%
	20%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.44%	0.55%
	30%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.17%	0.25%	0.41%	0.66%	0.83%
	40%	0.01%	0.02%	0.03%	0.04%	0.06%	0.11%	0.22%	0.33%	0.55%	0.88%	1.10%
	50%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.41%	0.69%	1.10%	1.38%
	60%	0.02%	0.03%	0.05%	0.07%	0.08%	0.17%	0.33%	0.50%	0.83%	1.32%	1.65%
	70%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.39%	0.58%	0.96%	1.54%	1.93%
	80%	0.02%	0.04%	0.07%	0.09%	0.11%	0.22%	0.44%	0.66%	1.10%	1.76%	2.20%
	90%	0.02%	0.05%	0.07%	0.10%	0.12%	0.25%	0.50%	0.74%	1.24%	1.98%	2.48%
	100%	0.03%	0.06%	0.08%	0.11%	0.14%	0.28%	0.55%	0.83%	1.38%	2.20%	2.75%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
CI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.01%	0.01%	0.02%	0.03%	0.03%	0.07%	0.13%	0.20%	0.33%	0.52%	0.65%	
	20%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.26%	0.39%	0.65%	1.05%	1.31%	
	30%	0.02%	0.04%	0.06%	0.08%	0.10%	0.20%	0.39%	0.59%	0.98%	1.57%	1.96%	
	40%	0.03%	0.05%	0.08%	0.10%	0.13%	0.26%	0.52%	0.78%	1.31%	2.09%	2.61%	
	50%	0.03%	0.07%	0.10%	0.13%	0.16%	0.33%	0.65%	0.98%	1.63%	2.61%	3.27%	
	60%	0.04%	0.08%	0.12%	0.16%	0.20%	0.39%	0.78%	1.18%	1.96%	3.14%	3.92%	
	70%	0.05%	0.09%	0.14%	0.18%	0.23%	0.46%	0.91%	1.37%	2.29%	3.66%	4.57%	
	80%	0.05%	0.10%	0.16%	0.21%	0.26%	0.52%	1.05%	1.57%	2.61%	4.18%	5.23%	
	90%	0.06%	0.12%	0.18%	0.24%	0.29%	0.59%	1.18%	1.76%	2.94%	4.70%	5.88%	
	100%	0.07%	0.13%	0.20%	0.26%	0.33%	0.65%	1.31%	1.96%	3.27%	5.23%	6.53%	

Table 3.477 Mean, LCI and UCI displacement matrices for **red-throated diver** apportioned to **Liverpool Bay SPA** during **construction** of the Project in the **spring migration** season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	1
	20%	0	0	0	0	0	0	0	0	1	1	1
	30%	0	0	0	0	0	0	0	1	1	1	2
	40%	0	0	0	0	0	0	0	1	1	2	2
	50%	0	0	0	0	0	0	1	1	1	2	3
	60%	0	0	0	0	0	0	1	1	2	3	4
	70%	0	0	0	0	0	0	1	1	2	3	4
	80%	0	0	0	0	0	0	1	1	2	4	5
	90%	0	0	0	0	0	1	1	2	3	4	5
	100%	0	0	0	0	0	1	1	2	3	5	6

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	1	1	2
	20%	0	0	0	0	0	0	1	1	2	3	3
	30%	0	0	0	0	0	0	1	1	2	4	5
	40%	0	0	0	0	0	1	1	2	3	5	6
	50%	0	0	0	0	0	1	2	2	4	6	8
	60%	0	0	0	0	0	1	2	3	5	8	10
	70%	0	0	0	0	1	1	2	3	6	9	11
	80%	0	0	0	1	1	1	3	4	6	10	13
	90%	0	0	0	1	1	1	3	4	7	12	14
	100%	0	0	0	1	1	2	3	5	8	13	16

Table 3.478 Mean, LCI and UCI displacement matrices showing change in mortality rate for **red-throated diver** apportioned to **Liverpool Bay SPA** due to displacement from Morecambe OWF during **construction** in the **spring migration** season. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.03%	0.04%	0.07%	0.11%	0.14%
	20%	0.00%	0.01%	0.01%	0.01%	0.01%	0.03%	0.06%	0.08%	0.14%	0.23%	0.28%
	30%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.13%	0.21%	0.34%	0.42%
	40%	0.01%	0.01%	0.02%	0.02%	0.03%	0.06%	0.11%	0.17%	0.28%	0.45%	0.56%
	50%	0.01%	0.01%	0.02%	0.03%	0.04%	0.07%	0.14%	0.21%	0.35%	0.56%	0.71%
	60%	0.01%	0.02%	0.03%	0.03%	0.04%	0.08%	0.17%	0.25%	0.42%	0.68%	0.85%
	70%	0.01%	0.02%	0.03%	0.04%	0.05%	0.10%	0.20%	0.30%	0.49%	0.79%	0.99%
	80%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.56%	0.90%	1.13%
	90%	0.01%	0.03%	0.04%	0.05%	0.06%	0.13%	0.25%	0.38%	0.64%	1.02%	1.27%
	100%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.42%	0.71%	1.13%	1.41%

LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.01%	0.01%	0.02%	0.02%	0.04%	0.08%	0.11%	0.19%	0.30%	0.38%	
	20%	0.01%	0.02%	0.02%	0.03%	0.04%	0.08%	0.15%	0.23%	0.38%	0.61%	0.76%	
	30%	0.01%	0.02%	0.03%	0.05%	0.06%	0.11%	0.23%	0.34%	0.57%	0.91%	1.14%	
	40%	0.02%	0.03%	0.05%	0.06%	0.08%	0.15%	0.30%	0.46%	0.76%	1.22%	1.52%	
	50%	0.02%	0.04%	0.06%	0.08%	0.10%	0.19%	0.38%	0.57%	0.95%	1.52%	1.90%	
	60%	0.02%	0.05%	0.07%	0.09%	0.11%	0.23%	0.46%	0.69%	1.14%	1.83%	2.29%	
	70%	0.03%	0.05%	0.08%	0.11%	0.13%	0.27%	0.53%	0.80%	1.33%	2.13%	2.67%	
	80%	0.03%	0.06%	0.09%	0.12%	0.15%	0.30%	0.61%	0.91%	1.52%	2.44%	3.05%	
	90%	0.03%	0.07%	0.10%	0.14%	0.17%	0.34%	0.69%	1.03%	1.71%	2.74%	3.43%	
	100%	0.04%	0.08%	0.11%	0.15%	0.19%	0.38%	0.76%	1.14%	1.90%	3.05%	3.81%	

Table 3.479 Mean, LCI and UCI **year-round** displacement matrices for **red-throated diver** apportioned to **Liverpool Bay SPA** during **construction** of the Project. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	1	1	2	2
	20%	0	0	0	0	0	0	1	1	2	3	4
	30%	0	0	0	0	0	1	1	2	3	5	6
	40%	0	0	0	0	0	1	2	2	4	6	8
	50%	0	0	0	0	0	1	2	3	5	8	10
	60%	0	0	0	0	1	1	2	4	6	9	12
	70%	0	0	0	1	1	1	3	4	7	11	14
	80%	0	0	0	1	1	2	3	5	8	13	16
	90%	0	0	1	1	1	2	4	5	9	14	18
	100%	0	0	1	1	1	2	4	6	10	16	20

LCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	0	0	0	0	0	0
	20%	0	0	0	0	0	0	0	0	0	0	0
	30%	0	0	0	0	0	0	0	0	0	0	0
	40%	0	0	0	0	0	0	0	0	0	0	0
	50%	0	0	0	0	0	0	0	0	0	0	0
	60%	0	0	0	0	0	0	0	0	0	0	0
	70%	0	0	0	0	0	0	0	0	0	0	0
	80%	0	0	0	0	0	0	0	0	0	0	0
	90%	0	0	0	0	0	0	0	0	0	0	0
	100%	0	0	0	0	0	0	0	0	0	0	0
UCI		Mortality										
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0	0	0	0	0	1	1	2	3	4	6
	20%	0	0	0	0	1	1	2	3	6	9	11
	30%	0	0	0	1	1	2	3	5	8	13	17
	40%	0	0	1	1	1	2	4	7	11	18	22
	50%	0	1	1	1	1	3	6	8	14	22	28
	60%	0	1	1	1	2	3	7	10	17	26	33
	70%	0	1	1	2	2	4	8	12	19	31	39
	80%	0	1	1	2	2	4	9	13	22	35	44
	90%	0	1	1	2	2	5	10	15	25	40	50
	100%	1	1	2	2	3	6	11	17	28	44	55

Table 3.480 Mean, LCI and UCI **year-round** displacement matrices showing change in mortality rate for **red-throated diver** apportioned to **Liverpool Bay SPA** due to displacement from Morecambe OWF during **construction**. Estimated population based on windfarm site + 4km buffer area. Ranges of displacement and mortality considered by the assessment are shown in grey cells.

Mean	Mortality											
		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%
Displacement	10%	0.00%	0.01%	0.01%	0.02%	0.02%	0.05%	0.09%	0.14%	0.23%	0.37%	0.47%
	20%	0.01%	0.02%	0.03%	0.04%	0.05%	0.09%	0.19%	0.28%	0.47%	0.75%	0.93%
	30%	0.01%	0.03%	0.04%	0.06%	0.07%	0.14%	0.28%	0.42%	0.70%	1.12%	1.40%
	40%	0.02%	0.04%	0.06%	0.07%	0.09%	0.19%	0.37%	0.56%	0.93%	1.49%	1.87%
	50%	0.02%	0.05%	0.07%	0.09%	0.12%	0.23%	0.47%	0.70%	1.17%	1.87%	2.33%
	60%	0.03%	0.06%	0.08%	0.11%	0.14%	0.28%	0.56%	0.84%	1.40%	2.24%	2.80%
	70%	0.03%	0.07%	0.10%	0.13%	0.16%	0.33%	0.65%	0.98%	1.63%	2.61%	3.27%
	80%	0.04%	0.07%	0.11%	0.15%	0.19%	0.37%	0.75%	1.12%	1.87%	2.99%	3.73%
	90%	0.04%	0.08%	0.13%	0.17%	0.21%	0.42%	0.84%	1.26%	2.10%	3.36%	4.20%
	100%	0.05%	0.09%	0.14%	0.19%	0.23%	0.47%	0.93%	1.40%	2.33%	3.73%	4.67%



LCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UCI		Mortality											
Displacement		1%	2%	3%	4%	5%	10%	20%	30%	50%	80%	100%	
	10%	0.01%	0.03%	0.04%	0.05%	0.07%	0.13%	0.26%	0.39%	0.66%	1.05%	1.31%	
	20%	0.03%	0.05%	0.08%	0.11%	0.13%	0.26%	0.53%	0.79%	1.31%	2.10%	2.63%	
	30%	0.04%	0.08%	0.12%	0.16%	0.20%	0.39%	0.79%	1.18%	1.97%	3.15%	3.94%	
	40%	0.05%	0.11%	0.16%	0.21%	0.26%	0.53%	1.05%	1.58%	2.63%	4.21%	5.26%	
	50%	0.07%	0.13%	0.20%	0.26%	0.33%	0.66%	1.31%	1.97%	3.29%	5.26%	6.57%	
	60%	0.08%	0.16%	0.24%	0.32%	0.39%	0.79%	1.58%	2.37%	3.94%	6.31%	7.89%	
	70%	0.09%	0.18%	0.28%	0.37%	0.46%	0.92%	1.84%	2.76%	4.60%	7.36%	9.20%	
	80%	0.11%	0.21%	0.32%	0.42%	0.53%	1.05%	2.10%	3.15%	5.26%	8.41%	10.51%	
	90%	0.12%	0.24%	0.35%	0.47%	0.59%	1.18%	2.37%	3.55%	5.91%	9.46%	11.83%	
	100%	0.13%	0.26%	0.39%	0.53%	0.66%	1.31%	2.63%	3.94%	6.57%	10.51%	13.14%	

### 3.1.7 Apportioning calculations – HRA

92. Annual apportioned estimates for in-combination collision risk and displacement have been calculated from project-specific HRA values, where these were available. For the majority of projects, where no HRA specific values were available, an annual total CRM/population estimate for displacement has been estimated using EIA values agreed between the Mona, Morgan and Morecambe projects, and applying a suitable apportioning rate to the EIA value. In most cases, a proxy apportioning rate from a nearby project has been used. Where seasonal data were unavailable (or unclear), a weighted average apportioning rate was used. Weighting for each season was undertaken based on the proportion of months within the year for each season (as defined by Furness, 2015), and assuming that estimated total annual population estimates were evenly distributed across the year. An example annual apportioning calculation is presented in **Table 3.476**. For the non-breeding seasons, the same apportioning rate applies to all projects (as they are all located within the same BDMPS, as defined by Furness (2015)). The annual apportioning estimates used in the calculations are shown in **Table 3.477**. Apportioned collision risk and population estimates for sites and species considered in the in-combination assessment are presented in **Table 3.478** to **Table 3.510**.

*Table 3.481 Example annual apportioning calculation (razorbill at Lambay Island SPA, using Morecambe Project apportioning values)*

Season	Breeding	Autumn	Winter	Spring	Annual
Apportioning value <sup>1</sup>	24.74%	1.20%	0.70%	1.20%	
Months <sup>2</sup>	Apr-Jul	Aug-Oct	Nov-Dec	Jan-Mar	
Proportion of months <sup>3</sup>	0.33	0.25	0.17	0.25	
Weighted value <sup>4</sup>	8.25%	0.30%	0.12%	0.30%	<b>8.96%</b>

<sup>1</sup> Taken from the in-combination project apportioning, where available, or a suitable proxy project.  
<sup>2</sup> From Furness (2015). Where seasons overlap, breeding season takes priority.  
<sup>3</sup> Number of months in each season as a proportion of the year (or all relevant months in the case of Manx shearwater).  
<sup>4</sup> Product of seasonal apportioning value and proportion of months. The seasonal values are summed to produce the annual weighted mean.

Table 3.482 Apportioning estimates used for in-combination apportioning

SPA	Species	All projects			Morecambe		Mona	Morgan			Awel y Môr		Erebus	White Cross		W of Orkney		
		Autumn	Winter	Spring	Breeding	Annual	Breeding	Breeding	Annual	Annual	Breeding	Annual	Breeding	Annual	Breeding	Annual	Breeding	Annual
<b>Canna and Sanday SPA</b>	Guillemot	N/A	0.70%	N/A	0.00%	0.41%	0.00%	0.41%	0.00%	0.41%	0.00%	0.41%	0.00%	0.41%	0.00%	0.41%	1.12%	4.35%
<b>Cape Wrath SPA</b>	Guillemot	N/A	4.60%	N/A	0.00%	2.68%	0.00%	2.68%	0.00%	2.68%	0.00%	2.68%	0.00%	2.68%	0.00%	2.68%	0.00%	0.00%
<b>Flannan Isles SPA</b>	Guillemot	N/A	1.60%	N/A	0.00%	0.93%	0.00%	0.93%	0.00%	0.93%	0.00%	0.93%	0.00%	0.93%	0.00%	0.93%	0.00%	0.00%
<b>Handa SPA</b>	Guillemot	0.00%	6.30%	N/A	0.00%	3.68%	0.00%	3.68%	0.00%	3.68%	0.00%	3.68%	0.00%	3.68%	0.00%	3.68%	0.00%	0.00%
<b>Mingulay and Berneray SPA</b>	Guillemot	N/A	2.30%	N/A	0.00%	1.34%	0.00%	1.34%	0.00%	1.34%	0.00%	1.34%	0.00%	1.34%	0.00%	1.34%	0.00%	0.00%
<b>North Colonsay and Western Cliffs SPA</b>	Guillemot	0.00%	2.40%	0.00%	0.00%	1.40%	0.00%	1.40%	0.00%	1.40%	0.00%	1.40%	0.00%	1.40%	0.00%	1.40%	0.00%	0.00%
<b>North Rona and Sula Sgeir SPA</b>	Guillemot	N/A	0.80%	N/A	0.00%	0.47%	0.00%	0.47%	0.00%	0.47%	0.00%	0.47%	0.00%	0.47%	0.00%	0.47%	0.00%	0.00%
<b>Rathlin Island SPA</b>	Guillemot	N/A	15.30%	N/A	0.00%	8.93%	0.00%	8.93%	0.00%	8.93%	0.00%	8.93%	0.00%	8.93%	0.00%	8.93%	0.00%	0.00%
<b>Shiant Isles SPA</b>	Guillemot	0.00%	0.90%	0.00%	0.00%	0.53%	0.00%	0.53%	0.00%	0.53%	0.00%	0.53%	0.00%	0.53%	0.00%	0.53%	0.00%	0.00%
<b>Skomer, Skokholm and the Seas off Pembrokeshire SPA</b>	Guillemot	N/A	2.60%	N/A	0.00%	1.52%	0.00%	1.52%	0.00%	1.52%	0.00%	1.52%	75.40%	32.93%	0.00%	1.52%	0.00%	0.00%
<b>St Kilda SPA</b>	Guillemot	N/A	2.60%	N/A	0.00%	1.52%	0.00%	1.52%	0.00%	1.52%	0.00%	1.52%	0.00%	1.52%	0.00%	1.52%	0.00%	0.00%
<b>Sule Skerry and Sule Stack SPA</b>	Guillemot	N/A	1.30%	N/A	0.00%	0.76%	0.00%	0.76%	0.00%	0.76%	0.00%	0.76%	0.00%	0.76%	0.00%	0.76%	0.00%	0.00%
<b>Ailsa Craig SPA</b>	Guillemot	N/A	0.90%	N/A	0.00%	0.53%	0.00%	0.53%	0.00%	0.53%	0.00%	0.53%	0.00%	0.53%	0.00%	0.53%	0.00%	0.00%
<b>Lambay Island SPA (transboundary site)</b>	Guillemot	N/A	6.50%	N/A	0.00%	3.79%	19.00%	11.71%	18.00%	11.29%	14.00%	9.63%	0.00%	3.79%	0.00%	3.79%	0.00%	0.00%
<b>Saltee Islands SPA (transboundary site)</b>	Guillemot	N/A	1.50%	N/A	0.00%	0.88%	0.00%	0.88%	0.00%	0.88%	0.00%	0.88%	4.90%	2.92%	0.00%	0.88%	0.00%	0.00%
<b>Morecambe Bay and Duddon Estuary SPA and Ramsar sites</b>	Lesser black-backed gull	3.05%	4.85%	3.05%	6.76%	5.20%	3.00%	3.63%	5.00%	4.46%	0.00%	2.38%	0.00%	2.38%	0.00%	2.38%	0.00%	0.00%
<b>Ribble and Alt Estuaries SPA and Ramsar</b>	Lesser black-backed gull	5.06%	8.03%	5.06%	43.39%	22.02%	62.00%	29.78%	33.00%	17.69%	0.00%	3.94%	0.00%	3.94%	0.00%	3.94%	0.00%	0.00%
<b>Skomer, Skokholm and the Seas off Pembrokeshire SPA</b>	Lesser black-backed gull	8.26%	9.37%	8.26%	0.00%	5.19%	0.00%	5.19%	0.00%	5.19%	0.00%	5.19%	97.80%	45.94%	0.00%	5.19%	0.00%	0.00%
<b>Blasket Islands SPA (transboundary site)</b>	Manx shearwater	2.47%	N/A	2.47%	0.61%	1.31%	0.00%	0.93%	0.00%	0.93%	0.00%	0.93%	0.10%	0.99%	0.00%	0.93%	0.00%	0.00%
<b>Copeland Islands SPA</b>	Manx shearwater	0.75%	N/A	0.75%	2.22%	1.67%	0.00%	0.28%	0.00%	0.28%	0.50%	0.59%	0.00%	0.28%	0.02%	0.29%	0.00%	0.00%
<b>Cruagh Island SPA (transboundary site)</b>	Manx shearwater	0.42%	N/A	0.42%	0.10%	0.22%	0.00%	0.16%	0.00%	0.16%	0.00%	0.16%	0.00%	0.16%	0.00%	0.16%	0.00%	0.00%
<b>Aberdaron Coast and Bardsey Island SPA</b>	Manx shearwater	2.05%	N/A	2.05%	8.63%	6.16%	0.00%	0.77%	0.00%	0.77%	5.50%	4.21%	0.30%	0.96%	0.28%	0.94%	0.00%	0.00%
<b>Puffin Island SPA (transboundary site)</b>	Manx shearwater	0.80%	N/A	0.80%	0.22%	0.44%	0.00%	0.30%	0.00%	0.30%	0.00%	0.30%	0.00%	0.00%	0.00%	0.30%	0.00%	0.00%
<b>Skelligs SPA (transboundary site)</b>	Manx shearwater	0.11%	N/A	0.11%	0.03%	0.06%	0.00%	0.04%	0.00%	0.04%	0.00%	0.04%	0.00%	0.04%	0.00%	0.04%	0.00%	0.00%

SPA	Species	All projects			Morecambe		Mona	Morgan		Awel y Môr		Erebus		White Cross		W of Orkney		
		Autumn	Winter	Spring	Breeding	Annual	Breeding	Breeding	Annual	Breeding	Annual	Breeding	Annual	Breeding	Annual	Breeding	Annual	
<b>Skomer, Skokholm and the Seas off Pembrokeshire SPA</b>	Manx shearwater	44.28%	N/A	44.28%	76.54%	64.44%	0.00%	16.61%	0.00%	16.61%	44.40%	44.36%	99.50%	78.79%	60.32%	54.31%	0.00%	0.00%
<b>St Kilda SPA</b>	Manx shearwater	0.61%	N/A	0.61%	0.20%	0.35%	0.00%	0.23%	0.00%	0.23%	0.00%	0.23%	0.00%	0.23%	0.00%	0.23%	0.00%	0.00%
<b>Deenish Island and Scariff Island SPA (transboundary site)</b>	Manx shearwater	0.29%	N/A	0.29%	0.08%	0.16%	0.00%	0.11%	0.00%	0.11%	0.00%	0.11%	0.00%	0.00%	0.00%	0.11%	0.00%	0.00%
<b>Rum SPA</b>	Manx shearwater	15.18%	N/A	15.18%	8.44%	10.97%	0.00%	5.69%	0.00%	5.69%	0.00%	5.69%	0.10%	5.76%	0.14%	5.78%	0.00%	0.00%
<b>Ailsa Craig SPA</b>	Gannet	9.90%	N/A	8.20%	73.80%	46.75%	48.00%	31.70%	59.00%	38.12%	46.20%	30.65%	0.00%	3.70%	1.12%	4.35%	0.03%	3.72%
<b>Cape Wrath SPA</b>	Razorbill	0.70%	0.50%	0.70%	0.00%	0.43%	0.00%	0.43%	0.00%	0.43%	0.00%	0.43%	0.00%	0.43%	0.00%	0.43%	0.00%	0.00%
<b>Handa SPA</b>	Razorbill	1.70%	1.20%	1.70%	0.00%	1.05%	0.00%	1.05%	0.00%	1.05%	0.00%	1.05%	0.00%	1.05%	0.00%	1.05%	0.00%	0.00%
<b>Lambay Island SPA (transboundary site)</b>	Razorbill	1.20%	0.70%	1.20%	24.74%	8.96%	4.00%	2.05%	26.00%	9.38%	13.40%	5.18%	0.00%	0.72%	0.00%	0.72%	0.00%	0.00%
<b>Mingulay and Berneray SPA</b>	Razorbill	3.30%	2.40%	3.30%	0.00%	2.05%	0.00%	2.05%	0.00%	2.05%	0.00%	2.05%	0.00%	2.05%	0.00%	2.05%	0.00%	0.00%
<b>Rathlin Island SPA</b>	Razorbill	5.00%	3.60%	5.00%	0%	3.10%	0.00%	3.10%	0.00%	3.10%	0.00%	0.00%	0.00%	3.10%	0.00%	3.10%	0.00%	0.00%
<b>Saltee Islands SPA (transboundary site)</b>	Razorbill	0.80%	0.40%	0.80%	0.00%	0.47%	0.00%	0.47%	0.00%	0.47%	0.00%	0.00%	3.90%	1.77%	0.00%	0.47%	0.00%	0.00%
<b>Shiant Isles SPA</b>	Razorbill	1.40%	1.00%	1.40%	0.00%	0.87%	0.00%	0.87%	0.00%	0.87%	0.00%	0.87%	0.00%	0.87%	0.00%	0.87%	0.00%	0.00%
<b>Skomer, Skokholm and the Seas off Pembrokeshire SPA</b>	Razorbill	1.90%	1.10%	1.90%	0.00%	1.13%	0.00%	1.13%	0.00%	1.13%	0.00%	1.13%	89.20%	30.87%	0.00%	1.13%	0.00%	0.00%

Table 3.483 Lesser black-backed gull in-combination annual CRM values apportioned to Morecambe Bay and Duddon Estuary SPA

Project	EIA value	HRA value	Original AR	Updated AR	Updated annual CR	Apportioning proxy	Apportioning rate	Annual mortality	Qualitative
Burbo Bank Extension	44	N/A	0.98	0.994	2.10	Awel y Môr	2.38%	1.05	N/A
Ormonde	22.1	N/A	0.995	0.994	26.52	Morecambe	5.20%	1.15	N/A
Walney 1 + 2	57.2	N/A	0.995	0.994	68.64	Morecambe	5.20%	2.97	N/A
Walney 3 + 4	<b>29.3</b>	N/A	0.995	0.994	35.16	Morecambe	5.20%	1.52	N/A
West of Duddon Sands	52.4	N/A	0.995	0.994	62.88	Morecambe	5.20%	2.72	N/A
Gwynt y Môr	5	N/A	0.995	0.994	6.00	Awel y Môr	2.38%	0.12	N/A
Rhyl Flats	1	N/A	0.995	0.994	1.20	Awel y Môr	2.38%	0.02	N/A
Robin Rigg	N/A	N/A	0.995	0.994	0.00	Morgan	4.46%	0.00	Low/negligible
Awel y Môr	N/A	0.002	0.995	0.994	0.00	N/A	n/a	0.00	N/A
Erebus	6.73	N/A	0.995	0.994	8.08	Awel y Môr	2.38%	0.16	N/A
Twin Hub	6.8	N/A	0.995	0.994	8.16	White Cross	2.38%	0.16	N/A
Morgan	0.99	N/A	0.994	0.994	0.99	N/A	4.46%	0.04	N/A
Mona	1.89	N/A	0.994	0.994	1.89	N/A	3.63%	0.07	N/A
Burbo Bank	2	N/A	0.995	0.994	2.40	Awel y Môr	2.38%	0.05	N/A
West of Orkney	0	0	0.995	0.994	0.00	N/A		0.00	N/A
White Cross	0.297	N/A	0.995	0.994	0.36	N/A	2.38%	0.01	N/A
<b>Sub-total excluding Morecambe</b>	<b>229.71</b>	N/A	N/A	N/A	<b>224.37</b>	N/A	N/A	<b>10.05</b>	N/A

Project	EIA value	HRA value	Original AR	Updated AR	Updated annual CR	Apportioning proxy	Apportioning rate	Annual mortality	Qualitative
<b>Morecambe EIA (worst case)</b>	<b>3.57</b>	N/A	0.994	0.994	<b>3.57</b>	N/A	N/A	<b>0.19</b>	N/A
<b>Total</b>	<b>233.28</b>	N/A	N/A	N/A	<b>227.94</b>	N/A	N/A	<b>10.24</b>	N/A
<b>Mortality increase*</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<b>8.40%</b>	N/A

\*based on a reference population of 1,060 adults and an adult mortality rate of 0.115, giving a baseline mortality of 121.9

Table 3.484 Lesser black-backed gull in-combination annual CRM values apportioned to Ribble and Alt Estuaries SPA

Project	EIA value	HRA value	Original AR	Updated AR	Updated annual CR	Apportioning proxy	Apportioning rate	Annual mortality	Qualitative
<b>Burbo Bank Extension</b>	44	165	0.98	0.994	49.50	Awel y Môr	3.94%	1.73	N/A
<b>Ormonde</b>	22.1	N/A	0.995	0.994	26.52	Morecambe	22.02%	4.87	N/A
<b>Walney 1 + 2</b>	57.2	N/A	0.995	0.994	68.64	Morecambe	22.02%	12.60	N/A
<b>Walney 3 + 4</b>	29.3	N/A	0.995	0.994	35.16	Morecambe	22.02%	6.45	N/A
<b>West of Duddon Sands</b>	52.4	N/A	0.995	0.994	62.88	Morecambe	22.02%	11.54	N/A
<b>Gwynt y Môr</b>	5	N/A	0.995	0.994	6.00	Awel y Môr	3.94%	0.20	N/A
<b>Rhyl Flats</b>	1	N/A	0.995	0.994	1.20	Awel y Môr	3.94%	0.04	N/A
<b>Robin Rigg</b>	N/A	N/A	0.995	0.994	0.00	Morgan	17.69%	0.00	Low/negligible
<b>Awel y Môr</b>	N/A	0.05	0.995	0.994	0.00	n/a	n/a	0.05	N/A
<b>Erebus</b>	6.73	N/A	0.995	0.994	8.08	Awel y Môr	3.94%	0.27	N/A
<b>Twin Hub</b>	6.8	N/A	0.995	0.994	8.16	White Cross	3.94%	0.27	N/A
<b>Morgan</b>	0.99	N/A	0.994	0.994	0.99	n/a	17.69%	0.18	N/A

Project	EIA value	HRA value	Original AR	Updated AR	Updated annual CR	Apportioning proxy	Apportioning rate	Annual mortality	Qualitative
<b>Mona</b>	1.89	N/A	0.994	0.994	1.89	n/a	29.78%	0.56	N/A
<b>Burbo Bank</b>	2	N/A	0.995	0.994	2.40	Awel y Môr	3.94%	0.08	N/A
<b>West of Orkney</b>	0	0	0.995	0.994	0.00	n/a		0.00	N/A
<b>White Cross</b>	0.297	N/A	0.995	0.994	0.36	n/a	5.19%	0.02	N/A
<b>Sub-total excluding Morecambe</b>	<b>229.707</b>	N/A	N/A	N/A	<b>271.77</b>	N/A	N/A	<b>38.84</b>	N/A
<b>Morecambe EIA (worst case)</b>	<b>3.57</b>	N/A	0.994	0.994	<b>3.57</b>	N/A	N/A	<b>0.96</b>	N/A
<b>Total</b>	<b>233.28</b>	N/A			<b>275.34</b>	N/A	N/A	<b>39.80</b>	N/A
<b>Mortality increase*</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<b>3.85%</b>	N/A

\*based on a reference population of 8,978 adults and an adult mortality rate of 0.115, giving a baseline mortality of 1032.47

Table 3.485 Lesser black-backed gull in-combination annual CRM values apportioned to Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfro SPA

Project	EIA value	HRA value	Original AR	Updated AR	Updated annual CR	Apportioning proxy	Apportioning rate	Annual mortality	Qualitative
<b>Burbo Bank Extension</b>	44	N/A	0.995	0.994	52.80	Awel y Môr	5.19%	2.28	N/A
<b>Ormonde</b>	22.1	N/A	0.995	0.994	26.52	Morecambe	5.19%	1.15	N/A
<b>Walney 1 + 2</b>	57.2	N/A	0.995	0.994	68.64	Morecambe	5.19%	2.97	N/A
<b>Walney 3 + 4</b>	<b>29.3</b>	N/A	0.995	0.994	35.16	Morecambe	5.19%	1.52	N/A
<b>West of Duddon Sands</b>	52.4	N/A	0.995	0.994	62.88	Morecambe	5.19%	2.72	N/A
<b>Gwynt y Môr</b>	5	N/A	0.995	0.994	6.00	Awel y Môr	5.19%	0.26	N/A
<b>Rhyl Flats</b>	1	N/A	0.995	0.994	1.20	Awel y Môr	5.19%	0.05	N/A
<b>Robin Rigg</b>	N/A	N/A	0.995	0.994	0.00	Morgan	5.19%	0.00	Low/negligible
<b>Awel y Môr</b>	N/A	0	0.995	0.994	0.00	N/A	N/A	0.00	N/A
<b>Erebus</b>	6.73	N/A	0.995	0.994	8.08	Awel y Môr	5.19%	0.42	N/A
<b>Twin Hub</b>	6.8	N/A	0.995	0.994	8.16	White Cross	5.19%	0.42	N/A
<b>Morgan</b>	0.99	N/A	0.994	0.994	0.99	N/A	5.19%	0.05	N/A
<b>Mona</b>	1.89	N/A	0.994	0.994	1.89	N/A	5.19%	0.10	N/A
<b>Burbo Bank</b>	2	N/A	0.995	0.994	2.40	Awel y Môr	5.19%	0.12	N/A
<b>West of Orkney</b>	0	0	0.995	0.994	0.00	N/A	N/A	0.00	N/A
<b>White Cross</b>	0.297	0	0.995	0.994	0.36	N/A	5.19%	0.02	N/A
<b>Sub-total excluding Morecambe</b>	<b>229.707</b>	N/A	N/A	N/A	<b>275.07</b>	N/A	N/A	<b>12.08</b>	N/A



Project	EIA value	HRA value	Original AR	Updated AR	Updated annual CR	Apportioning proxy	Apportioning rate	Annual mortality	Qualitative
<b>Morecambe EIA (worst case)</b>	<b>3.57</b>	<b>0.13</b>	0.994	0.994	<b>3.57</b>	N/A	N/A	<b>0.13</b>	N/A
<b>Total</b>	<b>233.28</b>	N/A	N/A	N/A	<b>278.64</b>	N/A	N/A	<b>12.21</b>	N/A
<b>Mortality increase*</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<b>0.64%</b>	N/A

\*Based on a reference population of 16,694 adults and an adult mortality rate of 0.115, giving a baseline mortality rate of 1919.81

*Table 3.486 Gannet in-combination annual CRM values apportioned to Ailsa Craig SPA*

Project	EIA value	HRA value	Original AR	Original MA correction	Updated AR	Updated MA correction	Updated annual CR	Updated annual CR – no MA	Apportioning Proxy	Apportioning rate	Annual mortality	Annual mortality – no MA
<b>Burbo Bank Extension</b>	18.7	N/A	0.989	1	0.993	0.3	3.57	11.90	Awel y Môr	30.65%	1.09	3.65
<b>Ormonde</b>	10.48	N/A	0.989	1	0.993	0.3	2.00	6.67	Morecambe	46.75%	0.94	3.12
<b>Walney 1 + 2</b>	N/A	N/A	0.989	1	0.993	0.3	0.00	0.00	Morecambe	46.75%	0.00	0.00
<b>Walney 3 + 4</b>	51.6	N/A	0.989	1	0.993	0.3	9.85	32.84	Morecambe	46.75%	4.61	15.35
<b>West of Duddon Sands</b>	N/A	N/A	0.989	1	0.993	0.3	0.00	0.00	Morecambe	46.75%	0.00	0.00
<b>Gwynt y Môr</b>	N/A	N/A	0.989	1	0.993	0.3	0.00	0.00	Awel y Môr	30.65%	0.00	0.00

Project	EIA value	HRA value	Original AR	Original MA correction	Updated AR	Updated MA correction	Updated annual CR	Updated annual CR – no MA	Apportioning Proxy	Apportioning rate	Annual mortality	Annual mortality – no MA
<b>Rhyl Flats</b>	N/A	N/A	0.989	1	0.993	0.3	0.00	0.00	Awel y Môr	30.65%	0.00	0.00
<b>Robin Rigg</b>	N/A	N/A	0.989	1	0.993	0.3	0.00	0.00	Morgan	38.12%	0.00	0.00
<b>Awel y Môr</b>	20.49	6.1	0.989	1	0.993	0.3	3.91	13.04	N/A	N/A	1.83	6.10
<b>Erebus</b>	7.01	N/A	0.989	1	0.993	0.3	1.34	4.46	Awel y Môr	30.65%	0.41	1.37
<b>Twin Hub</b>	39.9	N/A	0.989	1	0.993	0.3	7.62	25.39	White Cross	4.35%	0.33	1.11
<b>Morgan</b>	2.15	N/A	0.993	0.3	0.993	0.3	2.15	7.17	N/A	38.12%	0.82	2.73
<b>Mona</b>	2.47	N/A	0.993	0.3	0.993	0.3	2.47	8.23	N/A	31.70%	0.78	2.61
<b>Burbo Bank</b>	N/A	N/A	0.989	1	0.993	0.3	0.00	0.00	Awel y Môr	30.65%	0.00	0.00
<b>West of Orkney</b>	47.47	N/A	0.993	1	0.993	0.3	14.24	47.47	N/A	3.72%	0.53	1.76
<b>White Cross</b>	6.116	0.3	0.98	1	0.993	0.3	0.64	2.14	N/A	N/A	0.09	0.30
<b>Sub-total excluding Morecambe</b>	206.39	N/A	N/A	N/A	N/A	N/A	47.79	159.31	N/A	N/A	11.43	38.10
<b>Morecambe EIA (worst case)</b>	1.26	N/A	0.993	0.3	0.993	0.3	1.26	4.20	N/A	N/A	0.84	2.80

Project	EIA value	HRA value	Original AR	Original MA correction	Updated AR	Updated MA correction	Updated annual CR	Updated annual CR – no MA	Apportioning Proxy	Apportioning rate	Annual mortality	Annual mortality – no MA
<b>Total</b>	207.65	N/A	N/A	N/A	N/A	N/A	49.05	163.51	N/A	N/A	12.27	40.90
<b>Mortality increase*</b>	N/A	N/A	N/A	N/A	N/A	N/A	0.91%	3.04%	N/A	N/A	0.23%	0.76%

\*Based on a reference population of 66,452 adults and an adult mortality rate of 0.081, giving a baseline mortality rate of 5382.61

Table 3.487 Guillemot in-combination annual population for displacement assessment apportioned to Ailsa Craig SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	2,562	Awel y Môr	0.53%	13	N/A	13
<b>Ormonde</b>	912	Morgan	0.53%	5	N/A	5
<b>Walney 1&amp;2</b>	1,321	Morgan	0.53%	7	N/A	7
<b>Walney 3&amp;4</b>	6,096	Morgan	0.53%	32	N/A	32
<b>West of Duddon Sands</b>	1,321	Morgan	0.53%	7	N/A	7
<b>Robin Rigg</b>	138	Morgan	0.53%	1	N/A	1
<b>Awel y Môr</b>	4,488	N/A	N/A	N/A	0	0
<b>Erebus</b>	35,339	Erebus	0.53%	186	N/A	186
<b>Twin Hub</b>	256	White Cross	0.53%	1	N/A	1
<b>White Cross</b>	4,363	N/A	N/A	N/A	11	11
<b>West of Orkney</b>	9,136	N/A	N/A	N/A	0	0
<b>Mona</b>	11,912	Mona	0.53%	63	N/A	63
<b>Morgan</b>	8,994	Morgan	0.53%	47	N/A	47
<b>Morecambe</b>	14,689	N/A	N/A	N/A	75	75
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>447</b>

Table 3.488 Guillemot in-combination annual population for displacement assessment apportioned to Rathlin Island SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	2,562	Awel y Môr	8.93%	229	N/A	229
<b>Ormonde</b>	912	Morgan	8.93%	81	N/A	81
<b>Walney 1&amp;2</b>	1,321	Morgan	8.93%	118	N/A	118
<b>Walney 3&amp;4</b>	6,096	Morgan	8.93%	544	N/A	544
<b>West of Duddon Sands</b>	1,321	Morgan	8.93%	118	N/A	118
<b>Robin Rigg</b>	138	Morgan	8.93%	12	N/A	12
<b>Awel y Môr</b>	4,488	N/A	N/A	N/A	0	0
<b>Erebus</b>	35,339	Erebus	8.93%	3,154	N/A	3,154
<b>Twin Hub</b>	256	White Cross	8.93%	23	N/A	23
<b>White Cross</b>	4,363	N/A	N/A	N/A	162	162
<b>West of Orkney</b>	9,136	N/A	N/A	N/A	0	0
<b>Mona</b>	11,912	Mona	8.93%	1,063	N/A	1,063
<b>Morgan</b>	8,994	Morgan	8.93%	803	N/A	803
<b>Morecambe</b>	14,689	N/A	N/A	N/A	1,272	1,272
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>7,579</b>

Table 3.489 Guillemot in-combination annual population for displacement assessment apportioned to North Colonsay and Western Cliffs SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	2,562	Awel y Môr	1.40%	36	N/A	36
<b>Ormonde</b>	912	Morgan	1.40%	13	N/A	13
<b>Walney 1&amp;2</b>	1,321	Morgan	1.40%	18	N/A	18
<b>Walney 3&amp;4</b>	6,096	Morgan	1.40%	85	N/A	85
<b>West of Duddon Sands</b>	1,321	Morgan	1.40%	18	N/A	18
<b>Robin Rigg</b>	138	Morgan	1.40%	2	N/A	2
<b>Awel y Môr</b>	4,488	N/A	N/A	N/A	0	0
<b>Erebus</b>	35,339	Erebus	1.40%	495	N/A	495
<b>Twin Hub</b>	256	White Cross	1.40%	4	N/A	4
<b>White Cross</b>	4,363	N/A	N/A	N/A	26	26
<b>West of Orkney</b>	9,136	N/A	N/A	N/A	0	0
<b>Mona</b>	11,912	Mona	1.40%	167	N/A	167
<b>Morgan</b>	8,994	Morgan	1.40%	126	N/A	126
<b>Morecambe</b>	14,689	N/A	N/A	N/A	200	200
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>1,190</b>

Table 3.490 Guillemot in-combination annual population for displacement assessment apportioned to Canna and Sanday SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	2,562	Awel y Môr	0.41%	10	N/A	10
<b>Ormonde</b>	912	Morgan	0.41%	4	N/A	4
<b>Walney 1&amp;2</b>	1,321	Morgan	0.41%	5	N/A	5
<b>Walney 3&amp;4</b>	6,096	Morgan	0.41%	25	N/A	25
<b>West of Duddon Sands</b>	1,321	Morgan	0.41%	5	N/A	5
<b>Robin Rigg</b>	138	Morgan	0.41%	1	N/A	1
<b>Awel y Môr</b>	4,488	N/A	N/A	N/A	0	0
<b>Erebus</b>	35,339	Erebus	0.41%	144	N/A	144
<b>Twin Hub</b>	256	White Cross	0.41%	1	N/A	1
<b>White Cross</b>	4,363	N/A	N/A	N/A	7	7
<b>West of Orkney</b>	9,136	N/A	N/A	N/A	0	0
<b>Mona</b>	11,912	Mona	0.41%	49	N/A	49
<b>Morgan</b>	8,994	Morgan	0.41%	37	N/A	37
<b>Morecambe</b>	14,689	N/A	N/A	N/A	58	58
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>346</b>

Table 3.491 Guillemot in-combination annual population for displacement assessment apportioned to Mingulay and Berneray SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	2,562	Awel y Môr	1.34%	34	N/A	34
<b>Ormonde</b>	912	Morgan	1.34%	12	N/A	12
<b>Walney 1&amp;2</b>	1,321	Morgan	1.34%	18	N/A	18
<b>Walney 3&amp;4</b>	6,096	Morgan	1.34%	82	N/A	82
<b>West of Duddon Sands</b>	1,321	Morgan	1.34%	18	N/A	18
<b>Robin Rigg</b>	138	Morgan	1.34%	2	N/A	2
<b>Awel y Môr</b>	4,488	N/A	N/A	N/A	0	0
<b>Erebus</b>	35,339	Erebus	1.34%	474	N/A	474
<b>Twin Hub</b>	256	White Cross	1.34%	3	N/A	3
<b>White Cross</b>	4,363	N/A	N/A	N/A	24	24
<b>West of Orkney</b>	9,136	N/A	N/A	N/A	0	0
<b>Mona</b>	11,912	Mona	1.34%	160	N/A	160
<b>Morgan</b>	8,994	Morgan	1.34%	121	N/A	121
<b>Morecambe</b>	14,689	N/A	N/A	N/A	191	191
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>1,139</b>



Table 3.492 Guillemot in-combination annual population for displacement assessment apportioned to Shiant Isles SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	2,562	Awel y Môr	0.53%	13	N/A	13
<b>Ormonde</b>	912	Morgan	0.53%	5	N/A	5
<b>Walney 1&amp;2</b>	1,321	Morgan	0.53%	7	N/A	7
<b>Walney 3&amp;4</b>	6,096	Morgan	0.53%	32	N/A	32
<b>West of Duddon Sands</b>	1,321	Morgan	0.53%	7	N/A	7
<b>Robin Rigg</b>	138	Morgan	0.53%	1	N/A	1
<b>Awel y Môr</b>	4,488	N/A	N/A	N/A	0	0
<b>Erebus</b>	35,339	Erebus	0.53%	186	N/A	186
<b>Twin Hub</b>	256	White Cross	0.53%	1	N/A	1
<b>White Cross</b>	4,363	N/A	N/A	N/A	9	9
<b>West of Orkney</b>	9,136	N/A	N/A	N/A	0	0
<b>Mona</b>	11,912	Mona	0.53%	63	N/A	63
<b>Morgan</b>	8,994	Morgan	0.53%	47	N/A	47
<b>Morecambe</b>	14,689	N/A	N/A	N/A	75	75
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>445</b>

Table 3.493 Guillemot in-combination annual population for displacement assessment apportioned to Handa SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	2,562	Awel y Môr	3.68%	94	N/A	94
<b>Ormonde</b>	912	Morgan	3.68%	34	N/A	34
<b>Walney 1&amp;2</b>	1,321	Morgan	3.68%	49	N/A	49
<b>Walney 3&amp;4</b>	6,096	Morgan	3.68%	224	N/A	224
<b>West of Duddon Sands</b>	1,321	Morgan	3.68%	49	N/A	49
<b>Robin Rigg</b>	138	Morgan	3.68%	5	N/A	5
<b>Awel y Môr</b>	4,488	N/A	N/A	N/A	0	0
<b>Erebus</b>	35,339	Erebus	3.68%	1,299	N/A	1,299
<b>Twin Hub</b>	256	White Cross	3.68%	9	N/A	9
<b>White Cross</b>	4,363	N/A	N/A	N/A	67	67
<b>West of Orkney</b>	9,136	N/A	N/A	N/A	2	2
<b>Mona</b>	11,912	Mona	3.68%	438	N/A	438
<b>Morgan</b>	8,994	Morgan	3.68%	331	N/A	331
<b>Morecambe</b>	14,689	N/A	N/A	N/A	524	524
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>3,123</b>

Table 3.494 Guillemot in-combination annual population for displacement assessment apportioned to St Kilda SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	2,562	Awel y Môr	1.52%	39	N/A	39
<b>Ormonde</b>	912	Morgan	1.52%	14	N/A	14
<b>Walney 1&amp;2</b>	1,321	Morgan	1.52%	20	N/A	20
<b>Walney 3&amp;4</b>	6,096	Morgan	1.52%	92	N/A	92
<b>West of Duddon Sands</b>	1,321	Morgan	1.52%	20	N/A	20
<b>Robin Rigg</b>	138	Morgan	1.52%	2	N/A	2
<b>Awel y Môr</b>	4,488	N/A	N/A	N/A	0	0
<b>Erebus</b>	35,339	Erebus	1.52%	536	N/A	536
<b>Twin Hub</b>	256	White Cross	1.52%	4	N/A	4
<b>White Cross</b>	4,363	N/A	N/A	N/A	27	27
<b>West of Orkney</b>	9,136	N/A	N/A	N/A	0	0
<b>Mona</b>	11,912	Mona	1.52%	181	N/A	181
<b>Morgan</b>	8,994	Morgan	1.52%	136	N/A	136
<b>Morecambe</b>	14,689	N/A	N/A	N/A	216	216
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>1,287</b>

Table 3.495 Guillemot in-combination annual population for displacement assessment apportioned to Cape Wrath SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	2,562	Awel y Môr	2.68%	69	N/A	69
<b>Ormonde</b>	912	Morgan	2.68%	24	N/A	24
<b>Walney 1&amp;2</b>	1,321	Morgan	2.68%	35	N/A	35
<b>Walney 3&amp;4</b>	6,096	Morgan	2.68%	164	N/A	164
<b>West of Duddon Sands</b>	1,321	Morgan	2.68%	35	N/A	35
<b>Robin Rigg</b>	138	Morgan	2.68%	4	N/A	4
<b>Awel y Môr</b>	4,488	N/A	N/A	N/A	0	0
<b>Erebus</b>	35,339	Erebus	2.68%	948	N/A	948
<b>Twin Hub</b>	256	White Cross	2.68%	7	N/A	7
<b>White Cross</b>	4,363	N/A	N/A	N/A	49	49
<b>West of Orkney</b>	9,136	N/A	N/A	N/A	4	4
<b>Mona</b>	11,912	Mona	2.68%	320	N/A	320
<b>Morgan</b>	8,994	Morgan	2.68%	241	N/A	241
<b>Morecambe</b>	14,689	N/A	N/A	N/A	382	382
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>2,282</b>

Table 3.496 Guillemot in-combination annual population for displacement assessment apportioned to Flannan Isles SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	2,562	Awel y Môr	0.93%	24	N/A	24
<b>Ormonde</b>	912	Morgan	0.93%	9	N/A	9
<b>Walney 1&amp;2</b>	1,321	Morgan	0.93%	12	N/A	12
<b>Walney 3&amp;4</b>	6,096	Morgan	0.93%	57	N/A	57
<b>West of Duddon Sands</b>	1,321	Morgan	0.93%	12	N/A	12
<b>Robin Rigg</b>	138	Morgan	0.93%	1	N/A	1
<b>Awel y Môr</b>	4,488	N/A	N/A	N/A	0	0
<b>Erebus</b>	35,339	Erebus	0.93%	330	N/A	330
<b>Twin Hub</b>	256	White Cross	0.93%	2	N/A	2
<b>White Cross</b>	4,363	N/A	N/A	N/A	17	17
<b>West of Orkney</b>	9,136	N/A	N/A	N/A	0	0
<b>Mona</b>	11,912	Mona	0.93%	111	N/A	111
<b>Morgan</b>	8,994	Morgan	0.93%	84	N/A	84
<b>Morecambe</b>	14,689	N/A	N/A	N/A	133	133
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>793</b>

Table 3.497 Guillemot in-combination annual population for displacement assessment apportioned to Sule Skerry and Sule Stack SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	2,562	Awel y Môr	0.76%	19	N/A	19
<b>Ormonde</b>	912	Morgan	0.76%	7	N/A	7
<b>Walney 1&amp;2</b>	1,321	Morgan	0.76%	10	N/A	10
<b>Walney 3&amp;4</b>	6,096	Morgan	0.76%	46	N/A	46
<b>West of Duddon Sands</b>	1,321	Morgan	0.76%	10	N/A	10
<b>Robin Rigg</b>	138	Morgan	0.76%	1	N/A	1
<b>Awel y Môr</b>	4,488	N/A	N/A	N/A	0	0
<b>Erebus</b>	35,339	Erebus	0.76%	268	N/A	268
<b>Twin Hub</b>	256	White Cross	0.76%	2	N/A	2
<b>White Cross</b>	4,363	N/A	N/A	N/A	13	13
<b>West of Orkney</b>	9,136	N/A	N/A	N/A	134	134
<b>Mona</b>	11,912	Mona	0.76%	90	N/A	90
<b>Morgan</b>	8,994	Morgan	0.76%	68	N/A	68
<b>Morecambe</b>	14,689	N/A	N/A	N/A	108	108
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>777</b>

Table 3.498 Guillemot in-combination annual population for displacement assessment apportioned to North Rona and Sula Sgeir SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	2,562	Awel y Môr	0.47%	12	N/A	12
<b>Ormonde</b>	912	Morgan	0.47%	4	N/A	4
<b>Walney 1&amp;2</b>	1,321	Morgan	0.47%	6	N/A	6
<b>Walney 3&amp;4</b>	6,096	Morgan	0.47%	28	N/A	28
<b>West of Duddon Sands</b>	1,321	Morgan	0.47%	6	N/A	6
<b>Robin Rigg</b>	138	Morgan	0.47%	1	N/A	1
<b>Awel y Môr</b>	4,488	N/A	N/A	N/A	0	0
<b>Erebus</b>	35,339	Erebus	0.47%	165	N/A	165
<b>Twin Hub</b>	256	White Cross	0.47%	1	N/A	1
<b>White Cross</b>	4,363	N/A	N/A	N/A	9	9
<b>West of Orkney</b>	9,136	N/A	N/A	N/A	0	0
<b>Mona</b>	11,912	Mona	0.47%	56	N/A	56
<b>Morgan</b>	8,994	Morgan	0.47%	42	N/A	42
<b>Morecambe</b>	14,689	N/A	N/A	N/A	67	67
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>397</b>

Table 3.499 Guillemot in-combination annual population for displacement assessment apportioned to Lambay Island SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	2,562	Awel y Môr	9.63%	247	N/A	247
<b>Ormonde</b>	912	Morgan	11.29%	103	N/A	103
<b>Walney 1&amp;2</b>	1,321	Morgan	11.29%	149	N/A	149
<b>Walney 3&amp;4</b>	6,096	Morgan	11.29%	688	N/A	688
<b>West of Duddon Sands</b>	1,321	Morgan	11.29%	149	N/A	149
<b>Robin Rigg</b>	138	Morgan	11.29%	16	N/A	16
<b>Awel y Môr</b>	4,488	N/A	N/A	N/A	125.20	125
<b>Erebus</b>	35,339	Erebus	3.79%	1,340	N/A	1,340
<b>Twin Hub</b>	256	White Cross	3.79%	10	N/A	10
<b>White Cross</b>	4,363	White Cross	3.79%	165	N/A	165
<b>West of Orkney</b>	9,136	N/A	N/A	N/A	0	0
<b>Mona</b>	11,912	Mona	11.71%	1,395	639	639
<b>Morgan</b>	8,994	Morgan	11.29%	1,016	452	452
<b>Morecambe</b>	14,689	N/A	N/A	N/A	540	540
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>4,623</b>



Table 3.500 Guillemot in-combination annual population for displacement assessment apportioned to Saltee Islands SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	2,562	Awel y Môr	0.88%	22	N/A	22
<b>Ormonde</b>	912	Morgan	0.88%	8	N/A	8
<b>Walney 1&amp;2</b>	1,321	Morgan	0.88%	12	N/A	12
<b>Walney 3&amp;4</b>	6,096	Morgan	0.88%	53	N/A	53
<b>West of Duddon Sands</b>	1,321	Morgan	0.88%	12	N/A	12
<b>Robin Rigg</b>	138	Morgan	0.88%	1	N/A	1
<b>Awel y Môr</b>	4,488	N/A	N/A	N/A	0	0
<b>Erebus</b>	35,339	Erebus	2.92%	1,031	N/A	1,031
<b>Twin Hub</b>	256	White Cross	0.88%	2	N/A	2
<b>White Cross</b>	4,363	White Cross	0.88%	38	N/A	38
<b>West of Orkney</b>	9,136	N/A	N/A	N/A	0	0
<b>Mona</b>	11,912	Mona	0.88%	104	N/A	104
<b>Morgan</b>	8,994	Morgan	0.88%	79	N/A	79
<b>Morecambe</b>	14,689	N/A	N/A	N/A	125	125
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>1,487</b>

Table 3.501 Guillemot in-combination annual population for displacement assessment apportioned to Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfro SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	2,562	Awel y Môr	1.52%	39	N/A	39
<b>Ormonde</b>	912	Morgan	1.52%	14	N/A	14
<b>Walney 1&amp;2</b>	1,321	Morgan	1.52%	20	N/A	20
<b>Walney 3&amp;4</b>	6,096	Morgan	1.52%	92	N/A	92
<b>West of Duddon Sands</b>	1,321	Morgan	1.52%	20	N/A	20
<b>Robin Rigg</b>	138	Morgan	1.52%	2	N/A	2
<b>Awel y Môr</b>	4,488	N/A	N/A	N/A	76	76
<b>Erebus</b>	35,339	Erebus	N/A	N/A	3,414	3,414
<b>Twin Hub</b>	256	White Cross	1.52%	4	N/A	4
<b>White Cross</b>	4,363	White Cross	1.52%	66	N/A	66
<b>West of Orkney</b>	9,136	N/A	N/A	N/A	0	0
<b>Mona</b>	11,912	Mona	1.52%	181	N/A	181
<b>Morgan</b>	8,994	Morgan	1.52%	136	N/A	136
<b>Morecambe</b>	14,689	N/A	N/A	N/A	216	216
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>4,280</b>

Table 3.502 Razorbill in-combination annual population for displacement assessment apportioned to Rathlin Island SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	93	Awel y Môr	3.10%	3	N/A	3
<b>Ormonde</b>	174	Morgan	3.10%	5	N/A	5
<b>Walney 3&amp;4</b>	4,016	Morgan	3.10%	124	N/A	124
<b>West of Duddon Sands</b>	202	Morgan	3.10%	6	N/A	6
<b>Robin Rigg</b>	63	Morgan	3.10%	2	N/A	2
<b>Awel y Môr</b>	692	N/A	N/A	N/A	0	0
<b>Erebus</b>	3,867	Erebus	3.10%	120	N/A	120
<b>Twin Hub</b>	65	White Cross	3.10%	2	N/A	2
<b>White Cross</b>	786	N/A	N/A	N/A	31	31
<b>West of Orkney</b>	326	N/A	N/A	N/A	14	14
<b>Mona</b>	2,883	Mona	3.10%	89	N/A	89
<b>Morgan</b>	622	Morgan	3.10%	19	N/A	19
<b>Morecambe</b>	1,979	N/A	N/A	N/A	77	77
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>494</b>

Table 3.503 Razorbill in-combination annual population for displacement assessment apportioned to Mingulay and Berneray SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	93	Awel y Môr	2.05%	2	N/A	2
<b>Ormonde</b>	174	Morgan	2.05%	4	N/A	4
<b>Walney 3&amp;4</b>	4,016	Morgan	2.05%	82	N/A	82
<b>West of Duddon Sands</b>	202	Morgan	2.05%	4	N/A	4
<b>Robin Rigg</b>	63	Morgan	2.05%	1	N/A	1
<b>Awel y Môr</b>	692	N/A	N/A	N/A	0	0
<b>Erebus</b>	3,867	Erebus	2.05%	79	N/A	79
<b>Twin Hub</b>	65	White Cross	2.05%	1	N/A	1
<b>White Cross</b>	786	N/A	N/A	N/A	21	21
<b>West of Orkney</b>	326	N/A	N/A	N/A	9	9
<b>Mona</b>	2,883	Mona	2.05%	59	N/A	59
<b>Morgan</b>	622	Morgan	2.05%	13	N/A	13
<b>Morecambe</b>	1,979	N/A	N/A	N/A	52	52
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>328</b>

Table 3.504 Razorbill in-combination annual population for displacement assessment apportioned to Shiant Isles SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	93	Awel y Môr	0.87%	1	N/A	1
<b>Ormonde</b>	174	Morgan	0.87%	2	N/A	2
<b>Walney 3&amp;4</b>	4,016	Morgan	0.87%	35	N/A	35
<b>West of Duddon Sands</b>	202	Morgan	0.87%	2	N/A	2
<b>Robin Rigg</b>	63	Morgan	0.87%	1	N/A	1
<b>Awel y Môr</b>	692	N/A	N/A	N/A	0	0
<b>Erebus</b>	3,867	Erebus	0.87%	34	N/A	34
<b>Twin Hub</b>	65	White Cross	0.87%	1	N/A	1
<b>White Cross</b>	786	N/A	N/A	N/A	8	8
<b>West of Orkney</b>	326	N/A	N/A	N/A	0	6
<b>Mona</b>	2,883	Mona	0.87%	25	N/A	25
<b>Morgan</b>	622	Morgan	0.87%	5	N/A	5
<b>Morecambe</b>	1,979	N/A	N/A	N/A	22	22
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>140</b>

Table 3.505 Razorbill in-combination annual population for displacement assessment apportioned to Handa SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	93	Awel y Môr	1.05%	1	N/A	1
<b>Ormonde</b>	174	Morgan	1.05%	2	N/A	2
<b>Walney 3&amp;4</b>	4,016	Morgan	1.05%	42	N/A	42
<b>West of Duddon Sands</b>	202	Morgan	1.05%	2	N/A	2
<b>Robin Rigg</b>	63	Morgan	1.05%	1	N/A	1
<b>Awel y Môr</b>	692	N/A	N/A	N/A	0	0
<b>Erebus</b>	3,867	Erebus	1.05%	41	N/A	41
<b>Twin Hub</b>	65	White Cross	1.05%	1	N/A	1
<b>White Cross</b>	786	N/A	N/A	N/A	11	11
<b>West of Orkney</b>	326	N/A	N/A	N/A	19	19
<b>Mona</b>	2,883	Mona	1.05%	30	N/A	30
<b>Morgan</b>	622	Morgan	1.05%	7	N/A	7
<b>Morecambe</b>	1,979	N/A	N/A	N/A	26	26
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>181</b>

Table 3.506 Razorbill in-combination annual population for displacement assessment apportioned to Cape Wrath SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	93	Awel y Môr	0.43%	0	N/A	0
<b>Ormonde</b>	174	Morgan	0.43%	1	N/A	1
<b>Walney 3&amp;4</b>	4,016	Morgan	0.43%	17	N/A	17
<b>West of Duddon Sands</b>	202	Morgan	0.43%	1	N/A	1
<b>Robin Rigg</b>	63	Morgan	0.43%	0	N/A	0
<b>Awel y Môr</b>	692	N/A	N/A	N/A	0	0
<b>Erebus</b>	3,867	Erebus	0.43%	17	N/A	17
<b>Twin Hub</b>	65	White Cross	0.43%	0	N/A	0
<b>White Cross</b>	786	N/A	N/A	N/A	4	4
<b>West of Orkney</b>	326	N/A	N/A	N/A	1	23
<b>Mona</b>	2,883	Mona	0.43%	12	N/A	12
<b>Morgan</b>	622	Morgan	0.43%	3	N/A	3
<b>Morecambe</b>	1,979	N/A	N/A	N/A	11	11
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>90</b>

Table 3.507 Razorbill in-combination annual population for displacement assessment apportioned to Lambay Island SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	93	Awel y Môr	5.18%	5	N/A	5
<b>Ormonde</b>	174	Morgan	9.38%	16	N/A	16
<b>Walney 3&amp;4</b>	4,016	Morgan	9.38%	377	N/A	377
<b>West of Duddon Sands</b>	202	Morgan	9.38%	19	N/A	19
<b>Robin Rigg</b>	63	Morgan	9.38%	6	N/A	6
<b>Awel y Môr</b>	692	N/A	N/A	N/A	11	11
<b>Erebus</b>	3,867	Erebus	0.72%	28	N/A	28
<b>Twin Hub</b>	65	White Cross	0.72%	0	N/A	0
<b>White Cross</b>	786	White Cross	0.72%	6	N/A	0
<b>West of Orkney</b>	326	N/A	N/A	N/A	0	0
<b>Mona</b>	2,883	Mona	2.05%	59	N/A	59
<b>Morgan</b>	622	Morgan	9.38%	58	N/A	58
<b>Morecambe</b>	1,979	N/A	N/A	N/A	80	80
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>660</b>



Table 3.508 Razorbill in-combination annual population for displacement assessment apportioned to Saltee Islands SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	93	Awel y Môr	0.47%	0	N/A	0
<b>Ormonde</b>	174	Morgan	0.47%	1	N/A	1
<b>Walney 3&amp;4</b>	4,016	Morgan	0.47%	19	N/A	19
<b>West of Duddon Sands</b>	202	Morgan	0.47%	1	N/A	1
<b>Robin Rigg</b>	63	Morgan	0.47%	0	N/A	0
<b>Awel y Môr</b>	692	N/A	N/A	N/A	0	0
<b>Erebus</b>	3,867	Erebus	1.77%	68	N/A	68
<b>Twin Hub</b>	65	White Cross	0.47%	0	N/A	0
<b>White Cross</b>	786	White Cross	0.47%	4	N/A	0
<b>West of Orkney</b>	326	N/A	N/A	N/A	0	0
<b>Mona</b>	2,883	Mona	0.47%	13	N/A	13
<b>Morgan</b>	622	Morgan	0.47%	3	N/A	3
<b>Morecambe</b>	1,979	N/A	N/A	N/A	12	12
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>118</b>

Table 3.509 Razorbill in-combination annual population for displacement assessment apportioned to Skomer, Skokholm and the Seas off Pembrokeshire SPA/Sgomer, Sgogwm a Moroedd Penfro SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	93	Awel y Môr	1.13%	1	N/A	1
<b>Ormonde</b>	174	Morgan	1.13%	2	N/A	2
<b>Walney 3&amp;4</b>	4,016	Morgan	1.13%	46	N/A	46
<b>West of Duddon Sands</b>	202	Morgan	1.13%	2	N/A	2
<b>Robin Rigg</b>	63	Morgan	1.13%	1	N/A	1
<b>Awel y Môr</b>	692	N/A	N/A	N/A	9	9
<b>Erebus</b>	3,867	Erebus	30.87%	1,194	468	468
<b>Twin Hub</b>	65	White Cross	1.13%	1	N/A	1
<b>White Cross</b>	786	White Cross	1.13%	9	N/A	0
<b>West of Orkney</b>	326	N/A	N/A	N/A	5	5
<b>Mona</b>	2,883	Mona	1.13%	33	N/A	33
<b>Morgan</b>	622	Morgan	1.13%	7	N/A	7
<b>Morecambe</b>	1,979	N/A	N/A	N/A	28	28
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>602</b>

Table 3.510 Manx shearwater in-combination annual population for displacement assessment apportioned to Aberdaron Coast & Bardsey Island  
SPA/Glannau Aberdaron ac Ynys Elli

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	443	Awel y Môr	4.21%	19	N/A	19
<b>Ormonde</b>	1,001	Morecambe	6.16%	62	N/A	62
<b>Walney 1&amp;2</b>	0	Morecambe	6.16%	0	N/A	n/a
<b>Walney 3&amp;4</b>	912	Morecambe	6.16%	56	N/A	56
<b>West of Duddon Sands</b>	544	Morecambe	6.16%	34	N/A	34
<b>Robin Rigg</b>	0	N/A	N/A	N/A	N/A	n/a
<b>Awel y Môr</b>	417	N/A	N/A	N/A	9.43	9
<b>Erebus</b>	2,115	Erebus	0.96%	20	N/A	20
<b>Twin Hub</b>	1,274	White Cross	0.94%	12	N/A	12
<b>White Cross</b>	12,181	N/A	N/A	N/A	35.50	36
<b>West of Orkney</b>	10	N/A	N/A	N/A	0.00	0
<b>Mona</b>	2,232	Mona	0.77%	17	0	0
<b>Morgan</b>	993	Morgan	0.77%	8	0	0
<b>Morecambe</b>	8,972	N/A	N/A	N/A	493	493
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>740</b>

Table 3.511 Manx shearwater in-combination annual population for displacement assessment apportioned to Copeland Islands SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	443	Awel y Môr	0.59%	3	N/A	3
<b>Ormonde</b>	1,001	Morecambe	1.67%	17	N/A	17
<b>Walney 1&amp;2</b>	0	Morecambe	1.67%	0	N/A	n/a
<b>Walney 3&amp;4</b>	912	Morecambe	1.67%	15	N/A	15
<b>West of Duddon Sands</b>	544	Morecambe	1.67%	9	N/A	9
<b>Robin Rigg</b>	0	N/A	N/A	N/A	N/A	n/a
<b>Awel y Môr</b>	417	N/A	N/A	N/A	3.07	3
<b>Erebus</b>	2,115	Erebus	0.28%	6	N/A	6
<b>Twin Hub</b>	1,274	White Cross	0.29%	4	N/A	4
<b>White Cross</b>	12,181	N/A	N/A	N/A	2.10	2
<b>West of Orkney</b>	10	N/A	N/A	N/A	0.00	0
<b>Mona</b>	2,232	Mona	0.28%	6	0	0
<b>Morgan</b>	993	Morgan	0.28%	3	0	0
<b>Morecambe</b>	8,972	N/A	N/A	N/A	136	136
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>194</b>

Table 3.512 Manx shearwater in-combination annual population for displacement assessment apportioned to Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfro SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	443	Awel y Môr	44.36%	196	N/A	196
<b>Ormonde</b>	1,001	Morecambe	64.44%	645	N/A	645
<b>Walney 1&amp;2</b>	0	Morecambe	64.44%		N/A	n/a
<b>Walney 3&amp;4</b>	912	Morecambe	64.44%	588	N/A	588
<b>West of Duddon Sands</b>	544	Morecambe	64.44%	351	N/A	351
<b>Robin Rigg</b>	0	N/A	N/A	N/A	N/A	n/a
<b>Awel y Môr</b>	417	N/A	N/A	N/A	184.68	185
<b>Erebus</b>	2,115	Erebus	78.79%	1,666	N/A	1,666
<b>Twin Hub</b>	1,274	White Cross	54.31%	692	N/A	692
<b>White Cross</b>	12,181	N/A	N/A	N/A	7,338	7,338
<b>West of Orkney</b>	10	N/A	N/A	N/A	0	0
<b>Mona</b>	2,232	Mona	N/A	N/A	0	0
<b>Morgan</b>	993	Morgan	N/A	N/A	0	0
<b>Morecambe</b>	8,972	N/A	N/A	N/A	5,491	5,491
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>17,152</b>

Table 3.513 Manx shearwater in-combination annual population for displacement assessment apportioned to Rum SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	443	Awel y Môr	5.69%	25	N/A	25
<b>Ormonde</b>	1,001	Morecambe	10.97%	110	N/A	110
<b>Walney 1&amp;2</b>	0	Morecambe	10.97%	0	N/A	n/a
<b>Walney 3&amp;4</b>	912	Morecambe	10.97%	100	N/A	100
<b>West of Duddon Sands</b>	544	Morecambe	10.97%	60	N/A	60
<b>Robin Rigg</b>	0	N/A	N/A	N/A	N/A	n/a
<b>Awel y Môr</b>	417	N/A	N/A	N/A	0	0
<b>Erebus</b>	2,115	Erebus	5.76%	122	N/A	122
<b>Twin Hub</b>	1,274	White Cross	5.78%	74	N/A	74
<b>White Cross</b>	12,181	N/A	N/A	N/A	25.70	26
<b>West of Orkney</b>	10	N/A	N/A	N/A	0.00	0
<b>Mona PEIR</b>	2,232	Mona	N/A	0	0	0
<b>Morgan PEIR</b>	993	Morgan	N/A	0	0	0
<b>Morecambe ES</b>	8,972	N/A	N/A	N/A	1,045	1,045
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>1,561</b>

Table 3.514 Manx shearwater in-combination annual population for displacement assessment apportioned to St Kilda SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	443	Awel y Môr	0.23%	1	N/A	1
<b>Ormonde</b>	1,001	Morecambe	0.35%	4	N/A	4
<b>Walney 1&amp;2</b>	0	Morecambe	0.35%		N/A	n/a
<b>Walney 3&amp;4</b>	912	Morecambe	0.35%	3	N/A	3
<b>West of Duddon Sands</b>	544	Morecambe	0.35%	2	N/A	2
<b>Robin Rigg</b>	0	N/A	N/A	N/A	N/A	n/a
<b>Awel y Môr</b>	417	N/A	N/A	N/A	0	0
<b>Erebus</b>	2,115	Erebus	0.23%	5	N/A	5
<b>Twin Hub</b>	1,274	White Cross	0.23%	3	N/A	3
<b>White Cross</b>	12,181	N/A	N/A	N/A	0.60	1
<b>West of Orkney</b>	10	N/A	N/A	N/A	0.00	0
<b>Mona</b>	2,232	Mona	N/A	N/A	0	0
<b>Morgan</b>	993	Morgan	N/A	N/A	0	0
<b>Morecambe</b>	8,972	N/A	N/A	N/A	35	35
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>53</b>

Table 3.515 Gannet in-combination annual population for displacement assessment apportioned to Ailsa Craig SPA

Project	EIA value	Apportioning proxy	Apportioning rate	Apportioned population from EIA	Population from HRA	Population for assessment
<b>Burbo Bank Extension</b>	695	Awel y Môr	30.65%	213	N/A	213
<b>Ormonde</b>	199	Morgan	38.12%	76	N/A	76
<b>Walney 3&amp;4</b>	433	Morgan	38.12%	165	N/A	165
<b>West of Duddon Sands</b>	431	Morgan	38.12%	164	N/A	164
<b>Awel y Môr</b>	528	Awel y Mor	30.65%	162	N/A	162
<b>Erebus</b>	658	Erebus	3.70%	24	N/A	24
<b>Twin Hub</b>	397	White Cross	4.35%	17	N/A	17
<b>White Cross</b>	456	N/A	N/A	N/A	22.90	23
<b>West of Orkney</b>	2,188	West of Orkney	3.72%	81	200.06	200
<b>Mona</b>	693	Mona	31.70%	220	N/A	220
<b>Morgan</b>	454	Morgan	38.12%	173	N/A	173
<b>Morecambe</b>	673	N/A	N/A	N/A	412	412
<b>Total</b>	N/A	N/A	N/A	N/A	N/A	<b>1,849</b>



### 3.1.8 Population Viability Analysis results – EIA

93. The outputs from the great black-backed gull PVA predict a decrease of 0.32% in the CPGR for the largest seasonal population of the South-West and English Channel BDMPS. The CPS metric shows a 10.78% decrease in population size relative to the unimpacted population size by the end of the 35-year model run (**Table 3.511**). The cumulative calculations excluding the Morecambe Offshore Windfarm impacts have also been included for comparison.

*Table 3.516 Great black-backed gull PVA results*

Scenario	Predicted mortality	Growth rate	Mean CPGR	Mean CPS	Reduction in growth rate	Reduction in population size
<b>Baseline (unimpacted)</b>	0	1.0265	1.0000	1.0000	N/A	N/A
<b>Cumulative collision mortality (Including Morecambe OWF)</b>	117.09	1.0233	0.9968	0.8922	0.32%	10.78%
<b>Cumulative collision mortality (Excluding Morecambe OWF)</b>	115.34	1.0233	0.9969	0.8936	0.31%	10.64%

### 3.1.9 Population Viability Analysis results – HRA

94. The outputs from the lesser black-backed gull PVA for the Morecambe and Duddon Estuary SPA predict a decrease of 1.1% in the CPGR. The CPS metric shows a 35.8% decrease in population size relative to the unimpacted population size by the end of the 35-year model (**Table 3.512**). The in-combination calculations excluding the Morecambe Offshore Windfarm impacts have also been included for comparison.

*Table 3.517 PVA outputs for lesser black-backed gulls at Morecambe and Duddon Estuary SPA*

Scenario	Predicted mortality	Growth rate	Median CPGR	Median CPS	Reduction in growth rate	Reduction in population size
<b>Baseline (unimpacted)</b>	0	1.0080	1.0000	1.0000	n/a	n/a
<b>In combination collision mortality (Including Morecambe OWF)</b>	10.24	0.9968	0.9890	0.6422	1.1%	35.8%
<b>In combination collision mortality (Excluding Morecambe OWF)</b>	10.05	0.9971	0.9892	0.6477	1.1%	35.2%

95. The outputs from the lesser black-backed gull PVA for the Ribble and Alt Estuary SPA predict a decrease of 0.51% in the CPGR. The CPS metric shows a 18.3% decrease in population size relative to the unimpacted population size by the end of the 35-year model (**Table 3.513**). The in-combination calculations excluding the Morecambe Offshore Windfarm impacts have also been included for comparison.

Table 3.518 PVA outputs for lesser black-backed gulls at Ribble and Alt Estuary SPA

Scenario	Predicted mortality	Growth rate	Median CPGR	Median CPS	Reduction in growth rate	Reduction in population size
<b>Baseline (unimpacted)</b>	0	1.0080	1.0000	1.0000	n/a	n/a
<b>In combination collision mortality (Including Morecambe OWF)</b>	39.8	1.0029	0.9949	0.8168	0.51%	18.3%
<b>In combination collision mortality (Excluding Morecambe OWF)</b>	38.8	1.0030	0.9951	0.8210	0.49%	17.9%

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## 5 Annex 1: Monthly seabird density and abundance

### 5.1 Arctic skua

Table 5.1 Arctic skua design-based density and abundance estimates of birds **in flight and on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.2 Arctic skua design-based density and abundance estimates of birds *in flight at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0



Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

Table 5.3 Arctic skua design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.4 Arctic skua design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.5 Arctic skua design-based density and abundance estimates of birds *in flight* at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.6 Arctic skua design-based density and abundance estimates of birds **on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.7 Arctic skua design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0	0	0	0	0	0	0
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0.01	0	0.04	4	0	12	98.15
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

Table 5.8 Arctic skua design-based density and abundance estimates of birds *in flight at the windfarm site + 4km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0.01	0	0.04	4	0	12	95.75
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.9 Arctic skua design-based density and abundance estimates of birds **on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0



## 5.2 Arctic tern

Table 5.10 Arctic tern design-based density and abundance estimates of birds **in flight and on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0.06	0.00	0.15	6	0	13	67.74
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	1.02	0.34	1.95	89	30	170	40.65
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.11 Arctic tern design-based density and abundance estimates of birds *in flight at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0.06	0	0.15	6	0	13	69.62
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	1.02	0.35	1.93	89	31	168	40.38
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.12 Arctic tern design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.13 Arctic tern design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0.03	0	0.07	6	0	14	68.61
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0.64	0.28	1.09	112	49	190	34.03
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

Table 5.14 Arctic tern design-based density and abundance estimates of birds *in flight at the windfarm site + 2km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0.03	0	0.08	6	0	14	71.46
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0.65	0.26	1.12	113	45	195	34.11
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.15 Arctic tern design-based density and abundance estimates of birds **on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.16 Arctic tern design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0.04	0	0.12	13	0	36	90.82
Sep-21	0.03	0	0.06	9	0	18	53.15
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0.44	0.2	0.7	127	57	200	29.23
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.17 Arctic tern design-based density and abundance estimates of birds *in flight at the windfarm site + 4km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0.04	0	0.12	13	0	36	93
Sep-21	0.03	0	0.06	8	0	18	53.48
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0.44	0.19	0.73	127	54	208	30.97
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0



Table 5.18 Arctic tern design-based density and abundance estimates of birds **on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

### 5.3 Black-headed gull

Table 5.19 Black-headed gull design-based density and abundance estimates of birds *in flight and on sea at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0.05	0	0.14	5	0	12	87.86
Mar-22	0.05	0	0.14	5	0	12	90.04
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.20 Black-headed gull design-based density and abundance estimates of birds **in flight** at the windfarm site (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0.05	0	0.13	5	0	12	87.22
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.21 Black-headed gull design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0.05	0	0.14	4	0	12	95.89
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.22 Black-headed gull design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0.02	0	0.07	4	0	12	95.74
Mar-22	0.02	0	0.07	4	0	12	98.37
Apr-22	0.02	0	0.07	4	0	12	94.35
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0.02	0	0.07	5	0	12	93.46
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.23 Black-headed gull design-based density and abundance estimates of birds **in flight** at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0.02	0	0.07	5	0	12	93.86
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0.02	0	0.07	5	0	12	91.54
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.24 Black-headed gull design-based density and abundance estimates of birds **on sea at the windfarm site + 2km buffer** (LCI = lower 95% confidence interval, UCI = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0.02	0	0.09	5	0	15	95
Apr-22	0.02	0	0.07	5	0	12	89.93
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.25 Black-headed gull design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0.01	0	0.04	4	0	12	95.88
Mar-22	0.01	0	0.04	4	0	12	95.17
Apr-22	0.01	0	0.04	5	0	12	92.21
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0.01	0	0.04	4	0	12	98.24
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0



*Table 5.26 Black-headed gull design-based density and abundance estimates of birds **in flight** at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0.01	0	0.04	4	0	12	95.18
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0.01	0	0.04	4	0	12	95.53
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.27 Black-headed gull design-based density and abundance estimates of birds **on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0.01	0	0.04	5	0	12	91.74
<b>Apr-22</b>	0.01	0	0.04	4	0	12	93.62
<b>May-22</b>	0	0	0	0	0	0	0
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

## 5.4 Common gull

Table 5.28 Common gull design-based density and abundance estimates of birds **in flight and on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.05	0	0.14	5	0	12	89.79
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0.09	0	0.27	9	0	24	91.6
Dec-21	0.13	0	0.27	12	0	24	50.99
Jan-22	0.23	0.04	0.42	20	4	37	42.12
Feb-22	0.04	0	0.14	4	0	12	100.05
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	1	0	1	57.64
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0.05	0	0.13	4	0	12	89.58
Nov-22	0.18	0.04	0.36	16	4	32	48.67
Dec-22	0.64	0.27	1.07	56	24	93	32.17
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0.1	0	0.28	9	0	25	89.26

Table 5.29 Common gull design-based density and abundance estimates of birds **in flight at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.04	0	0.14	4	0	12	94.56
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0.09	0	0.27	8	0	24	92.6
<b>Dec-21</b>	0.14	0.04	0.27	12	4	24	49.02
<b>Jan-22</b>	0.23	0.04	0.42	20	4	37	41.28
<b>Feb-22</b>	0.05	0	0.14	5	0	12	97.19
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0	0	0	0	0	0	0
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0.05	0	0.14	5	0	12	90.72
<b>Nov-22</b>	0.18	0.04	0.38	16	4	34	50.58
<b>Dec-22</b>	0.64	0.3	1.11	56	26	97	32.62
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0.09	0	0.27	9	0	24	88.55

Table 5.30 Common gull design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	1	0	1	88.72
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	1	0	1	61.62
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0.01	0	0.01	1	0	2	60.4

**Table 5.31 Common gull design-based density and abundance estimates of birds *in flight and on sea at the windfarm site + 2km* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.19	0.05	0.39	34	8	68	46.52
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0.02	0	0.07	4	0	12	91.67
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0.04	0	0.12	8	0	21	89.11
<b>Oct-21</b>	0.02	0	0.07	5	0	13	89.88
<b>Nov-21</b>	0.09	0	0.21	17	0	37	54.15
<b>Dec-21</b>	0.21	0.05	0.41	37	8	71	43.96
<b>Jan-22</b>	0.28	0.14	0.42	48	24	73	26.77
<b>Feb-22</b>	0.16	0.04	0.33	28	8	57	43.72
<b>Mar-22</b>	0.02	0	0.07	5	0	12	92.21
<b>Apr-22</b>	0.02	0	0.07	4	0	12	96.02
<b>May-22</b>	0	0	0	1	0	1	61.91
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0.05	0	0.14	9	0	24	94.81
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0.02	0	0.07	5	0	12	89.77
<b>Nov-22</b>	0.12	0.02	0.23	21	4	40	44.86
<b>Dec-22</b>	0.62	0.42	0.83	109	74	145	17.23
<b>Feb-23 (1)</b>	0.07	0	0.18	13	0	32	70.37
<b>Feb-23 (2)</b>	0.1	0	0.2	17	1	36	53.72

Table 5.32 Common gull design-based density and abundance estimates of birds **in flight at the windfarm site + 2km** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.19	0.02	0.39	33	4	68	48.77
Apr-21	0	0	0	0	0	0	0
May-21	0.02	0	0.07	4	0	12	92.37
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0.04	0	0.12	7	0	21	94.45
Oct-21	0.02	0	0.07	4	0	12	96.25
Nov-21	0.09	0	0.2	17	0	36	52.02
Dec-21	0.21	0.04	0.43	37	8	75	46.22
Jan-22	0.25	0.12	0.39	45	21	69	28.38
Feb-22	0.09	0.02	0.18	17	4	32	43.27
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0.02	0	0.07	5	0	12	92.16
Nov-22	0.12	0.02	0.22	21	4	39	45.15
Dec-22	0.58	0.4	0.79	102	70	137	16.85
Feb-23 (1)	0.07	0	0.17	13	0	31	68.67
Feb-23 (2)	0.07	0	0.17	12	0	30	67.02

Table 5.33 Common gull design-based density and abundance estimates of birds **on sea at the windfarm site + 2km** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0.01	1	0	3	86.94
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0.01	1	0	2	96.2
Jan-22	0.02	0	0.07	5	0	12	93.65
Feb-22	0.07	0	0.18	12	0	32	74.52
Mar-22	0.02	0	0.07	4	0	12	99.26
Apr-22	0.02	0	0.07	4	0	12	94.3
May-22	0	0	0	1	0	1	64.04
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0.04	0	0.14	8	0	24	92
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0.05	0	0.11	8	0	20	63.88
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0.03	0	0.07	5	0	13	81.29



**Table 5.34 Common gull design-based density and abundance estimates of birds *in flight and on sea at the windfarm site + 4km* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.2	0.04	0.38	57	12	109	43.71
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0.01	0	0.05	5	0	16	94.97
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0.02	0	0.07	7	0	21	96.98
<b>Oct-21</b>	0.06	0	0.12	16	0	35	52.91
<b>Nov-21</b>	0.06	0	0.12	17	0	36	54.24
<b>Dec-21</b>	0.2	0.07	0.35	57	20	100	36.52
<b>Jan-22</b>	0.24	0.13	0.38	70	36	109	26.44
<b>Feb-22</b>	0.13	0.05	0.22	37	16	63	34.11
<b>Mar-22</b>	0.01	0	0.04	4	0	12	93.27
<b>Apr-22</b>	0.01	0	0.04	4	0	12	99.61
<b>May-22</b>	0	0	0	1	0	1	66.7
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0.03	0	0.08	9	0	24	94.64
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0.03	0	0.07	8	0	20	64.55
<b>Nov-22</b>	0.22	0.09	0.38	64	27	108	33.04
<b>Dec-22</b>	0.46	0.33	0.6	132	93	171	15.6
<b>Feb-23 (1)</b>	0.06	0	0.12	16	0	36	55.51
<b>Feb-23 (2)</b>	0.1	0.03	0.2	30	9	58	43.26

Table 5.35 Common gull design-based density and abundance estimates of birds **in flight at the windfarm site + 4km** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.18	0.04	0.36	53	12	103	44.41
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0.01	0	0.04	4	0	12	91.52
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0.02	0	0.07	8	0	21	93.63
<b>Oct-21</b>	0.06	0	0.13	17	0	36	55.49
<b>Nov-21</b>	0.06	0	0.12	16	0	36	56.05
<b>Dec-21</b>	0.19	0.07	0.34	56	20	98	35.74
<b>Jan-22</b>	0.22	0.11	0.35	64	31	99	27.72
<b>Feb-22</b>	0.09	0.03	0.15	25	8	43	38.03
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0	0	0	0	0	0	0
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0.03	0	0.07	8	0	20	63.55
<b>Nov-22</b>	0.23	0.09	0.37	65	28	107	31.69
<b>Dec-22</b>	0.44	0.31	0.58	126	89	166	15.14
<b>Feb-23 (1)</b>	0.04	0	0.11	12	0	31	71.82
<b>Feb-23 (2)</b>	0.05	0	0.14	16	0	40	72.93

Table 5.36 Common gull design-based density and abundance estimates of birds **on sea at the windfarm site + 4km** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.02	0	0.05	6	0	14	76.12
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	1	0	2	93.71
<b>Jan-22</b>	0.02	0	0.05	5	0	14	85.79
<b>Feb-22</b>	0.04	0	0.11	13	0	32	66.93
<b>Mar-22</b>	0.01	0	0.04	4	0	12	95.84
<b>Apr-22</b>	0.01	0	0.04	5	0	12	95.13
<b>May-22</b>	0	0	0	1	0	1	65.4
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0.03	0	0.08	8	0	24	95.09
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	1	0	1	98.04
<b>Dec-22</b>	0.03	0	0.07	8	0	20	63.2
<b>Feb-23 (1)</b>	0.01	0	0.04	4	0	12	95.24
<b>Feb-23 (2)</b>	0.04	0	0.09	13	2	25	48.16

## 5.5 Common scoter

Table 5.37 Common scoter design-based density and abundance estimates of birds **in flight and on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0.32	0	0.94	28	0	82	94.65
Feb-23 (1)	0.05	0	0.14	5	0	12	88.23
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.38 Common scoter design-based density and abundance estimates of birds *in flight at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.39 Common scoter design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0.33	0	0.94	29	0	82	88.58
Feb-23 (1)	0.05	0	0.14	5	0	12	86.85
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.40 Common scoter design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0.16	0	0.48	28	0	83	93.25
Feb-23 (1)	0.02	0	0.07	5	0	12	96.64
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.41 Common scoter design-based density and abundance estimates of birds **in flight at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0	0	0	0	0	0	0
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0



*Table 5.42 Common scoter design-based density and abundance estimates of birds **on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0.15	0	0.47	27	0	83	93.77
Feb-23 (1)	0.02	0	0.07	5	0	12	91.73
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.43 Common scoter design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0.12	0	0.38	36	0	108	103.31
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0.01	0	0.04	5	0	12	94.48
<b>Apr-22</b>	0.01	0	0.04	5	0	12	94.99
<b>May-22</b>	0	0	0	0	0	0	0
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0.18	0	0.46	51	0	133	69.11
<b>Feb-23 (1)</b>	0.03	0	0.07	9	0	20	66.85
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

*Table 5.44 Common scoter design-based density and abundance estimates of birds **in flight at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0.01	0	0.04	4	0	12	100.9
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0	0	0	0	0	0	0
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0.01	0	0.04	4	0	12	101.03
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

*Table 5.45 Common scoter design-based density and abundance estimates of birds **on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0.12	0	0.37	34	0	107	101.9
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.01	0	0.04	4	0	12	95.77
<b>May-22</b>	0	0	0	0	0	0	0
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0.17	0	0.43	49	0	124	67.46
<b>Feb-23 (1)</b>	0.03	0	0.07	9	0	20	62.53
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

## 5.6 Common tern

Table 5.46 Common tern design-based density and abundance estimates of birds **in flight and on sea at the windfarm site** (LCI = lower 95% confidence interval, UCI = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0.27	0.00	0.57	24	0	50	54.71
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0.1	0.01	0.28	10	1	25	79.56
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.47 Common tern design-based density and abundance estimates of birds *in flight at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0.26	0	0.56	23	0	49	55.95
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0.1	0.01	0.28	10	1	25	81.16
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.48 Common tern design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

**Table 5.49 Common tern design-based density and abundance estimates of birds *in flight and on sea at the windfarm site + 2km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0.13	0	0.29	24	0	51	55.81
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0.08	0.01	0.18	14	2	33	60.34
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0.02	0	0.07	5	0	12	97.59
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0



*Table 5.50 Common tern design-based density and abundance estimates of birds **in flight** at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0.13	0	0.31	23	0	54	59.78
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0.08	0.01	0.19	14	2	34	63.29
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0.02	0	0.09	5	0	16	101.4
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

Table 5.51 Common tern design-based density and abundance estimates of birds **on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.52 Common tern design-based density and abundance estimates of birds in flight and on sea at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0.03	0	0.08	8	0	24	98.92
Sep-21	0.09	0.01	0.2	27	5	57	51.4
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0.05	0	0.11	14	2	32	60.31
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0.01	0	0.04	4	0	12	100.29
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.53 Common tern design-based density and abundance estimates of birds **in flight** at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0.03	0	0.08	8	0	24	97.06
<b>Sep-21</b>	0.1	0.01	0.2	29	5	59	50.11
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0.05	0	0.11	14	2	33	62.21
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0.01	0	0.04	5	0	12	95.5
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

Table 5.54 Common tern design-based density and abundance estimates of birds **on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

## 5.7 Cormorant

Table 5.55 Cormorant design-based density and abundance estimates of birds **in flight and on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.56 Cormorant design-based density and abundance estimates of birds *in flight at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.57 Cormorant design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0



*Table 5.58 Cormorant design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.59 Cormorant design-based density and abundance estimates of birds **in flight at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.60 Cormorant design-based density and abundance estimates of birds **on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21							0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.61 Cormorant design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0.01	0	0.04	5	0	13	100.19
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.62 Cormorant design-based density and abundance estimates of birds **in flight at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.63 Cormorant design-based density and abundance estimates of birds **on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0.01	0	0.04	4	0	12	98.72
Feb-23 (2)	0	0	0	0	0	0	0

## 5.8 Fulmar

Table 5.64 Fulmar design-based density and abundance estimates of birds **in flight and on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.05	0	0.14	5	0	12	89.83
Apr-21	0.05	0	0.14	5	0	12	90.6
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0.08	0	0.19	8	0	17	61.41
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0.51	0.13	1.01	45	12	88	44.83
Jun-22	0	0	0	0	0	0	0
Jul-22	0.05	0	0.14	4	0	12	92.89
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.65 Fulmar design-based density and abundance estimates of birds *in flight at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0



Table 5.66 Fulmar design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.05	0	0.13	4	0	12	89.2
<b>Apr-21</b>	0.05	0	0.14	5	0	12	89.54
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0.08	0	0.2	8	0	18	61.07
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0.52	0.13	1.01	45	12	88	43.51
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0.05	0	0.17	4	0	15	97.84
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

**Table 5.67 Fulmar design-based density and abundance estimates of birds *in flight and on sea* at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.02	0	0.07	5	0	12	96.74
<b>Apr-21</b>	0.02	0	0.07	5	0	12	92.82
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0.13	0.02	0.28	24	4	49	49.28
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.02	0	0.07	4	0	12	97.02
<b>May-22</b>	0.55	0.13	1.25	96	23	218	57.87
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0.07	0	0.14	12	0	24	52.2
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0.02	0	0.07	5	0	12	94.52
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

Table 5.68 Fulmar design-based density and abundance estimates of birds *in flight at the windfarm site + 2km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0.02	0	0.07	5	0	12	93.83
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.69 Fulmar design-based density and abundance estimates of birds **on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.02	0	0.07	5	0	12	91.66
Apr-21	0.02	0	0.07	5	0	12	94.92
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0.13	0.02	0.28	23	4	49	52.04
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0.02	0	0.07	4	0	12	98.39
May-22	0.56	0.13	1.34	98	23	232	56.93
Jun-22	0	0	0	0	0	0	0
Jul-22	0.05	0	0.11	9	0	20	65.38
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0.02	0	0.07	4	0	12	97.93
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

**Table 5.70 Fulmar design-based density and abundance estimates of birds *in flight and on sea* at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.03	0	0.07	9	0	20	63.08
<b>Apr-21</b>	0.01	0	0.04	4	0	12	95.8
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0.11	0.04	0.2	31	12	57	39.16
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.03	0	0.08	8	0	24	96.85
<b>May-22</b>	0.34	0.08	0.74	97	23	210	54.88
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0.04	0	0.09	12	0	27	52.51
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0.04	0	0.08	12	0	24	51.03
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

Table 5.71 Fulmar design-based density and abundance estimates of birds *in flight at the windfarm site + 4km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0.01	0	0.04	4	0	12	97.08
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.72 Fulmar design-based density and abundance estimates of birds **on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.03	0	0.07	8	0	20	63.4
Apr-21	0.01	0	0.04	4	0	12	96.85
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0.11	0.04	0.2	32	12	59	40.49
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0.03	0	0.08	9	0	24	95.52
May-22	0.35	0.09	0.79	100	27	226	54.18
Jun-22	0	0	0	0	0	0	0
Jul-22	0.03	0	0.07	8	0	20	63.22
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0.04	0	0.08	12	0	25	53.97
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

## 5.9 Gannet

Table 5.73 Gannet design-based density and abundance estimates of birds *in flight and on sea at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0.35	0.05	0.75	31	4	66	51.22
Jun-21	0.04	0	0.13	4	0	12	91.41
Jul-21	0.87	0.5	1.28	76	44	112	22.89
Aug-21	4.91	3.68	6.34	427	320	551	13.55
Sep-21	0.32	0.07	0.64	28	7	56	48.95
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0.09	0	0.22	8	0	19	61.16
May-22	3.71	1.14	7.28	322	99	633	43.8
Jun-22	0.28	0.09	0.49	24	8	43	37
Jul-22	0.33	0.09	0.64	29	8	56	42.96
Aug-22	0.41	0.18	0.64	36	16	56	30.21
Sep-22	0.05	0	0.14	4	0	12	94.37
Oct-22	0.04	0	0.13	4	0	12	89.97
Nov-22	0.04	0	0.13	4	0	12	95.66
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0



Table 5.74 Gannet design-based density and abundance estimates of birds *in flight at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	2.02	1.08	3.16	176	95	275	26.61
Sep-21	0.25	0	0.58	22	0	51	60.88
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0.09	0	0.22	8	0	19	63.16
May-22	0.29	0.08	0.51	25	8	45	39.15
Jun-22	0.04	0	0.13	4	0	12	92.45
Jul-22	0.18	0	0.44	16	0	39	63.45
Aug-22	0.09	0	0.22	8	0	19	61.38
Sep-22	0.05	0	0.14	4	0	12	95.91
Oct-22	0	0	0	0	0	0	0
Nov-22	0.05	0	0.14	5	0	12	85.13
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.75 Gannet design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0.37	0.08	0.79	33	8	69	50.38
<b>Jun-21</b>	0.04	0	0.13	4	0	12	93.97
<b>Jul-21</b>	0.83	0.51	1.16	72	44	101	20.59
<b>Aug-21</b>	2.82	2.27	3.33	245	198	290	9.78
<b>Sep-21</b>	0.08	0	0.25	8	0	22	96.84
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	3.41	1.06	7.02	297	92	610	45.12
<b>Jun-22</b>	0.22	0.04	0.44	20	4	39	44.47
<b>Jul-22</b>	0.14	0.04	0.28	13	4	24	47.66
<b>Aug-22</b>	0.27	0.08	0.51	24	8	45	40.96
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0.04	0	0.13	4	0	12	91.33
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

*Table 5.76 Gannet design-based density and abundance estimates of birds **in flight and on sea** at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.05	0	0.11	9	0	20	63.95
<b>Apr-21</b>	0.02	0	0.07	4	0	12	94.53
<b>May-21</b>	0.35	0.14	0.59	60	24	102	33.45
<b>Jun-21</b>	0.02	0	0.07	5	0	12	92.67
<b>Jul-21</b>	0.97	0.62	1.34	169	109	234	18.75
<b>Aug-21</b>	3.6	2.83	4.45	625	493	773	11.6
<b>Sep-21</b>	0.72	0.34	1.18	126	59	206	30.56
<b>Oct-21</b>	0.02	0	0.07	4	0	12	96.72
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.14	0	0.36	24	0	64	79.53
<b>May-22</b>	2.64	0.69	4.9	458	120	851	41.86
<b>Jun-22</b>	0.25	0.11	0.42	44	19	73	32.52
<b>Jul-22</b>	0.55	0.28	0.85	96	50	149	26.41
<b>Aug-22</b>	0.37	0.22	0.54	65	39	93	21.66
<b>Sep-22</b>	0.18	0.04	0.37	33	8	64	44.86
<b>Oct-22</b>	0.14	0.04	0.25	24	8	44	39.66
<b>Nov-22</b>	0.02	0	0.07	4	0	12	98.22
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

Table 5.77 Gannet design-based density and abundance estimates of birds *in flight at the windfarm site + 2km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.02	0	0.07	5	0	12	94.04
Apr-21	0.02	0	0.07	4	0	12	99.68
May-21	0.02	0	0.07	4	0	12	97.02
Jun-21	0	0	0	0	0	0	0
Jul-21	0.18	0.04	0.36	32	8	63	45.67
Aug-21	1.5	0.85	2.27	260	148	394	23.51
Sep-21	0.6	0.23	1	104	40	175	33.79
Oct-21	0.02	0	0.07	4	0	12	97.47
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0.05	0	0.11	8	0	20	62.9
May-22	0.24	0.05	0.5	42	8	87	50.1
Jun-22	0.05	0	0.11	9	0	20	60.69
Jul-22	0.3	0.13	0.54	53	23	94	36.42
Aug-22	0.09	0.02	0.17	16	4	31	41.9
Sep-22	0.12	0.02	0.23	21	4	40	44.26
Oct-22	0.09	0.02	0.18	16	4	31	44.61
Nov-22	0.02	0	0.07	5	0	12	92.94
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.78 Gannet design-based density and abundance estimates of birds **on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.02	0	0.07	4	0	12	99.49
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0.32	0.14	0.54	56	24	95	33.12
<b>Jun-21</b>	0.02	0	0.07	4	0	12	94.47
<b>Jul-21</b>	0.75	0.51	1.04	131	89	181	18.37
<b>Aug-21</b>	2.11	1.71	2.49	367	297	433	9.02
<b>Sep-21</b>	0.12	0	0.25	22	0	44	51.16
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.09	0	0.27	16	0	48	98.43
<b>May-22</b>	2.27	0.6	4.28	395	105	744	43.74
<b>Jun-22</b>	0.21	0.09	0.36	37	16	63	33.84
<b>Jul-22</b>	0.25	0.09	0.49	44	16	86	42.28
<b>Aug-22</b>	0.25	0.13	0.4	44	23	70	28.38
<b>Sep-22</b>	0.07	0	0.18	12	0	32	76.14
<b>Oct-22</b>	0.05	0	0.11	8	0	20	64.59
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

**Table 5.79 Gannet design-based density and abundance estimates of birds *in flight and on sea at the windfarm site + 4km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.1	0.01	0.22	29	4	63	56.64
<b>Apr-21</b>	0.04	0	0.1	13	0	28	53.68
<b>May-21</b>	0.24	0.1	0.41	68	28	117	33.29
<b>Jun-21</b>	0.03	0	0.07	9	0	20	61.68
<b>Jul-21</b>	1.01	0.75	1.34	288	215	384	15.3
<b>Aug-21</b>	3.02	2.17	4.06	864	621	1160	16.52
<b>Sep-21</b>	0.55	0.27	0.86	158	78	245	26.31
<b>Oct-21</b>	0.04	0	0.08	13	0	25	50.87
<b>Nov-21</b>	0.04	0	0.13	13	0	37	95.77
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.12	0.01	0.31	36	4	88	63.3
<b>May-22</b>	1.63	0.48	3.18	467	136	908	43
<b>Jun-22</b>	0.18	0.08	0.31	53	24	88	30.19
<b>Jul-22</b>	0.66	0.39	0.98	188	111	280	23.69
<b>Aug-22</b>	0.47	0.3	0.64	133	87	182	18.39
<b>Sep-22</b>	0.14	0.05	0.24	40	16	68	36.08
<b>Oct-22</b>	0.1	0.03	0.17	28	8	49	35.59
<b>Nov-22</b>	0.03	0	0.07	9	0	20	69.71
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

Table 5.80 Gannet design-based density and abundance estimates of birds *in flight at the windfarm site + 4km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.01	0	0.04	4	0	12	91.31
<b>Apr-21</b>	0.03	0	0.07	8	0	20	66.85
<b>May-21</b>	0.01	0	0.04	4	0	12	95.31
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0.28	0.15	0.44	81	43	126	26.27
<b>Aug-21</b>	1.26	0.7	1.99	360	201	568	26.83
<b>Sep-21</b>	0.5	0.24	0.76	143	70	216	27.1
<b>Oct-21</b>	0.03	0	0.07	9	0	20	66.63
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.05	0	0.12	16	0	36	55.43
<b>May-22</b>	0.19	0.08	0.34	55	23	98	35.5
<b>Jun-22</b>	0.04	0	0.09	13	0	27	52.53
<b>Jul-22</b>	0.42	0.22	0.71	120	62	204	29.5
<b>Aug-22</b>	0.1	0.04	0.15	28	12	44	29.79
<b>Sep-22</b>	0.08	0.03	0.15	24	8	44	40.21
<b>Oct-22</b>	0.06	0.01	0.11	16	4	31	42.91
<b>Nov-22</b>	0.01	0	0.04	4	0	12	96.92
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

Table 5.81 Gannet design-based density and abundance estimates of birds **on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.08	0	0.2	25	0	59	65.18
<b>Apr-21</b>	0.01	0	0.04	5	0	12	92.08
<b>May-21</b>	0.22	0.11	0.36	64	31	103	29.34
<b>Jun-21</b>	0.03	0	0.07	9	0	20	66.61
<b>Jul-21</b>	0.7	0.5	0.94	202	142	269	15.88
<b>Aug-21</b>	1.72	1.33	2.15	493	379	614	12.33
<b>Sep-21</b>	0.08	0.02	0.15	22	7	43	51.01
<b>Oct-21</b>	0.01	0	0.04	5	0	12	92.11
<b>Nov-21</b>	0.04	0	0.13	12	0	37	99.82
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.07	0	0.19	21	0	55	76.28
<b>May-22</b>	1.41	0.35	2.8	402	100	801	46.02
<b>Jun-22</b>	0.14	0.05	0.24	40	16	70	35.33
<b>Jul-22</b>	0.23	0.11	0.38	65	31	110	31.86
<b>Aug-22</b>	0.35	0.21	0.5	101	61	142	20.59
<b>Sep-22</b>	0.06	0	0.12	16	0	36	55.03
<b>Oct-22</b>	0.03	0	0.07	9	0	20	66.74
<b>Nov-22</b>	0.01	0	0.04	5	0	12	96.32
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0



## 5.10 Great black-backed gull

Table 5.82 Great black-backed gull design-based density and abundance estimates of birds *in flight and on sea at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0.05	0	0.14	4	0	12	94.01
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0.05	0	0.14	5	0	13	75.45
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0.04	0	0.13	4	0	12	97.29
May-22	0.35	0.04	0.81	31	4	71	57.67
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0.04	0	0.13	4	0	12	90.37
Nov-22	0.04	0	0.17	4	0	15	100.99
Dec-22	0.13	0	0.4	12	0	36	97.42
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.83 Great black-backed gull design-based density and abundance estimates of birds **in flight at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0.05	0	0.14	5	0	12	92.54
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0.05	0	0.14	5	0	12	94.14
May-22	0.09	0	0.28	9	0	25	95.1
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0.05	0	0.14	5	0	12	93.5
Dec-22	0.13	0	0.4	12	0	35	95.59
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.84 Great black-backed gull design-based density and abundance estimates of birds on sea at the windfarm site (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0.05	0	0.13	5	0	12	90.81
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0.01	0	0.02	1	0	2	90.16
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0.26	0.04	0.52	23	4	45	48.8
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0.05	0	0.14	5	0	12	90.53
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.85 Great black-backed gull design-based density and abundance estimates of birds in flight and on sea at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0.07	0	0.14	13	0	24	48.56
Aug-21	0.02	0	0.07	4	0	12	93.24
Sep-21	0.05	0	0.16	10	0	29	97.26
Oct-21	0.02	0	0.07	4	0	12	98.07
Nov-21	0.03	0	0.08	6	0	14	75.61
Dec-21	0	0	0	0	0	0	0
Jan-22	0.02	0	0.07	4	0	12	94.08
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0.05	0	0.11	8	0	19	61.39
May-22	0.54	0.06	1.25	95	12	218	59.43
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0.02	0	0.07	5	0	12	92.75
Sep-22	0	0	0.01	1	0	1	99.12
Oct-22	0.07	0	0.18	12	0	31	69.11
Nov-22	0.03	0	0.07	5	0	13	79.44
Dec-22	0.1	0	0.25	18	0	44	68.13
Feb-23 (1)	0.02	0	0.07	4	0	12	92.47
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.86 Great black-backed gull design-based density and abundance estimates of birds in flight at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0.05	0	0.11	9	0	20	66.74
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0.02	0	0.07	5	0	12	92.55
Dec-21	0	0	0	0	0	0	0
Jan-22	0.02	0	0.07	5	0	12	93.82
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0.05	0	0.11	8	0	20	62.89
May-22	0.07	0	0.19	13	0	34	69.92
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0.02	0	0.07	5	0	12	96.11
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0.03	0	0.08	6	0	14	76.62
Dec-22	0.07	0	0.21	13	0	37	94.57
Feb-23 (1)	0.02	0	0.07	5	0	12	90.25
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.87 Great black-backed gull design-based density and abundance estimates of birds on sea at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0.02	0	0.07	4	0	12	93.73
Aug-21	0.02	0	0.07	4	0	12	94.38
Sep-21	0	0	0	1	0	1	95.98
Oct-21	0.02	0	0.07	5	0	12	93.84
Nov-21	0.01	0	0.02	2	0	3	62.61
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0.45	0.05	1.07	79	9	186	63.69
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0.01	1	0	1	100.83
Oct-22	0.07	0	0.17	13	0	31	67.12
Nov-22	0	0	0	0	0	0	0
Dec-22	0.03	0	0.07	5	0	13	88.51
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.88 Great black-backed gull design-based density and abundance estimates of birds in flight and on sea at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0.01	0	0.04	5	0	12	93.16
Jun-21	0	0	0	0	0	0	0
Jul-21	0.05	0.01	0.11	16	4	31	45.03
Aug-21	0.01	0	0.04	4	0	12	95.75
Sep-21	0.06	0	0.15	17	0	43	68.03
Oct-21	0.01	0	0.04	4	0	12	97.88
Nov-21	0.02	0	0.05	6	0	14	72.84
Dec-21	0	0	0	0	0	0	0
Jan-22	0.03	0	0.07	8	0	20	65.99
Feb-22	0.01	0	0.04	4	0	12	100.09
Mar-22	0	0	0	0	0	0	0
Apr-22	0.06	0	0.15	17	0	44	74.64
May-22	0.31	0.03	0.76	88	8	216	61.26
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0.01	0	0.04	5	0	12	95.81
Sep-22	0.01	0	0.04	5	0	13	89.31
Oct-22	0.07	0.01	0.14	21	4	40	45.59
Nov-22	0.03	0	0.07	9	0	20	60.58
Dec-22	0.06	0	0.14	17	0	41	68.86
Feb-23 (1)	0.03	0	0.08	9	0	24	92.64
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.89 Great black-backed gull design-based density and abundance estimates of birds in flight at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0.01	0	0.04	4	0	12	94.71
Jun-21	0	0	0	0	0	0	0
Jul-21	0.04	0	0.09	12	0	27	54.57
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0.01	0	0.04	5	0	13	92.63
Dec-21	0	0	0	0	0	0	0
Jan-22	0.03	0	0.07	8	0	20	62.89
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0.06	0	0.15	16	0	43	73.57
May-22	0.04	0	0.11	13	0	32	68.97
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0.01	0	0.04	5	0	12	92.99
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0.02	0	0.04	5	0	13	79.29
Dec-22	0.04	0	0.12	12	0	36	95.41
Feb-23 (1)	0.03	0	0.08	8	0	24	95.01
Feb-23 (2)	0	0	0	0	0	0	0



*Table 5.90 Great black-backed gull design-based density and abundance estimates of birds on sea at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0.01	0	0.04	5	0	12	88.98
Aug-21	0.01	0	0.04	4	0	12	96.46
Sep-21	0.03	0	0.08	8	0	23	98.54
Oct-21	0.01	0	0.04	4	0	12	97.41
Nov-21	0	0	0.01	2	0	3	65.88
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0.01	0	0.04	5	0	12	92.49
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0.27	0.03	0.67	78	8	192	66.86
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0.02	0	0.04	5	0	13	89.18
Oct-22	0.07	0.01	0.15	21	4	43	47.22
Nov-22	0.01	0	0.04	4	0	12	101.13
Dec-22	0.02	0	0.05	5	0	14	87.51
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

## 5.11 Great skua

Table 5.91 Great skua design-based density and abundance estimates of birds **in flight and on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.92 Great skua design-based density and abundance estimates of birds *in flight at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.93 Great skua design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.94 Great skua design-based density and abundance estimates of birds *in flight and on sea at the windfarm site + 2km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0.02	0	0.07	4	0	12	97.68
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.95 Great skua design-based density and abundance estimates of birds **in flight at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.96 Great skua design-based density and abundance estimates of birds **on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0.02	0	0.07	4	0	12	93.92
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.97 Great skua design-based density and abundance estimates of birds *in flight and on sea at the windfarm site + 4km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0.01	0	0.04	4	0	12	99.34
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0.01	0	0.05	5	0	16	98.85
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0



Table 5.98 Great skua design-based density and abundance estimates of birds **in flight at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0.01	0	0.04	4	0	12	96.17
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.99 Great skua design-based density and abundance estimates of birds **on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0.01	0	0.04	4	0	12	97.16
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

## 5.12 Guillemot

Table 5.100 Guillemot design-based density and abundance estimates of birds *in flight and on sea at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	19.52	12.23	27.69	1698	1063	2408	21.38
<b>Apr-21</b>	4.05	3.23	4.95	354	280	431	11.02
<b>May-21</b>	3.35	1.74	5.14	291	151	448	27.15
<b>Jun-21</b>	2.91	1.79	4.38	253	157	382	19.37
<b>Jul-21</b>	30.31	22.24	37.52	2634	1933	3262	13.71
<b>Aug-21</b>	66.25	46.75	88.72	5758	4063	7709	17.68
<b>Sep-21</b>	1.21	0	2.67	107	0	233	63.55
<b>Oct-21</b>	15.56	10.45	22.13	1354	908	1924	18.24
<b>Nov-21</b>	8.86	7.39	10.77	772	643	936	9.72
<b>Dec-21</b>	0.71	0.12	1.64	64	12	143	56.25
<b>Jan-22</b>	9.3	5.16	14	808	449	1217	27.97
<b>Feb-22</b>	10.32	7.14	13.79	898	621	1200	17.59
<b>Mar-22</b>	3.74	1.96	5.81	325	171	506	28.31
<b>Apr-22</b>	3.45	2.73	4.19	300	237	365	11.67
<b>May-22</b>	28.21	20.7	36.13	2453	1800	3140	15.53
<b>Jun-22</b>	17.27	9.18	27.29	1502	798	2371	29.56
<b>Jul-22</b>	50.84	37	66.76	4418	3214	5802	16.09
<b>Aug-22</b>	40.68	32.22	48.48	3535	2801	4212	11.09
<b>Sep-22</b>	37.49	31.36	43.7	3257	2725	3797	9
<b>Oct-22</b>	30.12	24.03	37.95	2618	2088	3298	12.68
<b>Nov-22</b>	7.62	6.1	9.45	662	531	822	12.24
<b>Dec-22</b>	20.23	16.26	24.51	1759	1414	2132	9.66
<b>Feb-23 (1)</b>	3.17	1.97	4.49	275	172	392	19.64
<b>Feb-23 (2)</b>	2.85	1.76	4.08	249	154	356	20.08

Table 5.101 Guillemot design-based density and abundance estimates of birds **in flight at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.55	0.17	1.01	48	15	89	40.36
<b>Apr-21</b>	0.09	0	0.22	9	0	19	59.26
<b>May-21</b>	0.14	0.04	0.27	12	4	24	48.73
<b>Jun-21</b>	0.22	0	0.68	20	0	59	96.49
<b>Jul-21</b>	0.18	0.04	0.38	16	4	34	50.25
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0.41	0.00	1.09	36	0	96	71.88
<b>Nov-21</b>	0.13	0	0.32	12	0	28	65.82
<b>Dec-21</b>	0.03	0	0.1	3	0	9	93.44
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0.14	0	0.27	13	0	24	46.13
<b>Mar-22</b>	0.01	0	0.03	1	0	3	89.79
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0.23	0.04	0.49	21	4	43	50.34
<b>Jun-22</b>	0.02	0	0.07	2	0	6	95.02
<b>Jul-22</b>	0.28	0.05	0.55	24	4	48	45.71
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0.05	0	0.14	4	0	12	96.48
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0.82	0.43	1.22	72	38	107	25.49
<b>Feb-23 (1)</b>	0.09	0	0.21	8	0	19	60.99
<b>Feb-23 (2)</b>	0.09	0	0.27	8	0	24	92.34

Table 5.102 Guillemot design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	14.41	9.16	20.26	1253	796	1761	19.86
Apr-21	3.01	2.45	3.59	262	213	313	9.93
May-21	2.44	1.29	3.7	212	112	322	25.05
Jun-21	2.04	1.36	2.81	177	119	245	17.79
Jul-21	22.88	16.86	28.21	1988	1465	2452	12.74
Aug-21	50.32	35.51	67.38	4373	3086	5855	16.16
Sep-21	0.92	0	2.03	81	0	177	60.74
Oct-21	11.51	7.94	15.98	1001	690	1388	17.44
Nov-21	6.63	5.61	7.94	577	488	690	9.03
Dec-21	0.52	0.09	1.17	46	9	102	54.2
Jan-22	7.06	3.92	10.63	614	341	924	25.11
Feb-22	7.73	5.42	10.27	672	472	893	16.44
Mar-22	2.83	1.49	4.39	246	130	382	26.17
Apr-22	2.62	2.07	3.18	228	180	277	10.86
May-22	21.25	15.69	27.07	1847	1364	2352	14.16
Jun-22	13.1	6.97	20.67	1139	606	1796	26.69
Jul-22	38.4	28.06	50.29	3337	2438	4370	14.97
Aug-22	30.9	24.47	36.82	2685	2127	3199	10.2
Sep-22	28.47	23.82	33.19	2474	2070	2884	8.46
Oct-22	22.84	18.25	28.72	1985	1586	2496	11.75
Nov-22	5.79	4.63	7.18	503	403	624	11.49
Dec-22	14.74	12.02	17.69	1281	1045	1538	10.12
Feb-23 (1)	2.34	1.5	3.25	203	131	283	18.64
Feb-23 (2)	2.1	1.34	2.89	183	117	252	19.8

Table 5.103 Guillemot design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	22.36	17.29	28.51	3883	3003	4952	13.26
<b>Apr-21</b>	3.14	2.56	3.65	548	445	636	8.76
<b>May-21</b>	2.62	1.57	3.67	455	274	638	20.88
<b>Jun-21</b>	3.42	1.95	5.58	595	340	970	26.39
<b>Jul-21</b>	27.9	22.54	32.96	4845	3916	5723	10.94
<b>Aug-21</b>	55.17	40.54	71.98	9580	7040	12500	15.69
<b>Sep-21</b>	1.76	0.5	3.24	308	87	562	41.23
<b>Oct-21</b>	16.97	12.45	22.14	2947	2163	3845	15.61
<b>Nov-21</b>	9.38	7.9	10.88	1629	1372	1890	8.41
<b>Dec-21</b>	0.72	0.3	1.3	127	53	225	32.28
<b>Jan-22</b>	7.23	4.27	10.6	1256	741	1841	24.6
<b>Feb-22</b>	10.02	7.05	13.25	1741	1223	2301	16.31
<b>Mar-22</b>	3.17	1.69	4.83	553	294	838	26.4
<b>Apr-22</b>	4.46	3.48	5.63	775	603	977	12.9
<b>May-22</b>	34.16	21.96	52.36	5933	3814	9091	24.91
<b>Jun-22</b>	15.91	9.31	24.92	2764	1620	4330	25.87
<b>Jul-22</b>	45.56	33.79	58.16	7913	5868	10099	13.85
<b>Aug-22</b>	40.22	34.3	46.25	6984	5957	8030	8.32
<b>Sep-22</b>	37.05	33.07	40.61	6433	5743	7051	5.43
<b>Oct-22</b>	29.16	25.27	34.1	5065	4387	5921	7.9
<b>Nov-22</b>	8.5	7	10.11	1478	1217	1759	9.54
<b>Dec-22</b>	16.69	14.23	19.4	2901	2471	3370	7.38
<b>Feb-23 (1)</b>	3.08	2.07	4.29	536	362	745	17.16
<b>Feb-23 (2)</b>	3.36	2.44	4.18	586	423	727	12.63

Table 5.104 Guillemot design-based density and abundance estimates of birds **in flight at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.44	0.13	0.81	77	23	141	39.96
<b>Apr-21</b>	0.09	0.02	0.16	16	4	29	39.61
<b>May-21</b>	0.14	0.04	0.25	24	8	43	39.1
<b>Jun-21</b>	0.12	0	0.34	21	0	60	97.03
<b>Jul-21</b>	0.09	0	0.2	16	0	35	55.33
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0.25	0.02	0.61	44	4	106	61.46
<b>Nov-21</b>	0.12	0	0.25	21	0	44	52
<b>Dec-21</b>	0.04	0	0.1	7	0	17	65.74
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0.21	0.07	0.39	37	12	67	38.62
<b>Mar-22</b>	0	0	0.02	1	0	3	100.42
<b>Apr-22</b>	0.02	0	0.07	5	0	12	94.38
<b>May-22</b>	0.26	0.12	0.39	45	21	67	25.96
<b>Jun-22</b>	0.15	0.04	0.29	27	8	51	42.85
<b>Jul-22</b>	0.14	0.04	0.28	25	8	49	44.51
<b>Aug-22</b>	0.02	0	0.07	4	0	12	97.28
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0.05	0	0.14	9	0	24	94.15
<b>Nov-22</b>	0.09	0	0.2	17	0	35	53.48
<b>Dec-22</b>	0.78	0.51	1.06	137	89	185	18.04
<b>Feb-23 (1)</b>	0.16	0.02	0.39	28	4	68	59.32
<b>Feb-23 (2)</b>	0.07	0	0.18	13	0	32	70.27

Table 5.105 Guillemot design-based density and abundance estimates of birds **on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	16.65	13.03	21.04	2891	2263	3654	12.4
<b>Apr-21</b>	2.32	1.93	2.65	404	335	461	8.12
<b>May-21</b>	1.88	1.16	2.6	327	202	452	19.95
<b>Jun-21</b>	2.51	1.48	3.98	436	258	691	25.09
<b>Jul-21</b>	21.12	17.12	24.88	3668	2974	4320	9.9
<b>Aug-21</b>	41.9	30.79	54.67	7276	5347	9494	14.3
<b>Sep-21</b>	1.34	0.38	2.46	234	66	427	39.75
<b>Oct-21</b>	12.7	9.44	16.35	2205	1640	2840	14.64
<b>Nov-21</b>	7.03	6	8.07	1221	1042	1402	7.61
<b>Dec-21</b>	0.52	0.23	0.91	91	40	158	32.11
<b>Jan-22</b>	5.49	3.24	8.05	954	563	1398	22.63
<b>Feb-22</b>	7.45	5.3	9.77	1294	920	1697	15.24
<b>Mar-22</b>	2.41	1.28	3.65	419	223	634	24.83
<b>Apr-22</b>	3.37	2.64	4.22	585	458	733	12.02
<b>May-22</b>	25.75	16.59	39.47	4472	2881	6854	22.8
<b>Jun-22</b>	11.97	7.04	18.71	2079	1224	3250	24.56
<b>Jul-22</b>	34.5	25.63	43.96	5991	4451	7633	13.47
<b>Aug-22</b>	30.53	26.05	35.07	5301	4524	6090	7.74
<b>Sep-22</b>	28.14	25.12	30.84	4886	4362	5355	5.04
<b>Oct-22</b>	22.11	19.19	25.79	3840	3332	4479	7.57
<b>Nov-22</b>	6.39	5.32	7.53	1110	924	1309	8.85
<b>Dec-22</b>	12.08	10.42	13.93	2099	1809	2419	7.43
<b>Feb-23 (1)</b>	2.22	1.56	2.96	386	272	514	16.36
<b>Feb-23 (2)</b>	2.5	1.85	3.04	435	321	528	12.37



Table 5.106 Guillemot design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	19.45	15.69	23.27	5557	4478	6644	10.33
Apr-21	3.54	3.02	4.04	1011	861	1154	7.42
May-21	2.5	1.61	3.59	715	461	1028	20.42
Jun-21	3.13	2.02	4.48	895	581	1281	20.34
Jul-21	25.43	21.05	29.7	7260	6011	8479	9.09
Aug-21	45.91	32.65	60.07	13110	9325	17151	16.95
Sep-21	2.24	1.18	3.34	640	340	955	
Oct-21	15.02	10.73	19.78	4286	3064	5650	14.91
Nov-21	11.4	8.55	15.43	3257	2439	4408	16.55
Dec-21	0.76	0.45	1.17	216	128	333	24.54
Jan-22	6.54	4.17	9.19	1870	1192	2627	20.59
Feb-22	9.01	6.44	11.92	2575	1839	3401	16
Mar-22	2.86	1.72	4.1	817	495	1171	22.28
Apr-22	5.4	3.89	7.2	1543	1113	2057	16.72
May-22	26.76	18.23	39.32	7639	5207	11228	21.86
Jun-22	12.42	8.26	17.1	3547	2360	4882	19.65
Jul-22	38.27	27.86	49.52	10929	7957	14140	15.14
Aug-22	39.97	35.59	45.24	11415	10162	12919	6.53
Sep-22	31.38	28.49	34.38	8957	8136	9816	5.06
Oct-22	27.23	24.13	30.7	7775	6890	8766	6.77
Nov-22	9.57	7.76	11.79	2737	2217	3367	11.33
Dec-22	13.43	11.89	15.19	3836	3396	4338	6.05
Feb-23 (1)	3.29	2.37	4.17	939	677	1195	12.25
Feb-23 (2)	3.61	2.75	4.48	1031	785	1280	12.32

Table 5.107 Guillemot design-based density and abundance estimates of birds **in flight at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.31	0.11	0.54	89	32	154	36.4
<b>Apr-21</b>	0.14	0.07	0.22	41	20	64	28.22
<b>May-21</b>	0.1	0.04	0.17	29	12	48	34.27
<b>Jun-21</b>	0.13	0.01	0.27	37	4	78	55
<b>Jul-21</b>	0.1	0.01	0.21	29	4	59	47.32
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0.15	0.01	0.4	44	4	115	64.42
<b>Nov-21</b>	0.25	0.08	0.54	72	23	154	48.23
<b>Dec-21</b>	0.02	0	0.06	7	0	17	66.44
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0.2	0.09	0.33	58	27	94	30.03
<b>Mar-22</b>	0	0	0.01	1	0	3	94.12
<b>Apr-22</b>	0.07	0.01	0.12	20	4	36	38.98
<b>May-22</b>	0.24	0.14	0.33	68	40	96	20.87
<b>Jun-22</b>	0.12	0.04	0.23	34	12	66	39.86
<b>Jul-22</b>	0.18	0.07	0.32	52	20	91	36.26
<b>Aug-22</b>	0.01	0	0.04	5	0	12	91.43
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0.08	0.02	0.15	23	7	43	41.95
<b>Nov-22</b>	0.08	0.03	0.15	25	8	44	41.53
<b>Dec-22</b>	0.66	0.45	0.88	189	129	251	16.57
<b>Feb-23 (1)</b>	0.27	0.09	0.47	78	28	136	36.27
<b>Feb-23 (2)</b>	0.04	0	0.1	12	0	28	67.4

Table 5.108 Guillemot design-based density and abundance estimates of birds **on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	14.54	11.83	17.26	4153	3377	4929	9.56
Apr-21	2.58	2.24	2.9	737	639	828	6.55
May-21	1.82	1.19	2.6	521	341	744	20.11
Jun-21	2.28	1.53	3.2	652	438	914	18.88
Jul-21	19.24	15.98	22.4	5492	4562	6395	8.52
Aug-21	34.87	24.8	45.62	9957	7082	13026	15.52
Sep-21	1.7	0.9	2.54	486	258	725	24.85
Oct-21	11.29	8.14	14.72	3222	2324	4204	14.2
Nov-21	8.47	6.43	11.31	2419	1835	3231	15.3
Dec-21	0.56	0.34	0.84	159	97	240	22.93
Jan-22	4.97	3.17	6.98	1420	905	1995	19.47
Feb-22	6.69	4.82	8.8	1912	1376	2512	15.23
Mar-22	2.17	1.31	3.11	620	376	887	20.86
Apr-22	4.05	2.95	5.38	1157	842	1535	15.18
May-22	20.14	13.74	29.61	5750	3924	8455	20.75
Jun-22	9.34	6.24	12.81	2668	1783	3658	18.44
Jul-22	28.93	21.11	37.37	8261	6028	10670	13.9
Aug-22	30.35	27.03	34.33	8666	7718	9803	6.1
Sep-22	23.83	21.64	26.11	6803	6179	7455	4.69
Oct-22	20.62	18.31	23.2	5888	5228	6625	6.27
Nov-22	7.21	5.87	8.84	2060	1678	2524	10.67
Dec-22	9.7	8.69	10.87	2770	2481	3104	5.89
Feb-23 (1)	2.29	1.73	2.81	654	493	804	11.99
Feb-23 (2)	2.71	2.09	3.33	774	596	951	11.78

## 5.13 Herring gull

Table 5.109 Herring gull design-based density and abundance estimates of birds **in flight and on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.6	0	1.57	53	0	137	74.91
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0.05	0	0.14	5	0	12	86.16
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0.04	0	0.12	4	0	11	95.22
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0.19	0	0.41	17	0	37	55.13
Mar-22	0.04	0	0.14	4	0	12	93.84
Apr-22	0.14	0	0.32	13	0	28	62.75
May-22	0.75	0.17	1.55	66	15	135	47.93
Jun-22	0.05	0	0.14	4	0	12	94.51
Jul-22	0.02	0	0.06	2	0	6	91.02
Aug-22	0.11	0	0.26	10	0	23	59.84
Sep-22	0	0	0	0	0	0	0
Oct-22	0.63	0	1.71	55	0	149	78.22
Nov-22	0.04	0	0.13	4	0	12	100.95
Dec-22	0.5	0.22	0.84	44	20	74	31.75
Feb-23 (1)	0.09	0	0.27	9	0	24	88.49
Feb-23 (2)	0.05	0	0.14	4	0	12	97.11

Table 5.110 Herring gull design-based density and abundance estimates of birds *in flight at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.09	0	0.22	8	0	20	68.07
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0.05	0	0.17	4	0	15	95.14
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0.05	0	0.13	4	0	12	90.95
Mar-22	0.05	0	0.17	5	0	15	95.85
Apr-22	0.05	0	0.14	4	0	12	92.35
May-22	0.08	0	0.2	7	0	17	62.58
Jun-22	0.04	0	0.13	4	0	12	94.85
Jul-22	0.02	0	0.06	2	0	6	92.06
Aug-22	0.04	0	0.13	4	0	12	99.05
Sep-22	0	0	0	0	0	0	0
Oct-22	0.14	0	0.35	12	0	31	67.18
Nov-22	0	0	0	0	0	0	0
Dec-22	0.23	0.08	0.42	20	8	37	39.61
Feb-23 (1)	0.09	0	0.27	8	0	24	93.52
Feb-23 (2)	0.05	0	0.14	5	0	12	91.62

Table 5.111 Herring gull design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.51	0	1.5	45	0	131	92.85
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0.04	0	0.12	4	0	11	92.95
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0.14	0	0.38	13	0	33	71
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.09	0	0.22	9	0	20	61.15
<b>May-22</b>	0.68	0.09	1.37	60	8	120	48.84
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0.07	0	0.19	6	0	17	91.29
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0.46	0	1.39	41	0	121	93.34
<b>Nov-22</b>	0.05	0	0.14	5	0	12	94.34
<b>Dec-22</b>	0.27	0.04	0.63	24	4	55	59.27
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

*Table 5.112 Herring gull design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.68	0.23	1.26	119	40	219	38.15
<b>Apr-21</b>	0.05	0	0.14	9	0	24	95.35
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0.05	0	0.14	9	0	24	94.96
<b>Jul-21</b>	0.02	0	0.07	5	0	12	91.45
<b>Aug-21</b>	0.19	0	0.68	34	0	119	93.69
<b>Sep-21</b>	0.93	0	2.55	162	0	444	86.28
<b>Oct-21</b>	0.28	0	0.82	49	0	144	94.69
<b>Nov-21</b>	0.15	0.02	0.33	27	4	58	53.49
<b>Dec-21</b>	0.07	0	0.18	13	0	31	65.99
<b>Jan-22</b>	0.07	0	0.21	13	0	36	94.11
<b>Feb-22</b>	0.16	0.07	0.27	28	12	48	34.27
<b>Mar-22</b>	0.05	0	0.11	9	0	20	62.47
<b>Apr-22</b>	0.13	0.02	0.24	22	4	42	42.83
<b>May-22</b>	1.16	0.23	2.52	201	40	438	55.16
<b>Jun-22</b>	0.09	0	0.2	16	0	35	53.75
<b>Jul-22</b>	0.24	0.03	0.56	41	6	98	57.26
<b>Aug-22</b>	0.28	0	0.78	49	0	136	84.67
<b>Sep-22</b>	0.02	0	0.07	5	0	13	87.51
<b>Oct-22</b>	0.33	0	0.86	58	0	149	72.39
<b>Nov-22</b>	0.31	0.06	0.7	55	11	122	55.57
<b>Dec-22</b>	0.76	0.38	1.19	133	67	207	26.32
<b>Feb-23 (1)</b>	0.69	0	1.95	121	0	339	87.68
<b>Feb-23 (2)</b>	0.25	0.02	0.61	44	4	107	66.95

Table 5.113 Herring gull design-based density and abundance estimates of birds **in flight at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.21	0.04	0.45	37	8	79	54.47
<b>Apr-21</b>	0.02	0	0.07	5	0	13	99.16
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0.02	0	0.07	4	0	12	96.76
<b>Jul-21</b>	0.02	0	0.07	4	0	12	99.04
<b>Aug-21</b>	0.09	0	0.27	16	0	47	94.72
<b>Sep-21</b>	0.08	0	0.2	14	0	35	68.59
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0.02	0	0.07	4	0	12	90.29
<b>Dec-21</b>	0.05	0	0.11	8	0	20	64.96
<b>Jan-22</b>	0.07	0	0.21	13	0	36	92.46
<b>Feb-22</b>	0.09	0.02	0.18	17	4	31	42.51
<b>Mar-22</b>	0.02	0	0.07	5	0	12	92.35
<b>Apr-22</b>	0.02	0	0.07	5	0	12	93.23
<b>May-22</b>	0.21	0.04	0.45	37	8	78	52.42
<b>Jun-22</b>	0.05	0	0.11	8	0	20	64.79
<b>Jul-22</b>	0.17	0.01	0.41	31	2	71	61.58
<b>Aug-22</b>	0.04	0	0.14	8	0	24	97.04
<b>Sep-22</b>	0.02	0	0.07	4	0	12	96.01
<b>Oct-22</b>	0.09	0	0.2	16	0	35	55.42
<b>Nov-22</b>	0.15	0.04	0.31	27	7	55	45.59
<b>Dec-22</b>	0.33	0.18	0.5	57	31	87	25.82
<b>Feb-23 (1)</b>	0.2	0	0.5	36	0	87	63.49
<b>Feb-23 (2)</b>	0.14	0.02	0.29	24	4	50	51.24



Table 5.114 Herring gull design-based density and abundance estimates of birds **on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.47	0.13	1	82	23	174	49.51
<b>Apr-21</b>	0.02	0	0.07	5	0	12	92.12
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0.02	0	0.07	5	0	12	97.3
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0.09	0	0.27	17	0	48	94.06
<b>Sep-21</b>	0.76	0	2.19	133	0	381	92.45
<b>Oct-21</b>	0.28	0	0.83	49	0	144	97.17
<b>Nov-21</b>	0.14	0.02	0.3	24	4	53	56.28
<b>Dec-21</b>	0.02	0	0.07	4	0	12	97.28
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0.07	0	0.18	13	0	32	66.89
<b>Mar-22</b>	0.02	0	0.07	4	0	12	100.17
<b>Apr-22</b>	0.1	0.02	0.2	19	4	35	41.44
<b>May-22</b>	0.93	0.18	2.1	161	31	366	55.42
<b>Jun-22</b>	0.05	0	0.11	9	0	20	61.69
<b>Jul-22</b>	0.07	0	0.18	13	0	32	71.54
<b>Aug-22</b>	0.24	0	0.68	42	0	119	83.04
<b>Sep-22</b>	0	0	0.01	1	0	1	94.1
<b>Oct-22</b>	0.23	0	0.71	41	0	124	94.69
<b>Nov-22</b>	0.12	0	0.28	21	0	50	63.88
<b>Dec-22</b>	0.43	0.11	0.84	75	19	146	43.82
<b>Feb-23 (1)</b>	0.49	0	1.45	85	0	252	96.52
<b>Feb-23 (2)</b>	0.12	0	0.34	20	0	60	94.54

*Table 5.115 Herring gull design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.47	0.19	0.82	134	55	236	35.19
<b>Apr-21</b>	0.04	0	0.11	13	0	31	65.59
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0.03	0	0.08	9	0	25	94.5
<b>Jul-21</b>	0.04	0	0.09	12	0	28	56.09
<b>Aug-21</b>	0.17	0	0.48	48	0	137	90.16
<b>Sep-21</b>	0.62	0.03	1.64	178	10	469	77.32
<b>Oct-21</b>	0.17	0	0.5	49	0	144	97.53
<b>Nov-21</b>	0.1	0.01	0.2	28	4	57	50.46
<b>Dec-21</b>	0.06	0	0.12	17	0	36	56.51
<b>Jan-22</b>	0.15	0.01	0.35	43	4	101	59.11
<b>Feb-22</b>	0.11	0.05	0.18	33	16	52	30.62
<b>Mar-22</b>	0.08	0.03	0.15	24	8	44	40.27
<b>Apr-22</b>	0.17	0.06	0.29	49	18	84	34.51
<b>May-22</b>	0.69	0.15	1.61	198	44	460	55.68
<b>Jun-22</b>	0.07	0.01	0.14	21	4	40	45.44
<b>Jul-22</b>	0.17	0.04	0.36	49	12	104	49.11
<b>Aug-22</b>	0.17	0	0.49	50	0	142	88.05
<b>Sep-22</b>	0.06	0.01	0.11	17	4	32	43.37
<b>Oct-22</b>	0.2	0	0.53	57	0	151	77.58
<b>Nov-22</b>	0.46	0.18	0.81	132	52	232	35.18
<b>Dec-22</b>	0.57	0.34	0.86	162	97	246	23.11
<b>Feb-23 (1)</b>	0.47	0.04	1.22	134	12	350	75.95
<b>Feb-23 (2)</b>	0.21	0.05	0.45	60	16	130	52.38

Table 5.116 Herring gull design-based density and abundance estimates of birds **in flight at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.17	0.05	0.32	48	16	91	41.53
<b>Apr-21</b>	0.03	0	0.07	9	0	20	66.66
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0.01	0	0.04	5	0	12	94.64
<b>Jul-21</b>	0.03	0	0.07	8	0	20	72.04
<b>Aug-21</b>	0.11	0	0.3	33	0	87	82.3
<b>Sep-21</b>	0.08	0	0.2	24	0	57	63.09
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0.01	0	0.04	4	0	13	94.92
<b>Dec-21</b>	0.04	0	0.09	12	0	27	54.91
<b>Jan-22</b>	0.08	0	0.22	25	0	62	65.86
<b>Feb-22</b>	0.07	0.03	0.12	20	8	36	38.66
<b>Mar-22</b>	0.04	0	0.08	12	0	24	50.46
<b>Apr-22</b>	0.1	0.03	0.18	28	8	52	39.71
<b>May-22</b>	0.12	0.03	0.27	36	8	78	53.41
<b>Jun-22</b>	0.03	0	0.07	9	0	20	67.31
<b>Jul-22</b>	0.13	0.03	0.29	39	8	84	52.47
<b>Aug-22</b>	0.03	0	0.08	9	0	24	95.84
<b>Sep-22</b>	0.03	0	0.07	8	0	20	66.87
<b>Oct-22</b>	0.06	0	0.12	16	0	36	55.52
<b>Nov-22</b>	0.18	0.07	0.3	52	22	87	31.61
<b>Dec-22</b>	0.3	0.17	0.44	85	48	126	23.81
<b>Feb-23 (1)</b>	0.17	0.03	0.35	48	8	102	50.64
<b>Feb-23 (2)</b>	0.13	0.04	0.24	38	12	69	38.47

*Table 5.117 Herring gull design-based density and abundance estimates of birds on sea at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.3	0.08	0.62	86	23	177	48.45
<b>Apr-21</b>	0.01	0	0.04	5	0	12	92.62
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0.01	0	0.04	4	0	13	98.71
<b>Jul-21</b>	0.01	0	0.04	4	0	12	97.7
<b>Aug-21</b>	0.05	0	0.17	16	0	48	97.72
<b>Sep-21</b>	0.48	0	1.35	138	0	386	87.19
<b>Oct-21</b>	0.16	0	0.5	46	0	144	99.16
<b>Nov-21</b>	0.08	0.01	0.18	23	4	53	55.75
<b>Dec-21</b>	0.01	0	0.04	5	0	12	94.12
<b>Jan-22</b>	0.07	0	0.18	20	0	51	70.66
<b>Feb-22</b>	0.04	0	0.11	12	0	32	72.03
<b>Mar-22</b>	0.04	0	0.1	12	0	29	68.92
<b>Apr-22</b>	0.07	0.02	0.13	21	6	38	40.15
<b>May-22</b>	0.56	0.08	1.26	161	23	361	56.86
<b>Jun-22</b>	0.04	0	0.09	13	0	27	50.96
<b>Jul-22</b>	0.04	0	0.11	13	0	32	69.78
<b>Aug-22</b>	0.15	0	0.41	43	0	117	81.98
<b>Sep-22</b>	0.03	0	0.07	9	0	20	63.46
<b>Oct-22</b>	0.15	0	0.43	43	0	124	95.72
<b>Nov-22</b>	0.25	0.08	0.45	72	24	128	38.9
<b>Dec-22</b>	0.27	0.07	0.53	79	20	152	42.98
<b>Feb-23 (1)</b>	0.32	0	0.89	92	0	255	87.38
<b>Feb-23 (2)</b>	0.08	0	0.23	25	0	66	79.5

## 5.14 Kittiwake

Table 5.118 Kittiwake design-based density and abundance estimates of birds **in flight and on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	1.6	1.17	2.02	139	102	176	13.97
<b>Apr-21</b>	0.37	0.13	0.63	32	12	55	36.55
<b>May-21</b>	2.52	0.54	5.58	220	48	485	57.23
<b>Jun-21</b>	1.23	0.36	2.58	107	31	225	50.63
<b>Jul-21</b>	0.41	0.22	0.59	36	19	52	23.56
<b>Aug-21</b>	4.77	0.18	12.55	415	16	1091	80.87
<b>Sep-21</b>	21.92	2.71	51.15	1904	236	4444	59.47
<b>Oct-21</b>	0.19	0	0.38	17	0	34	49.32
<b>Nov-21</b>	0.77	0.3	1.25	67	27	109	31.62
<b>Dec-21</b>	0.41	0.18	0.67	36	16	59	30.47
<b>Jan-22</b>	0.04	0	0.13	4	0	12	93.06
<b>Feb-22</b>	0.14	0	0.35	12	0	31	68.94
<b>Mar-22</b>	2.01	1.59	2.42	175	138	211	10.53
<b>Apr-22</b>	1.75	0.91	2.75	153	79	239	27.94
<b>May-22</b>	3.36	2.19	4.64	293	191	404	18.27
<b>Jun-22</b>	1.8	1.31	2.37	157	115	206	14.84
<b>Jul-22</b>	3.25	1.56	5.06	282	136	440	27.48
<b>Aug-22</b>	2.6	1.77	3.45	226	154	300	16.83
<b>Sep-22</b>	1.52	1.12	2	133	97	174	15.2
<b>Oct-22</b>	1.03	0.18	2.34	90	16	204	58.39
<b>Nov-22</b>	1.36	0.89	1.81	119	78	158	17.98
<b>Dec-22</b>	1.11	0.6	1.77	97	52	154	26.87
<b>Feb-23 (1)</b>	0.32	0.12	0.54	28	11	48	34.2
<b>Feb-23 (2)</b>	0.69	0.42	0.96	61	37	84	19.96

Table 5.119 Kittiwake design-based density and abundance estimates of birds **in flight at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.92	0.56	1.3	80	50	113	21.22
Apr-21	0.09	0	0.22	8	0	20	62.66
May-21	1	0.39	1.79	88	35	156	37.74
Jun-21	0.78	0.31	1.43	69	27	124	37.09
Jul-21	0.41	0.22	0.61	36	19	53	24.87
Aug-21	0.55	0.09	1.27	49	8	111	59.82
Sep-21	2.99	1.83	4.2	260	159	365	19.84
Oct-21	0.09	0.00	0.21	8	0	19	60.65
Nov-21	0.32	0.08	0.62	28	8	55	44.06
Dec-21	0.36	0.13	0.66	32	12	58	36.02
Jan-22	0.05	0	0.13	4	0	12	89.15
Feb-22	0.14	0	0.32	12	0	28	65.18
Mar-22	1.1	0.71	1.45	96	62	127	17.33
Apr-22	0.87	0.45	1.26	76	39	110	24.04
May-22	1.5	0.73	2.5	131	64	218	31.47
Jun-22	1.41	0.94	1.95	123	82	170	18.16
Jul-22	2.38	1.16	3.81	207	102	331	28.93
Aug-22	1.77	1.08	2.61	154	95	227	22.48
Sep-22	1.06	0.65	1.48	92	57	129	20.32
Oct-22	0.18	0.04	0.32	16	4	28	39.77
Nov-22	1.09	0.71	1.52	95	62	132	19.18
Dec-22	0.64	0.27	1.13	56	24	99	35.16
Feb-23 (1)	0.09	0	0.22	9	0	20	64.38
Feb-23 (2)	0.23	0.09	0.36	21	8	32	31.03

Table 5.120 Kittiwake design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.69	0.36	1	60	31	87	23.79
<b>Apr-21</b>	0.28	0.08	0.54	25	8	48	43.82
<b>May-21</b>	1.52	0.04	4.09	133	4	356	79.51
<b>Jun-21</b>	0.45	0	1.24	40	0	108	82.92
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	3.8	0	11.16	331	0	970	89.91
<b>Sep-21</b>	20	0.08	49.76	1738	8	4323	65.9
<b>Oct-21</b>	0.09	0	0.22	8	0	19	63.51
<b>Nov-21</b>	0.46	0.17	0.77	40	15	68	34.3
<b>Dec-21</b>	0.04	0	0.13	4	0	12	95.54
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0.87	0.59	1.14	76	52	100	15.98
<b>Apr-22</b>	0.87	0.09	1.95	76	8	170	54.17
<b>May-22</b>	1.84	0.94	2.92	160	82	254	27.08
<b>Jun-22</b>	0.36	0.17	0.56	32	16	49	28.38
<b>Jul-22</b>	0.88	0.3	1.52	77	26	133	36.07
<b>Aug-22</b>	0.82	0.34	1.36	72	30	119	32.08
<b>Sep-22</b>	0.45	0.27	0.63	39	24	55	21.07
<b>Oct-22</b>	0.87	0.12	2.07	76	11	180	63.67
<b>Nov-22</b>	0.28	0.04	0.58	25	4	51	49.01
<b>Dec-22</b>	0.45	0.21	0.73	40	19	64	30.5
<b>Feb-23 (1)</b>	0.23	0.09	0.39	21	8	35	33.89
<b>Feb-23 (2)</b>	0.45	0.22	0.71	40	20	62	28.05

Table 5.121 Kittiwake design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	1.97	1.41	2.58	343	245	449	15.11
Apr-21	0.51	0.25	0.87	89	44	151	30.73
May-21	1.59	0.58	3.33	276	102	578	50.05
Jun-21	2.03	0.58	4.36	354	101	757	50.42
Jul-21	1.02	0.24	2.4	178	41	416	63.31
Aug-21	14.83	3.83	27.65	2576	666	4802	43.01
Sep-21	16.57	5.09	31.02	2878	884	5386	41.23
Oct-21	0.34	0.09	0.61	60	16	107	39.32
Nov-21	1.39	0.74	2.48	242	130	431	32.81
Dec-21	0.44	0.28	0.63	76	50	109	19.75
Jan-22	0.02	0	0.07	5	0	12	90.8
Feb-22	0.14	0.02	0.28	24	4	49	49.22
Mar-22	1.76	1.36	2.2	305	237	383	12.22
Apr-22	4.44	1.27	10.66	771	221	1851	62.82
May-22	5.07	1.94	10.56	881	338	1835	52.07
Jun-22	2.37	1.72	3.11	413	299	541	15.11
Jul-22	4.36	1.93	7.81	758	336	1357	36.09
Aug-22	2.71	1.97	3.54	471	342	616	15.13
Sep-22	3.2	1.63	5.85	556	284	1016	35.62
Oct-22	1.3	0.44	2.3	227	76	399	38.59
Nov-22	1.49	0.99	2.06	258	173	359	17.74
Dec-22	1.42	0.94	1.93	247	164	335	18.56
Feb-23 (1)	0.41	0.2	0.67	72	35	117	29.99
Feb-23 (2)	0.74	0.53	0.97	128	92	170	16.44



Table 5.122 Kittiwake design-based density and abundance estimates of birds **in flight at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.98	0.65	1.32	171	113	230	17.81
<b>Apr-21</b>	0.23	0.13	0.34	41	23	60	24.7
<b>May-21</b>	0.82	0.45	1.32	143	79	230	27.1
<b>Jun-21</b>	1.26	0.5	2.55	219	88	444	45.48
<b>Jul-21</b>	0.86	0.25	1.89	150	43	328	56.18
<b>Aug-21</b>	3	0.49	7.19	521	86	1249	67.32
<b>Sep-21</b>	3.14	1.89	4.33	545	329	752	19.04
<b>Oct-21</b>	0.09	0	0.2	16	0	35	53.63
<b>Nov-21</b>	0.72	0.4	1.05	125	70	182	23.05
<b>Dec-21</b>	0.39	0.22	0.59	68	39	103	23.35
<b>Jan-22</b>	0.02	0	0.07	5	0	12	90.4
<b>Feb-22</b>	0.13	0.02	0.28	24	4	48	49.37
<b>Mar-22</b>	0.82	0.61	1.03	144	106	180	13.26
<b>Apr-22</b>	3.66	0.59	9.16	637	102	1592	73.79
<b>May-22</b>	3.47	0.76	8.51	603	132	1477	68.26
<b>Jun-22</b>	1.79	1.23	2.38	312	213	414	16.86
<b>Jul-22</b>	3.72	1.42	7.36	646	248	1279	43.54
<b>Aug-22</b>	1.91	1.47	2.44	332	256	424	12.95
<b>Sep-22</b>	1.48	0.86	2.28	258	149	397	24.6
<b>Oct-22</b>	0.42	0.07	0.99	73	12	172	61.3
<b>Nov-22</b>	0.85	0.57	1.17	147	99	203	17.97
<b>Dec-22</b>	1.07	0.71	1.49	187	124	259	18.43
<b>Feb-23 (1)</b>	0.09	0.02	0.18	16	4	31	43.84
<b>Feb-23 (2)</b>	0.23	0.11	0.38	41	20	66	29.32

Table 5.123 Kittiwake design-based density and abundance estimates of birds **on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.99	0.64	1.35	172	111	236	18.55
Apr-21	0.29	0.07	0.55	50	13	97	43.47
May-21	0.77	0.04	2.09	134	8	364	75.93
Jun-21	0.82	0.05	2.07	143	8	359	65.17
Jul-21	0.16	0	0.48	29	0	83	91.94
Aug-21	12.28	2.47	24.43	2134	429	4243	46.63
Sep-21	13.74	2.58	29.99	2386	448	5208	50.93
Oct-21	0.26	0.05	0.53	45	8	92	46.36
Nov-21	0.65	0.18	1.39	114	31	241	51.49
Dec-21	0.04	0	0.1	8	0	19	66.23
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0.91	0.64	1.26	159	111	220	17.88
Apr-22	1.14	0.5	1.91	198	88	332	31.88
May-22	1.52	0.96	2.24	265	166	389	21.7
Jun-22	0.57	0.39	0.77	100	68	134	16.93
Jul-22	0.75	0.36	1.17	130	63	204	28.63
Aug-22	0.8	0.29	1.51	139	52	263	40.31
Sep-22	1.71	0.54	3.57	298	94	620	46.52
Oct-22	0.92	0.27	1.66	160	47	288	39.1
Nov-22	0.64	0.31	1.03	111	54	180	28.51
Dec-22	0.34	0.13	0.59	59	24	103	34.14
Feb-23 (1)	0.32	0.13	0.57	56	23	99	35.22
Feb-23 (2)	0.5	0.27	0.76	88	48	133	24.58

Table 5.124 Kittiwake design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	2.14	1.46	2.94	611	419	839	17.5
<b>Apr-21</b>	0.77	0.5	1.08	221	142	308	19.44
<b>May-21</b>	1.48	0.63	2.68	423	181	765	36.98
<b>Jun-21</b>	1.46	0.54	3.01	417	155	860	47.75
<b>Jul-21</b>	0.76	0.26	1.62	217	75	463	50.22
<b>Aug-21</b>	10.14	2.38	20.21	2895	681	5772	43.72
<b>Sep-21</b>	11.37	3.93	20.79	3247	1122	5937	38.48
<b>Oct-21</b>	0.3	0.14	0.47	85	40	135	28.66
<b>Nov-21</b>	1.35	0.85	1.97	385	243	563	22.26
<b>Dec-21</b>	0.39	0.26	0.5	111	76	144	15.6
<b>Jan-22</b>	0.09	0.02	0.19	27	7	55	48.3
<b>Feb-22</b>	0.18	0.06	0.33	53	16	95	37.78
<b>Mar-22</b>	1.79	1.48	2.1	511	423	601	8.87
<b>Apr-22</b>	3.49	1.39	7.22	998	398	2060	48.92
<b>May-22</b>	3.55	1.57	6.89	1015	450	1968	44.9
<b>Jun-22</b>	1.74	1.27	2.22	497	362	633	14.05
<b>Jul-22</b>	4.52	2.58	6.96	1290	737	1987	25.55
<b>Aug-22</b>	2.27	1.66	2.97	649	473	850	14.88
<b>Sep-22</b>	3.06	1.97	4.76	874	564	1358	23.06
<b>Oct-22</b>	1.11	0.46	1.87	317	131	535	34.07
<b>Nov-22</b>	1.51	1.11	1.99	433	317	568	14.93
<b>Dec-22</b>	1.35	0.93	1.81	386	265	516	17.23
<b>Feb-23 (1)</b>	0.37	0.21	0.53	105	61	153	22.85
<b>Feb-23 (2)</b>	0.83	0.6	1.05	236	172	300	14.27

Table 5.125 Kittiwake design-based density and abundance estimates of birds **in flight at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.8	0.55	1.07	229	159	305	16.36
<b>Apr-21</b>	0.32	0.24	0.42	93	68	119	14.57
<b>May-21</b>	0.7	0.42	1.05	201	122	300	22.53
<b>Jun-21</b>	0.96	0.48	1.7	273	137	485	36.09
<b>Jul-21</b>	0.64	0.25	1.28	183	72	367	45.7
<b>Aug-21</b>	2.07	0.44	4.79	590	126	1369	60.61
<b>Sep-21</b>	2.95	1.93	4.19	844	553	1198	18.93
<b>Oct-21</b>	0.13	0.04	0.21	37	13	62	33.34
<b>Nov-21</b>	0.73	0.52	0.94	209	148	269	14.78
<b>Dec-21</b>	0.31	0.2	0.42	88	59	120	18.41
<b>Jan-22</b>	0.01	0	0.04	4	0	12	97.77
<b>Feb-22</b>	0.13	0.04	0.23	37	12	67	39.36
<b>Mar-22</b>	0.82	0.64	1.01	234	185	289	11.06
<b>Apr-22</b>	2.49	0.71	5.86	711	202	1675	61.42
<b>May-22</b>	2.34	0.67	5.41	669	192	1545	62.22
<b>Jun-22</b>	1.32	0.92	1.76	378	264	504	16.7
<b>Jul-22</b>	3.45	1.61	6.1	984	460	1743	32.77
<b>Aug-22</b>	1.66	1.23	2.1	476	351	599	13.09
<b>Sep-22</b>	1.29	0.89	1.78	369	255	509	18.39
<b>Oct-22</b>	0.37	0.1	0.74	107	28	211	45.12
<b>Nov-22</b>	0.9	0.66	1.15	258	190	330	14.06
<b>Dec-22</b>	0.99	0.67	1.39	284	191	397	18.81
<b>Feb-23 (1)</b>	0.08	0.03	0.15	24	8	44	42.21
<b>Feb-23 (2)</b>	0.3	0.17	0.43	86	50	124	21.95

Table 5.126 Kittiwake design-based density and abundance estimates of birds **on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	1.32	0.89	1.82	379	255	519	18.94
<b>Apr-21</b>	0.45	0.22	0.72	128	63	206	28.48
<b>May-21</b>	0.79	0.16	1.75	225	46	499	54.44
<b>Jun-21</b>	0.5	0.03	1.26	144	8	362	66.22
<b>Jul-21</b>	0.11	0	0.31	33	0	88	83.49
<b>Aug-21</b>	7.88	1.5	16.14	2251	428	4610	47.81
<b>Sep-21</b>	8.69	1.86	18.37	2480	532	5245	50.55
<b>Oct-21</b>	0.17	0.05	0.32	48	16	93	43.71
<b>Nov-21</b>	0.6	0.17	1.18	172	49	338	43.48
<b>Dec-21</b>	0.08	0.03	0.14	24	8	40	34.99
<b>Jan-22</b>	0.08	0.01	0.18	24	4	52	55.66
<b>Feb-22</b>	0.06	0	0.14	17	0	40	68.68
<b>Mar-22</b>	0.96	0.72	1.19	275	206	340	12.26
<b>Apr-22</b>	0.97	0.53	1.48	277	153	422	25.37
<b>May-22</b>	1.17	0.78	1.64	336	223	470	19.64
<b>Jun-22</b>	0.42	0.28	0.56	120	79	159	17.02
<b>Jul-22</b>	0.98	0.55	1.44	280	158	411	23.14
<b>Aug-22</b>	0.58	0.25	1.02	166	71	292	34.91
<b>Sep-22</b>	1.72	0.79	2.85	490	226	813	32.07
<b>Oct-22</b>	0.7	0.26	1.27	201	76	364	36.69
<b>Nov-22</b>	0.62	0.36	0.93	178	102	266	24.32
<b>Dec-22</b>	0.32	0.16	0.49	93	47	142	25.7
<b>Feb-23 (1)</b>	0.28	0.15	0.43	81	44	124	25.62
<b>Feb-23 (2)</b>	0.52	0.37	0.71	150	105	202	17.34

## 5.15 Lesser black-backed gull

Table 5.127 Lesser black-backed gull design-based density and abundance estimates of birds *in flight and on sea at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0.05	0	0.13	5	0	12	89.39
Jun-21	0	0	0	0	0	0	0
Jul-21	0.05	0	0.14	5	0	12	92.02
Aug-21	0.23	0.05	0.44	21	5	38	40.87
Sep-21	0.32	0.00	0.72	29	0	63	62.49
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0.05	0	0.14	4	0	12	93.78
Mar-22	0.04	0	0.14	4	0	12	94.98
Apr-22	0	0	0	0	0	0	0
May-22	0.34	0.05	0.74	30	4	65	53.32
Jun-22	0	0	0	0	0	0	0
Jul-22	0.12	0.02	0.24	11	2	21	48.95
Aug-22	0.26	0.07	0.49	23	6	43	42.55
Sep-22	0.05	0	0.14	5	0	12	89.55
Oct-22	0.11	0	0.35	10	0	31	94.6
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

**Table 5.128 Lesser black-backed gull design-based density and abundance estimates of birds in flight at the windfarm site (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0.04	0	0.13	4	0	12	93.66
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0.05	0	0.14	5	0	12	89.54
<b>Aug-21</b>	0.09	0	0.21	9	0	19	59.01
<b>Sep-21</b>	0.32	0	0.75	28	0	66	60.87
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0.05	0	0.14	5	0	12	94.77
<b>Mar-22</b>	0.04	0	0.13	4	0	12	96.35
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0.05	0	0.17	5	0	15	84.65
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0.07	0	0.17	6	0	15	67.02
<b>Aug-22</b>	0.23	0	0.46	20	0	40	49.96
<b>Sep-22</b>	0.05	0	0.14	4	0	12	89.13
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

*Table 5.129 Lesser black-backed gull design-based density and abundance estimates of birds on sea at the windfarm site (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0.14	0	0.28	13	0	25	48.96
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0.29	0.04	0.7	26	4	61	64.99
Jun-22	0	0	0	0	0	0	0
Jul-22	0.05	0	0.14	4	0	12	88.18
Aug-22	0.02	0	0.07	3	0	7	92.22
Sep-22	0	0	0	0	0	0	0
Oct-22	0.12	0	0.35	11	0	31	89.63
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0



*Table 5.130 Lesser black-backed gull design-based density and abundance estimates of birds in flight and on sea at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0.02	0	0.07	5	0	12	91.97
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0.07	0.02	0.13	12	4	24	48.34
<b>Aug-21</b>	0.57	0.09	1.42	100	15	246	61.3
<b>Sep-21</b>	0.62	0.16	1.13	108	29	196	40.1
<b>Oct-21</b>	0.02	0	0.07	4	0	13	96.59
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0.04	0	0.11	8	0	20	67.79
<b>Mar-22</b>	0.09	0.02	0.2	17	4	36	51.7
<b>Apr-22</b>	0.02	0	0.07	4	0	12	94.79
<b>May-22</b>	0.38	0.08	0.81	66	14	141	49.78
<b>Jun-22</b>	0.02	0	0.07	5	0	12	94.32
<b>Jul-22</b>	0.31	0.14	0.5	54	24	88	30.88
<b>Aug-22</b>	0.24	0.07	0.47	43	12	81	41.95
<b>Sep-22</b>	0.22	0.04	0.49	39	8	85	55.63
<b>Oct-22</b>	0.06	0	0.18	11	0	31	92.31
<b>Nov-22</b>	0.02	0	0.07	5	0	13	89.77
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

*Table 5.131 Lesser black-backed gull design-based density and abundance estimates of birds in flight at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0.02	0	0.07	4	0	12	96.45
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0.07	0	0.14	12	0	24	52.74
<b>Aug-21</b>	0.07	0.02	0.15	13	4	26	48.74
<b>Sep-21</b>	0.41	0.12	0.82	72	21	143	44.32
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0.05	0	0.11	9	0	20	64.9
<b>Mar-22</b>	0.04	0	0.11	8	0	20	63.81
<b>Apr-22</b>	0.02	0	0.07	4	0	12	95.85
<b>May-22</b>	0.05	0	0.12	9	0	21	58.94
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0.24	0.09	0.42	42	16	73	35.32
<b>Aug-22</b>	0.19	0.04	0.36	33	8	63	43.8
<b>Sep-22</b>	0.07	0	0.14	12	0	24	51.82
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0.02	0	0.07	5	0	13	88.27
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

*Table 5.132 Lesser black-backed gull design-based density and abundance estimates of birds on sea at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0.5	0.04	1.2	87	8	209	65.91
<b>Sep-21</b>	0.23	0	0.64	41	0	111	78.94
<b>Oct-21</b>	0.02	0	0.07	5	0	12	91.85
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0.05	0	0.11	9	0	20	59.21
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0.34	0.03	0.75	59	6	130	58.23
<b>Jun-22</b>	0.02	0	0.07	5	0	12	95.8
<b>Jul-22</b>	0.07	0	0.14	12	0	24	52.77
<b>Aug-22</b>	0.06	0	0.16	11	0	29	76.41
<b>Sep-22</b>	0.15	0	0.43	27	0	75	85.01
<b>Oct-22</b>	0.06	0	0.18	11	0	31	94.73
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

**Table 5.133 Lesser black-backed gull design-based density and abundance estimates of birds in flight and on sea at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.01	0	0.04	5	0	12	92.55
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0.01	0	0.04	4	0	12	91.89
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0.11	0.04	0.19	33	12	56	34.12
<b>Aug-21</b>	0.45	0.08	0.98	129	23	280	53.78
<b>Sep-21</b>	0.48	0.13	0.92	136	37	264	43.7
<b>Oct-21</b>	0.01	0	0.04	5	0	12	92.94
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0.01	0	0.04	5	0	12	94.83
<b>Feb-22</b>	0.06	0.01	0.11	17	4	32	46.57
<b>Mar-22</b>	0.06	0	0.12	17	0	36	56.33
<b>Apr-22</b>	0.03	0	0.07	9	0	20	65.86
<b>May-22</b>	0.23	0.04	0.52	67	13	148	52.38
<b>Jun-22</b>	0.01	0	0.04	5	0	12	92
<b>Jul-22</b>	0.25	0.12	0.4	71	34	115	29.93
<b>Aug-22</b>	0.19	0.07	0.34	55	20	97	35.88
<b>Sep-22</b>	0.19	0.03	0.41	55	8	119	51.7
<b>Oct-22</b>	0.05	0	0.14	15	0	40	75.05
<b>Nov-22</b>	0.03	0	0.07	9	0	20	68.18
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0.01	0	0.04	4	0	12	100.77
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

*Table 5.134 Lesser black-backed gull design-based density and abundance estimates of birds in flight at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0.01	0	0.04	4	0	12	95.83
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0.11	0.04	0.19	33	12	55	34.23
<b>Aug-21</b>	0.1	0.01	0.22	28	4	64	57.25
<b>Sep-21</b>	0.31	0.07	0.7	90	20	199	55.84
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0.06	0.01	0.11	17	4	32	46.28
<b>Mar-22</b>	0.03	0	0.07	9	0	20	65.49
<b>Apr-22</b>	0.03	0	0.07	8	0	20	65.73
<b>May-22</b>	0.03	0	0.07	9	0	21	59.79
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0.2	0.08	0.35	57	22	101	35.24
<b>Aug-22</b>	0.15	0.06	0.27	45	16	77	34.53
<b>Sep-22</b>	0.06	0.01	0.11	17	4	31	40.55
<b>Oct-22</b>	0.01	0	0.04	5	0	12	94.1
<b>Nov-22</b>	0.02	0	0.04	5	0	13	88.78
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0.01	0	0.04	4	0	12	96.57
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

*Table 5.135 Lesser black-backed gull design-based density and abundance estimates of birds on sea at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.01	0	0.04	5	0	12	94.49
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0.34	0.05	0.81	98	16	231	60.81
<b>Sep-21</b>	0.17	0.01	0.45	50	4	128	65.19
<b>Oct-21</b>	0.01	0	0.04	5	0	12	95.06
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0.01	0	0.04	5	0	12	93.05
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0.03	0	0.07	9	0	20	66.01
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0.2	0.02	0.47	58	5	135	58.01
<b>Jun-22</b>	0.01	0	0.04	4	0	12	94.51
<b>Jul-22</b>	0.04	0	0.09	13	0	27	50.58
<b>Aug-22</b>	0.04	0	0.1	11	0	29	75.89
<b>Sep-22</b>	0.14	0	0.35	41	0	100	65.99
<b>Oct-22</b>	0.04	0	0.11	11	0	32	95.76
<b>Nov-22</b>	0.01	0	0.04	4	0	12	97.4
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

## 5.16 Little gull

Table 5.136 Little gull design-based density and abundance estimates of birds **in flight and on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0.01	1	0	1	95.32
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0.04	0	0.14	4	0	12	97.07
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0.05	0	0.17	5	0	15	97.76
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0.05	0	0.13	5	0	12	89.94
Dec-22	1.97	1.27	2.74	172	111	238	19.15
Feb-23 (1)	0.63	0.17	1.19	56	15	104	42.79
Feb-23 (2)	1.46	0.66	2.53	128	58	221	31.03

Table 5.137 Little gull design-based density and abundance estimates of birds **in flight at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0.05	0	0.14	4	0	13	100.42
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0.05	0	0.14	5	0	12	92.47
Dec-22	1.82	1.02	2.61	159	89	228	22.5
Feb-23 (1)	0.32	0.13	0.56	28	12	49	35.98
Feb-23 (2)	0.68	0.26	1.2	60	23	105	36.67



Table 5.138 Little gull design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0.01	1	0	1	93.66
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0.04	0	0.13	4	0	12	94.69
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0.14	0.04	0.26	12	4	23	45.47
Feb-23 (1)	0.33	0.08	0.67	29	8	58	49.8
Feb-23 (2)	0.71	0.25	1.32	62	22	115	39.59

Table 5.139 Little gull design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.1	0	0.2	17	0	36	51.85
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0.02	0	0.07	5	0	13	93.98
<b>Dec-21</b>	0.02	0	0.07	5	0	13	88.89
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0.02	0	0.07	5	0	12	97.21
<b>Mar-22</b>	0.02	0	0.07	4	0	12	94.71
<b>Apr-22</b>	0.02	0	0.07	4	0	12	95.17
<b>May-22</b>	0	0	0	0	0	0	0
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0.02	0	0.07	4	0	12	91.94
<b>Nov-22</b>	0.09	0.02	0.2	16	4	35	53.05
<b>Dec-22</b>	1.22	0.84	1.64	213	146	285	16.43
<b>Feb-23 (1)</b>	0.62	0.24	1.08	108	43	188	35.75
<b>Feb-23 (2)</b>	1.38	0.75	2.13	240	130	371	26.78

Table 5.140 Little gull design-based density and abundance estimates of birds **in flight at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.07	0	0.18	13	0	32	66.46
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0.02	0	0.07	4	0	12	98.68
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0.02	0	0.07	5	0	12	95.52
Mar-22	0.02	0	0.07	4	0	12	95.35
Apr-22	0.02	0	0.07	4	0	12	92.53
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0.02	0	0.07	4	0	13	101.67
Nov-22	0.05	0	0.11	9	0	20	65.39
Dec-22	1.09	0.7	1.53	190	122	267	20.06
Feb-23 (1)	0.32	0.11	0.58	56	20	101	38.92
Feb-23 (2)	0.6	0.29	0.94	105	52	163	28.04

Table 5.141 Little gull design-based density and abundance estimates of birds **on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.02	0	0.07	5	0	13	94.26
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0.02	0	0.07	5	0	13	83.14
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0	0	0	0	0	0	0
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0.05	0	0.14	9	0	24	95.2
<b>Dec-22</b>	0.09	0.02	0.18	16	4	31	42.69
<b>Feb-23 (1)</b>	0.28	0.09	0.48	49	16	85	35.28
<b>Feb-23 (2)</b>	0.76	0.28	1.49	132	49	259	41.27

Table 5.142 Little gull design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.12	0.04	0.21	36	12	60	35.65
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0.04	0	0.11	13	0	32	68.57
<b>Dec-21</b>	0.03	0	0.07	9	0	21	61.93
<b>Jan-22</b>	0.04	0	0.08	12	0	24	52.46
<b>Feb-22</b>	0.04	0	0.1	13	0	28	55.6
<b>Mar-22</b>	0.01	0	0.04	4	0	12	96.27
<b>Apr-22</b>	0.07	0.03	0.12	21	8	36	37.74
<b>May-22</b>	0	0	0	0	0	0	0
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0.01	0	0.04	5	0	13	96.05
<b>Nov-22</b>	0.08	0.01	0.17	24	4	49	46.72
<b>Dec-22</b>	0.84	0.59	1.08	239	170	308	15.29
<b>Feb-23 (1)</b>	0.38	0.15	0.65	108	43	185	34.09
<b>Feb-23 (2)</b>	1.27	0.68	1.94	363	196	554	25.57

Table 5.143 Little gull design-based density and abundance estimates of birds **in flight at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.08	0.01	0.17	25	4	48	46.52
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0.04	0	0.11	13	0	32	71.87
<b>Dec-21</b>	0.01	0	0.04	4	0	12	98.32
<b>Jan-22</b>	0.04	0	0.09	13	0	27	52.2
<b>Feb-22</b>	0.03	0	0.07	9	0	20	67.22
<b>Mar-22</b>	0.01	0	0.04	5	0	12	96.37
<b>Apr-22</b>	0.04	0	0.09	13	0	27	52.48
<b>May-22</b>	0	0	0	0	0	0	0
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0.01	0	0.04	5	0	13	98.7
<b>Nov-22</b>	0.06	0	0.12	16	0	35	55.66
<b>Dec-22</b>	0.75	0.48	1.06	214	138	302	19.17
<b>Feb-23 (1)</b>	0.21	0.08	0.37	60	24	107	36.18
<b>Feb-23 (2)</b>	0.55	0.29	0.87	156	84	248	27.58

Table 5.144 Little gull design-based density and abundance estimates of birds **on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.04	0	0.11	13	0	31	67.58
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0.02	0	0.04	5	0	13	84.72
Jan-22	0	0	0	0	0	0	0
Feb-22	0.01	0	0.04	4	0	12	95.63
Mar-22	0	0	0	0	0	0	0
Apr-22	0.03	0	0.07	9	0	20	65.12
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0.03	0	0.08	8	0	24	92.39
Dec-22	0.07	0.01	0.12	20	4	36	39.64
Feb-23 (1)	0.17	0.07	0.28	48	20	80	32.98
Feb-23 (2)	0.7	0.34	1.18	201	97	338	31.68

## 5.17 Manx shearwater

Table 5.145 Manx shearwater design-based density and abundance estimates of birds **in flight and on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0.04	0	0.12	4	0	11	91.4
Jun-21	0	0	0	0	0	0	0
Jul-21	51.39	26.62	80.29	4465	2313	6976	26.5
Aug-21	16.15	10.36	22.82	1404	901	1983	19.97
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0.04	0	0.14	4	0	12	95.82
May-22	25.31	10.18	43.42	2199	885	3773	34.28
Jun-22	16.3	4.26	34.45	1417	370	2993	50.52
Jul-22	9.78	5.61	13.68	850	488	1189	22.28
Aug-22	15.63	6.74	26.25	1358	586	2281	31.4
Sep-22	0.21	0	0.46	19	0	40	55.23
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0



Table 5.146 Manx shearwater design-based density and abundance estimates of birds **in flight** at the windfarm site (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	12.81	8.14	18.34	1114	708	1593	20.14
Aug-21	7.27	5.01	9.6	632	435	835	15.79
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0.05	0	0.14	5	0	12	92.64
May-22	2.34	1.3	3.61	204	114	314	25.23
Jun-22	1.46	0.4	2.84	127	35	247	43.25
Jul-22	1.44	0.14	3.44	125	12	300	68.04
Aug-22	1.05	0.55	1.62	91	48	142	26.15
Sep-22	0.04	0	0.14	4	0	12	95.8
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.147 Manx shearwater design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0.04	0	0.12	4	0	11	90.36
Jun-21	0	0	0	0	0	0	0
Jul-21	37.87	15.28	66.31	3290	1328	5761	34.81
Aug-21	8.42	4.55	13.16	732	396	1144	26.94
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	23	8.94	40.12	1998	777	3486	35.4
Jun-22	14.85	3.35	32.49	1290	291	2823	51.69
Jul-22	8.11	4.09	12.49	705	356	1085	27.3
Aug-22	14.02	6.05	22.39	1219	526	1946	29.7
Sep-22	0.17	0	0.44	15	0	39	73.33
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.148 Manx shearwater design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0.07	0	0.21	13	0	36	94.26
<b>May-21</b>	0.02	0	0.06	4	0	11	88.41
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	40.86	22.95	61.61	7096	3986	10698	23.92
<b>Aug-21</b>	18.16	11.05	27.18	3154	1920	4720	23.79
<b>Sep-21</b>	0.04	0	0.12	7	0	21	91.34
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.08	0	0.18	14	0	32	60.54
<b>May-22</b>	18.57	10.12	29.06	3225	1758	5047	26.07
<b>Jun-22</b>	13.35	3.71	25.34	2319	645	4400	44.23
<b>Jul-22</b>	8.71	5.03	12.96	1513	874	2250	23.32
<b>Aug-22</b>	12.38	6.89	17.84	2150	1197	3098	22.23
<b>Sep-22</b>	4.28	0.42	10.97	744	73	1905	74.01
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

*Table 5.149 Manx shearwater design-based density and abundance estimates of birds **in flight** at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0.02	0	0.07	4	0	12	96.62
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	10.31	7.74	13.08	1792	1345	2271	13.36
<b>Aug-21</b>	6.45	4.32	8.75	1121	751	1520	17.8
<b>Sep-21</b>	0.04	0	0.12	8	0	21	94.8
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.02	0	0.07	4	0	12	99.11
<b>May-22</b>	1.99	1.13	2.88	346	197	501	22.58
<b>Jun-22</b>	0.87	0.25	1.61	151	44	280	40.17
<b>Jul-22</b>	1.16	0.38	2.26	202	66	392	42.8
<b>Aug-22</b>	1.9	0.64	3.96	331	111	689	48.53
<b>Sep-22</b>	0.12	0	0.25	21	0	43	55.1
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

*Table 5.150 Manx shearwater design-based density and abundance estimates of birds **on sea** at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0.05	0	0.14	9	0	24	89.37
<b>May-21</b>	0.02	0	0.06	4	0	11	90.66
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	30.41	13.66	50.04	5280	2373	8689	30.72
<b>Aug-21</b>	11.52	6.06	18.81	2000	1053	3267	29.67
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.06	0	0.16	11	0	29	73.62
<b>May-22</b>	16.42	8.26	26.22	2852	1435	4554	27.65
<b>Jun-22</b>	12.24	2.71	25.04	2125	471	4349	46.96
<b>Jul-22</b>	7.37	3.55	11.49	1280	617	1995	26.84
<b>Aug-22</b>	10.01	5.85	14.56	1739	1017	2528	22.67
<b>Sep-22</b>	3.94	0.3	10.68	685	52	1856	78.12
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

*Table 5.151 Manx shearwater design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0.08	0	0.21	25	0	60	66.1
<b>May-21</b>	0.15	0.03	0.32	43	8	92	48.72
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	30.47	16.3	46.94	8699	4654	13401	25.63
<b>Aug-21</b>	13.75	8.62	20.17	3926	2463	5760	21.07
<b>Sep-21</b>	0.03	0	0.07	8	0	21	90.12
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.05	0	0.11	15	0	33	59
<b>May-22</b>	12.95	7.64	19.26	3697	2183	5499	23.26
<b>Jun-22</b>	8.41	2.49	15.93	2403	711	4549	42.3
<b>Jul-22</b>	6.82	3.81	10.23	1948	1088	2921	23.75
<b>Aug-22</b>	11.71	7.02	16.97	3344	2004	4847	22.16
<b>Sep-22</b>	2.75	0.34	7.31	786	98	2087	73.49
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

*Table 5.152 Manx shearwater design-based density and abundance estimates of birds **in flight** at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0.06	0	0.15	17	0	43	74.53
<b>May-21</b>	0.03	0	0.07	8	0	20	65.97
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	8.21	6.15	10.6	2344	1757	3026	13.99
<b>Aug-21</b>	5.28	3.51	7.08	1507	1001	2021	17.8
<b>Sep-21</b>	0.02	0	0.07	8	0	21	95.72
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.01	0	0.04	5	0	12	96.55
<b>May-22</b>	1.47	0.9	2.13	421	256	610	21.3
<b>Jun-22</b>	0.54	0.16	1	155	47	287	40.16
<b>Jul-22</b>	0.84	0.35	1.48	240	100	424	36.85
<b>Aug-22</b>	1.55	0.67	2.84	444	191	811	38
<b>Sep-22</b>	0.08	0.01	0.17	24	4	50	47.22
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

*Table 5.153 Manx shearwater design-based density and abundance estimates of birds on sea at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0.03	0	0.08	9	0	24	93.21
<b>May-21</b>	0.12	0.01	0.28	35	4	80	58.58
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	22.33	9.43	37.74	6376	2692	10775	32.21
<b>Aug-21</b>	8.44	4.73	13.33	2410	1352	3807	26.01
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.04	0	0.09	11	0	27	73.11
<b>May-22</b>	11.27	6.18	17.94	3218	1766	5122	26.74
<b>Jun-22</b>	7.91	2.16	15.56	2259	616	4443	43.46
<b>Jul-22</b>	5.85	3.1	8.91	1672	886	2545	25.17
<b>Aug-22</b>	9.78	5.56	14.62	2793	1587	4173	23.93
<b>Sep-22</b>	2.42	0.23	6.58	693	67	1880	76.51
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0



## 5.18 Puffin

Table 5.154 Puffin design-based density and abundance estimates of birds *in flight and on sea at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.07	0	0.19	7	0	16	85.71
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0.26	0.03	0.54	23	3	47	60.87
Aug-21	0.22	0	0.5	20	0	44	65
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0.01	0	0.03	2	0	3	50
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0.01	0	0.02	1	0	3	100
May-22	0.16	0.03	0.33	15	3	29	53.33
Jun-22	0.02	0	0.06	2	0	6	150
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0.03	0	0.08	3	0	7	100
Nov-22	0.21	0.08	0.37	19	7	33	42.11
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.155 Puffin design-based density and abundance estimates of birds *in flight at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.156 Puffin design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.06	0	0.16	6	0	14	66.37
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0.22	0.03	0.46	20	3	40	49.47
Aug-21	0.19	0	0.43	17	0	38	56.76
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0.01	0	0.03	2	0	3	65.39
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0.01	0	0.02	1	0	3	94.01
May-22	0.14	0.03	0.28	13	3	25	47.43
Jun-22	0.02	0	0.05	2	0	5	90.51
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0.03	0	0.07	3	0	6	70.88
Nov-22	0.18	0.07	0.32	16	6	28	36.6
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

**Table 5.157 Puffin design-based density and abundance estimates of birds *in flight and on sea* at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.05	0.01	0.1	9	1	19	77.78
<b>Apr-21</b>	0.02	0	0.08	5	0	14	120
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0.31	0.15	0.5	56	28	87	35.71
<b>Aug-21</b>	0.16	0.05	0.29	28	9	51	50
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0.02	0.01	0.03	3	2	7	100
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0	0	0.01	1	0	3	100
<b>May-22</b>	0.14	0.02	0.26	24	6	44	54.17
<b>Jun-22</b>	0.01	0	0.03	2	0	6	150
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0.01	0	0.02	2	0	5	100
<b>Oct-22</b>	0.03	0	0.09	7	1	16	85.71
<b>Nov-22</b>	0.17	0.06	0.33	30	9	58	53.33
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

Table 5.158 Puffin design-based density and abundance estimates of birds *in flight at the windfarm site + 2km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.159 Puffin design-based density and abundance estimates of birds **on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.04	0.01	0.09	8	1	16	52.24
<b>Apr-21</b>	0.02	0	0.07	4	0	12	92.79
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0.27	0.13	0.43	48	24	75	28.03
<b>Aug-21</b>	0.14	0.04	0.25	24	8	44	38.48
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0.02	0.01	0.03	3	2	6	37.51
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0	0	0.01	1	0	3	96.67
<b>May-22</b>	0.12	0.02	0.22	21	5	38	42.67
<b>Jun-22</b>	0.01	0	0.03	2	0	5	96.04
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0.01	0	0.02	2	0	4	99.71
<b>Oct-22</b>	0.03	0	0.08	6	1	14	54.65
<b>Nov-22</b>	0.15	0.05	0.28	26	8	50	40.31
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

**Table 5.160 Puffin design-based density and abundance estimates of birds *in flight and on sea* at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.03	0.01	0.08	12	3	22	58.33
<b>Apr-21</b>	0.1	0.01	0.2	29	5	58	58.62
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0.29	0.17	0.43	85	50	123	28.24
<b>Aug-21</b>	0.16	0.06	0.27	45	19	77	40
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0.03	0.01	0.07	9	2	20	66.67
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.06	0	0.13	16	2	38	81.25
<b>May-22</b>	0.12	0.03	0.2	33	12	56	45.45
<b>Jun-22</b>	0.03	0	0.1	12	0	30	91.67
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0.01	0	0.02	3	0	6	100
<b>Oct-22</b>	0.06	0.01	0.09	16	5	29	50
<b>Nov-22</b>	0.14	0.06	0.23	41	16	68	41.46
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

Table 5.161 Puffin design-based density and abundance estimates of birds *in flight at the windfarm site + 4km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0



Table 5.162 Puffin design-based density and abundance estimates of birds **on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0.03	0.01	0.07	10	3	19	44.86
<b>Apr-21</b>	0.09	0.01	0.17	25	4	50	48.61
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0.25	0.15	0.37	73	43	106	22.5
<b>Aug-21</b>	0.14	0.05	0.23	39	16	66	33.22
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0.03	0.01	0.06	8	2	17	50.13
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0.05	0	0.11	14	2	33	58.85
<b>May-22</b>	0.1	0.03	0.17	28	10	48	36.13
<b>Jun-22</b>	0.03	0	0.09	10	0	26	77.37
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0.01	0	0.02	3	0	5	67.35
<b>Oct-22</b>	0.05	0.01	0.08	14	4	25	40.32
<b>Nov-22</b>	0.12	0.05	0.2	35	14	58	32.63
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

## 5.19 Razorbill

Table 5.163 Razorbill design-based density and abundance estimates of birds **in flight and on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	1.65	0.73	2.65	145	64	232	31.03
<b>Apr-21</b>	1.38	0.35	2.7	121	31	234	42.98
<b>May-21</b>	0.17	0.02	0.33	16	2	29	50
<b>Jun-21</b>	0	0	0	1	0	1	100
<b>Jul-21</b>	0.06	0	0.17	6	1	16	100
<b>Aug-21</b>	0.11	0	0.33	11	1	29	100
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	5.34	3.16	7.83	466	276	682	24.03
<b>Nov-21</b>	1.12	0.54	1.82	97	48	160	27.84
<b>Dec-21</b>	0.25	0.02	0.58	24	2	52	58.33
<b>Jan-22</b>	0.15	0	0.42	13	1	37	100
<b>Feb-22</b>	1.98	1	3.04	172	88	265	30.81
<b>Mar-22</b>	1.84	0.92	2.89	161	81	253	29.19
<b>Apr-22</b>	0.78	0.22	1.41	68	20	122	44.12
<b>May-22</b>	0.64	0.27	1.06	56	23	93	37.5
<b>Jun-22</b>	0.21	0.07	0.38	18	6	33	44.44
<b>Jul-22</b>	0.11	0	0.34	11	1	29	100
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	1	0	1	100
<b>Oct-22</b>	3.48	0.87	7.81	304	76	679	63.82
<b>Nov-22</b>	1.08	0.55	1.58	94	49	138	29.79
<b>Dec-22</b>	6.97	3.63	10.87	607	317	946	26.85
<b>Feb-23 (1)</b>	1.01	0.28	1.89	89	24	165	47.19
<b>Feb-23 (2)</b>	2.29	1.36	3.35	199	119	292	26.13

Table 5.164 Razorbill design-based density and abundance estimates of birds *in flight at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.09	0	0.27	8	0	24	96.76
Apr-21	0.23	0.04	0.46	21	4	40	48
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0.50	0.09	0.96	44	8	84	45.79
Nov-21	0.09	0	0.27	8	0	24	91.1
Dec-21	0.01	0	0.04	2	0	4	93.51
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0.08	0	0.19	7	0	17	64.23
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0.09	0	0.22	8	0	19	60.78
Nov-22	0	0	0	0	0	0	0
Dec-22	0.52	0.12	1.06	46	11	93	48.15
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.165 Razorbill design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	1.28	0.6	1.95	112	52	170	26.79
<b>Apr-21</b>	0.94	0.25	1.83	82	22	159	43.89
<b>May-21</b>	0.14	0.02	0.27	13	2	24	42.45
<b>Jun-21</b>	0	0	0	1	0	1	89.72
<b>Jul-21</b>	0.05	0	0.14	5	1	13	87.27
<b>Aug-21</b>	0.09	0	0.27	9	1	24	92.12
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	3.96	2.51	5.62	345	219	489	20.69
<b>Nov-21</b>	0.84	0.44	1.27	73	39	111	26.19
<b>Dec-21</b>	0.2	0.02	0.44	18	2	39	56.26
<b>Jan-22</b>	0.12	0	0.34	11	1	30	82.74
<b>Feb-22</b>	1.62	0.82	2.49	141	72	217	26.77
<b>Mar-22</b>	1.44	0.75	2.21	126	66	193	26.9
<b>Apr-22</b>	0.64	0.18	1.15	56	16	100	39.58
<b>May-22</b>	0.52	0.22	0.87	46	19	76	32.5
<b>Jun-22</b>	0.17	0.06	0.31	15	5	27	38.02
<b>Jul-22</b>	0.09	0	0.28	9	1	24	91.47
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	1	0	1	92.69
<b>Oct-22</b>	2.77	0.71	6.21	242	62	540	56.74
<b>Nov-22</b>	0.88	0.45	1.29	77	40	113	24.9
<b>Dec-22</b>	5.28	2.87	8.03	459	250	698	24.82
<b>Feb-23 (1)</b>	0.83	0.23	1.55	73	20	135	40.58
<b>Feb-23 (2)</b>	1.87	1.11	2.74	163	97	239	22.6

Table 5.166 Razorbill design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	2.04	1.09	3.24	354	189	564	30.79
<b>Apr-21</b>	1.56	0.66	2.67	273	115	463	34.07
<b>May-21</b>	0.09	0.01	0.17	16	2	29	50
<b>Jun-21</b>	0.02	0	0.09	5	0	15	120
<b>Jul-21</b>	0.11	0	0.24	19	1	41	47.37
<b>Aug-21</b>	0.06	0	0.17	11	1	29	100
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	4.41	2.79	6.18	769	487	1072	20.55
<b>Nov-21</b>	1.63	0.75	2.82	283	131	491	34.63
<b>Dec-21</b>	0.27	0.09	0.48	48	15	85	43.75
<b>Jan-22</b>	0.33	0.1	0.57	57	17	101	47.37
<b>Feb-22</b>	1.88	1.19	2.61	328	207	453	22.26
<b>Mar-22</b>	1.78	0.99	2.64	310	172	459	24.52
<b>Apr-22</b>	1.11	0.51	1.78	193	89	310	34.2
<b>May-22</b>	0.78	0.48	1.16	136	83	202	25.74
<b>Jun-22</b>	1.38	0.1	3.74	240	17	650	92.08
<b>Jul-22</b>	0.2	0.05	0.38	35	10	66	51.43
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	1	0	1	100
<b>Oct-22</b>	3.57	1.56	6.22	620	271	1082	38.06
<b>Nov-22</b>	0.92	0.46	1.45	160	81	253	33.75
<b>Dec-22</b>	5.89	3.92	8.13	1025	680	1413	18.54
<b>Feb-23 (1)</b>	0.89	0.49	1.31	154	84	227	27.27
<b>Feb-23 (2)</b>	2.32	1.39	3.45	405	242	599	25.68

Table 5.167 Razorbill design-based density and abundance estimates of birds *in flight at the windfarm site + 2km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.07	0	0.18	13	0	32	68.92
Apr-21	0.12	0	0.25	21	0	43	51.34
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0.02	0	0.07	4	0	12	96.41
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0.32	0.09	0.59	56	16	103	41.45
Nov-21	0.05	0	0.14	9	0	25	93.13
Dec-21	0.01	0	0.02	2	0	4	98.61
Jan-22	0	0	0	0	0	0	0
Feb-22	0.02	0	0.07	4	0	12	98.03
Mar-22	0.06	0	0.13	12	0	23	50.33
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0.04	0	0.11	8	0	20	64.14
Nov-22	0	0	0	0	0	0	0
Dec-22	0.43	0.19	0.71	75	33	124	31.34
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.168 Razorbill design-based density and abundance estimates of birds **on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	1.61	0.89	2.5	279	155	435	26.53
<b>Apr-21</b>	1.18	0.54	1.98	206	94	344	32.23
<b>May-21</b>	0.07	0.01	0.14	13	2	24	45.3
<b>Jun-21</b>	0.02	0	0.07	4	0	12	92.42
<b>Jul-21</b>	0.07	0	0.14	12	1	24	48.53
<b>Aug-21</b>	0.05	0	0.14	9	1	24	93.13
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	3.35	2.21	4.57	583	385	793	18.05
<b>Nov-21</b>	1.29	0.61	2.19	224	107	381	31.44
<b>Dec-21</b>	0.21	0.07	0.38	38	12	66	37.66
<b>Jan-22</b>	0.27	0.08	0.47	47	14	83	38.56
<b>Feb-22</b>	1.52	0.97	2.08	265	169	361	18.6
<b>Mar-22</b>	1.41	0.81	2.05	244	141	357	22.12
<b>Apr-22</b>	0.91	0.42	1.46	158	73	254	29.57
<b>May-22</b>	0.64	0.39	0.95	111	68	165	22.03
<b>Jun-22</b>	1.13	0.08	3.06	196	14	532	82.3
<b>Jul-22</b>	0.16	0.04	0.31	29	8	54	43.48
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	1	0	1	94.14
<b>Oct-22</b>	2.89	1.28	5	501	222	869	33.11
<b>Nov-22</b>	0.75	0.38	1.19	131	66	207	28.85
<b>Dec-22</b>	4.47	3.05	6.07	777	529	1055	17.23
<b>Feb-23 (1)</b>	0.73	0.4	1.07	126	69	186	23.71
<b>Feb-23 (2)</b>	1.9	1.14	2.82	331	198	490	22.67

Table 5.169 Razorbill design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	2.58	1.41	4.13	736	403	1181	31.93
<b>Apr-21</b>	1.22	0.53	2.12	350	150	606	33.43
<b>May-21</b>	0.11	0.04	0.21	32	11	62	34.38
<b>Jun-21</b>	0.03	0	0.1	12	0	29	58.33
<b>Jul-21</b>	0.13	0.05	0.25	40	15	73	40
<b>Aug-21</b>	0.07	0	0.17	21	1	49	76.19
<b>Sep-21</b>	0.01	0	0.04	9	0	24	111.11
<b>Oct-21</b>	3.23	1.94	4.71	924	555	1344	22.62
<b>Nov-21</b>	1.65	0.95	2.48	471	272	710	25.05
<b>Dec-21</b>	0.44	0.24	0.66	126	70	192	26.19
<b>Jan-22</b>	0.57	0.22	1.05	164	64	299	42.07
<b>Feb-22</b>	1.83	1.28	2.39	524	367	683	17.18
<b>Mar-22</b>	1.84	1.23	2.46	525	354	706	18.86
<b>Apr-22</b>	0.93	0.51	1.37	265	147	392	27.92
<b>May-22</b>	0.61	0.39	0.84	175	111	242	22.86
<b>Jun-22</b>	0.89	0.1	2.31	255	31	660	84.31
<b>Jul-22</b>	0.12	0.04	0.22	35	10	65	51.43
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	1	0	1	100
<b>Oct-22</b>	2.81	1.53	4.47	799	435	1275	32.29
<b>Nov-22</b>	0.86	0.44	1.3	244	127	373	26.64
<b>Dec-22</b>	4.48	3.04	5.96	1282	868	1702	17.63
<b>Feb-23 (1)</b>	1.15	0.68	1.68	330	197	482	23.64
<b>Feb-23 (2)</b>	2.73	1.89	3.68	780	543	1050	19.36



Table 5.170 Razorbill design-based density and abundance estimates of birds *in flight at the windfarm site + 4km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0.07	0	0.19	20	0	55	81.41
Apr-21	0.08	0	0.19	24	0	55	57.22
May-21	0.01	0	0.05	5	0	16	99.99
Jun-21	0.01	0	0.04	5	0	12	92.94
Jul-21	0.01	0	0.04	5	0	12	95.78
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0.21	0.07	0.38	60	20	108	39.19
Nov-21	0.07	0.01	0.13	19	4	38	47.32
Dec-21	0.02	0	0.05	6	0	15	78.19
Jan-22	0	0	0	0	0	0	0
Feb-22	0.01	0	0.04	5	0	12	97.76
Mar-22	0.04	0	0.08	12	0	24	52.46
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0.08	0.01	0.14	22	4	41	42.32
Nov-22	0.03	0	0.07	8	0	20	67.62
Dec-22	0.26	0.13	0.45	76	37	129	30.68
Feb-23 (1)	0.03	0	0.08	9	0	24	96.98
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.171 Razorbill design-based density and abundance estimates of birds **on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	2.05	1.15	3.22	586	330	921	26.72
<b>Apr-21</b>	0.93	0.43	1.58	267	123	451	31.48
<b>May-21</b>	0.08	0.03	0.13	22	9	38	34.41
<b>Jun-21</b>	0.02	0	0.05	6	0	14	77.5
<b>Jul-21</b>	0.1	0.04	0.17	29	12	50	35.14
<b>Aug-21</b>	0.06	0	0.14	17	1	40	64.63
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	2.47	1.53	3.54	707	438	1011	20.37
<b>Nov-21</b>	1.29	0.77	1.92	370	219	550	22.99
<b>Dec-21</b>	0.34	0.2	0.5	98	57	145	24.04
<b>Jan-22</b>	0.47	0.18	0.86	134	52	245	35.93
<b>Feb-22</b>	1.49	1.05	1.92	425	300	549	15.24
<b>Mar-22</b>	1.47	1.01	1.95	420	290	558	16.17
<b>Apr-22</b>	0.76	0.42	1.12	217	120	321	24.2
<b>May-22</b>	0.5	0.32	0.69	143	91	198	19.37
<b>Jun-22</b>	0.73	0.08	1.89	209	25	540	74.25
<b>Jul-22</b>	0.1	0.03	0.18	29	8	53	42.61
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	1	1	1	48.44
<b>Oct-22</b>	2.23	1.24	3.54	636	353	1010	27.41
<b>Nov-22</b>	0.68	0.36	1.01	193	104	289	24.58
<b>Dec-22</b>	3.45	2.38	4.51	987	680	1287	16.13
<b>Feb-23 (1)</b>	0.92	0.56	1.31	263	161	375	20.9
<b>Feb-23 (2)</b>	2.23	1.55	3.01	638	444	859	16.62

## 5.20 Red-throated diver

Table 5.172 Red-throated diver design-based density and abundance estimates of birds *in flight and on sea at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0.04	0	0.13	4	0	12	91.05
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0.05	0	0.14	4	0	12	95.6
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0.05	0	0.13	4	0	12	93.64
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.173 Red-throated diver design-based density and abundance estimates of birds *in flight* at the windfarm site (LCI = lower 95% confidence interval, UCI = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0.04	0	0.13	4	0	12	94.2
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.174 Red-throated diver design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0.05	0	0.13	4	0	12	92.55
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0.05	0	0.13	5	0	12	89.26
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

**Table 5.175 Red-throated diver design-based density and abundance estimates of birds *in flight* and on sea at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0.02	0	0.07	5	0	12	91.2
Jan-22	0	0	0	0	0	0	0
Feb-22	0.02	0	0.07	4	0	12	94.36
Mar-22	0.02	0	0.07	4	0	12	96.5
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0.02	0	0.07	4	0	12	97.75
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

**Table 5.176 Red-throated diver design-based density and abundance estimates of birds *in flight* at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = Upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0.02	0	0.07	5	0	12	94.43
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.177 Red-throated diver design-based density and abundance estimates of birds on sea at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = Upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0	0	0	0	0	0	0
<b>Oct-21</b>	0	0	0	0	0	0	0
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0.02	0	0.07	5	0	12	88.1
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0.02	0	0.07	5	0	12	92.87
<b>Mar-22</b>	0.02	0	0.07	4	0	12	95.41
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0	0	0	0	0	0	0
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0	0	0	0	0	0	0
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0	0	0	0	0	0	0
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0



**Table 5.178 Red-throated diver design-based density and abundance estimates of birds *in flight* and on sea at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = Upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0.01	0	0.04	5	0	12	92.19
Dec-21	0.04	0	0.1	12	0	28	70.78
Jan-22	0	0	0	0	0	0	0
Feb-22	0.01	0	0.04	4	0	12	93.63
Mar-22	0.03	0	0.07	8	0	20	64.99
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0.04	0	0.09	12	0	27	54.78
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.179 Red-throated diver design-based density and abundance estimates of birds in flight at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = Upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0.01	0	0.04	4	0	12	96.45
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.180 Red-throated diver design-based density and abundance estimates of birds on sea at the windfarm site + 4km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0.01	0	0.04	5	0	12	96.3
Dec-21	0.04	0	0.11	13	0	32	71.86
Jan-22	0	0	0	0	0	0	0
Feb-22	0.01	0	0.04	5	0	12	94.5
Mar-22	0.03	0	0.07	9	0	20	65.01
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0.03	0	0.07	8	0	20	69.56
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

**Table 5.181 Red-throated diver design-based density and abundance estimates of birds *in flight and on sea at the windfarm site + 10km buffer* (LCL = lower 95% confidence interval, UCL = Upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0.03	0	0.08	8	0	20	65.8
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0.03	0	0.08	8	0	20	66.54
Dec-21	0.2	0.06	0.36	51	16	90	38.03
Jan-22	0	0	0	0	0	0	0
Feb-22	0.03	0	0.08	9	0	20	68.45
Mar-22	0.26	0.1	0.46	64	24	116	36.21
Apr-22	0	0	0	0	0	0	0
May-22	0.02	0	0.05	5	0	13	102.73
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0.02	0	0.05	5	0	13	94.96
Dec-22	0.02	0	0.05	5	0	12	95.78
Feb-23 (1)	0.09	0	0.23	24	0	57	65.36
Feb-23 (2)	0.1	0.02	0.19	24	4	49	49.4

**Table 5.182 Red-throated diver design-based density and abundance estimates of birds *in flight* at the windfarm site + 10km buffer (LCL = lower 95% confidence interval, UCL = Upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0.02	0	0.05	5	0	13	94.5
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

**Table 5.183 Red-throated diver design-based density and abundance estimates of birds on sea at the windfarm site + 10km buffer (LCL = lower 95% confidence interval, UCL = Upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0.03	0	0.08	9	0	20	61.58
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0.03	0	0.08	9	0	20	65.83
Dec-21	0.21	0.06	0.39	53	16	97	39.4
Jan-22	0	0	0	0	0	0	0
Feb-22	0.03	0	0.08	8	0	20	65.75
Mar-22	0.25	0.11	0.46	64	27	116	35.74
Apr-22	0	0	0	0	0	0	0
May-22	0.02	0	0.05	5	0	12	95.46
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0.02	0	0.05	5	0	12	92.6
Feb-23 (1)	0.09	0	0.24	24	0	60	64.35
Feb-23 (2)	0.09	0.02	0.19	24	4	49	49.36

## 5.21 Sandwich tern

Table 5.184 Sandwich tern design-based density and abundance estimates of birds *in flight and on sea at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0.40	0.00	0.87	35	0	76	55.38
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0.13	0	0.32	12	0	28	65.58
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.185 Sandwich tern design-based density and abundance estimates of birds *in flight at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0.41	0	0.96	36	0	84	60.12
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0.13	0	0.32	12	0	28	65.96
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0



Table 5.186 Sandwich tern design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.187 Sandwich tern design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0.24	0	0.56	42	0	98	60.7
<b>Oct-21</b>	0.07	0	0.21	13	0	36	99.23
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0	0	0	0	0	0	0
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0.05	0	0.14	8	0	24	93.97
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0.07	0	0.17	12	0	31	66.79
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

*Table 5.188 Sandwich tern design-based density and abundance estimates of birds **in flight at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0.24	0	0.56	42	0	98	58.28
<b>Oct-21</b>	0.07	0	0.21	13	0	37	94.61
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0	0	0	0	0	0	0
<b>Jun-22</b>	0	0	0	0	0	0	0
<b>Jul-22</b>	0.04	0	0.13	8	0	24	94.07
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0.07	0	0.18	12	0	31	68.75
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

*Table 5.189 Sandwich tern design-based density and abundance estimates of birds **on sea at the windfarm site + 2km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.190 Sandwich tern design-based density and abundance estimates of birds **in flight and on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
<b>Mar-21</b>	0	0	0	0	0	0	0
<b>Apr-21</b>	0	0	0	0	0	0	0
<b>May-21</b>	0	0	0	0	0	0	0
<b>Jun-21</b>	0	0	0	0	0	0	0
<b>Jul-21</b>	0	0	0	0	0	0	0
<b>Aug-21</b>	0	0	0	0	0	0	0
<b>Sep-21</b>	0.15	0	0.35	43	0	99	58.7
<b>Oct-21</b>	0.04	0	0.13	13	0	36	95.63
<b>Nov-21</b>	0	0	0	0	0	0	0
<b>Dec-21</b>	0	0	0	0	0	0	0
<b>Jan-22</b>	0	0	0	0	0	0	0
<b>Feb-22</b>	0	0	0	0	0	0	0
<b>Mar-22</b>	0	0	0	0	0	0	0
<b>Apr-22</b>	0	0	0	0	0	0	0
<b>May-22</b>	0	0	0	0	0	0	0
<b>Jun-22</b>	0.04	0	0.04	4	0	12	101.96
<b>Jul-22</b>	0.04	0	0.11	9	0	31	93.16
<b>Aug-22</b>	0	0	0	0	0	0	0
<b>Sep-22</b>	0.04	0	0.12	16	0	36	54.12
<b>Oct-22</b>	0	0	0	0	0	0	0
<b>Nov-22</b>	0	0	0	0	0	0	0
<b>Dec-22</b>	0	0	0	0	0	0	0
<b>Feb-23 (1)</b>	0	0	0	0	0	0	0
<b>Feb-23 (2)</b>	0	0	0	0	0	0	0

Table 5.191 Sandwich tern design-based density and abundance estimates of birds *in flight at the windfarm site + 4km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0.15	0	0.35	43	0	101	60.11
Oct-21	0.04	0	0.13	12	0	36	97.6
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0.04	0	0.04	4	0	12	95.59
Jul-22	0.04	0	0.08	8	0	24	95.23
Aug-22	0	0	0	0	0	0	0
Sep-22	0.04	0	0.12	17	0	36	55.12
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.192 Sandwich tern design-based density and abundance estimates of birds **on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

## 5.22 Shag

Table 5.193 Shag design-based density and abundance estimates of birds **in flight and on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0



Table 5.194 Shag design-based density and abundance estimates of birds *in flight at the windfarm site* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.195 Shag design-based density and abundance estimates of birds **on sea at the windfarm site** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

**Table 5.196 Shag design-based density and abundance estimates of birds *in flight and on sea at the windfarm site + 2km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0.05	0	0.14	8	0	24	92.91
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.197 Shag design-based density and abundance estimates of birds in flight at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

*Table 5.198 Shag design-based density and abundance estimates of birds on sea at the windfarm site + 2km buffer (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)*

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0.05	0	0.14	9	0	24	93.69
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

**Table 5.199 Shag design-based density and abundance estimates of birds *in flight and on sea at the windfarm site + 4km buffer* (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)**

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0.03	0	0.08	8	0	24	100.59
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.200 Shag design-based density and abundance estimates of birds **in flight at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0	0	0	0	0	0	0
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0

Table 5.201 Shag design-based density and abundance estimates of birds **on sea at the windfarm site + 4km buffer** (LCL = lower 95% confidence interval, UCL = upper 95% confidence interval, CV = % coefficient of variation)

Survey	Density			Abundance			CV %
	Mean	LCL	UCL	Mean	LCL	UCL	
Mar-21	0	0	0	0	0	0	0
Apr-21	0	0	0	0	0	0	0
May-21	0	0	0	0	0	0	0
Jun-21	0	0	0	0	0	0	0
Jul-21	0	0	0	0	0	0	0
Aug-21	0	0	0	0	0	0	0
Sep-21	0	0	0	0	0	0	0
Oct-21	0	0	0	0	0	0	0
Nov-21	0	0	0	0	0	0	0
Dec-21	0	0	0	0	0	0	0
Jan-22	0	0	0	0	0	0	0
Feb-22	0	0	0	0	0	0	0
Mar-22	0	0	0	0	0	0	0
Apr-22	0	0	0	0	0	0	0
May-22	0	0	0	0	0	0	0
Jun-22	0	0	0	0	0	0	0
Jul-22	0	0	0	0	0	0	0
Aug-22	0.03	0	0.08	9	0	24	93.37
Sep-22	0	0	0	0	0	0	0
Oct-22	0	0	0	0	0	0	0
Nov-22	0	0	0	0	0	0	0
Dec-22	0	0	0	0	0	0	0
Feb-23 (1)	0	0	0	0	0	0	0
Feb-23 (2)	0	0	0	0	0	0	0



## 6 Annex 2: Breeding season apportioning for all colonies

Table 6.1 Apportioning of *lesser black-backed gull* present in the windfarm site to *all breeding colonies* with connectivity

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Bowland Fells SPA</b>	Yes	2018	29254	69.199	4788.50	2.443	1.9884	39.69%
<b>Ribble and Alt Estuaries SPA</b>	Yes	2021	8978	43.66	1906.20	2.743	1.7210	34.36%
<b>Morecambe Bay and Duddon Estuary SPA</b>	Yes	1996/2018/2023	1786	47.552	2261.19	2.545	0.2679	5.35%
<b>Lambay Island SPA</b>	Yes	2010	952	165.171	27281.46	2.340	0.0109	0.22%
<b>Ailsa Craig SPA</b>	Yes	2019	378	203.904	41576.84	2.259	0.0027	0.05%
<b>Puffin Island SPA</b>	No	2017	1052	61.039	3725.76	2.773	0.1043	2.08%
<b>Lough Neagh and Lough Beg SPA</b>	No	2016/2018/2021/2022	5521	206.603	42684.80	2.004	0.0345	0.69%
<b>Anglesey Terns/Morwenoliaid Ynys Môn SPA</b>	No	2023	280	79.729	6356.71	2.618	0.0154	0.31%
<b>Strangford Lough SPA</b>	No	2023	586	157.744	24883.17	2.318	0.0073	0.15%
<b>Aberdaron Coast and Bardsey Island SPA</b>	No	2019	328	155.336	24129.27	2.187	0.0040	0.08%
<b>The Dee Estuary SPA</b>	No	2013/2019	8	56.471	3188.97	2.931	0.0010	0.02%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Loughshinny to Killiney (Dalkey Islands SPA)</b>	No	1999/2016	72	176.119	31017.90	2.276	0.0007	0.01%
<b>Ireland's Eye SPA</b>	No	2015	4	170.319	29008.56	2.316	0.0000	0.00%
<b>Carlingford Lough SPA</b>	No	2003/2021/2022	4	166.728	27798.23	2.218	0.0000	0.00%
<b>Skerries Islands SPA</b>	No	2010	2	166.664	27776.89	2.318	0.0000	0.00%
<b>Outer Ards SPA</b>	No	2020/2022	2	175.897	30939.75	2.272	0.0000	0.00%
<b>Larne Lough SPA</b>	No	2019	0	202.678	41078.37	2.157	0.0000	0.00%
<b>Barrow-in-Furness</b>	N/A	2010/2019/2022	2762	43.134	1860.54	2.572	0.5086	10.15%
<b>Gloucester City</b>	N/A	2002/2009	6390	232.309	53967.47	3.125	0.0493	0.98%
<b>South Solway</b>	N/A	2009/2023	1436	117.88	13895.69	2.237	0.0308	0.61%
<b>Haverigg and Millom</b>	N/A	2013/2019	184	48.575	2359.53	2.555	0.0265	0.53%
<b>Gloucestershire Urban Gulls</b>	N/A	2000/2011/2012	2642	220.975	48829.95	3.084	0.0222	0.44%
<b>Sellafield</b>	N/A	2009	300	70.378	4953.06	2.518	0.0203	0.41%
<b>Inland Gwynedd</b>	N/A	2000/2018/2019/2023	172	57.232	3275.50	2.728	0.0191	0.38%
<b>Almerness Point</b>	N/A	2021	746	117.814	13880.14	2.411	0.0173	0.34%
<b>Askam-in-Furness</b>	N/A	2019	84	50.315	2531.60	2.530	0.0112	0.22%
<b>N.Yorks Inland Gulls</b>	N/A	2018	372	105.119	11050.00	2.362	0.0106	0.21%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Heysham Power Station</b>	N/A	2000	70	50.833	2583.99	2.509	0.0091	0.18%
<b>Worcester City Centre</b>	N/A	2005	744	200.124	40049.62	3.496	0.0087	0.17%
<b>Seaforth Nature Reserve and Liverpool City</b>	N/A	1994/2019	66	57.817	3342.81	2.886	0.0076	0.15%
<b>Glasgow</b>	N/A	1993/1994/2001/2019	1342	230.044	52920.24	2.233	0.0075	0.15%
<b>Antrim Town</b>	N/A	2016	1200	217.073	47120.69	2.026	0.0069	0.14%
<b>Manchester Ship Canal</b>	N/A	2020/2022	100	80.912	6546.75	2.841	0.0058	0.12%
<b>Penrith</b>	N/A	2023	254	116.645	13606.06	2.207	0.0055	0.11%
<b>Maryport</b>	N/A	2013	190	105.148	11056.10	2.387	0.0055	0.11%
<b>Walney Urban Gulls</b>	N/A	2019	22	39.652	1572.28	2.609	0.0049	0.10%
<b>Whitehaven (Buildings)</b>	N/A	2018	106	85.462	7303.75	2.483	0.0048	0.10%
<b>Fleetwood</b>	N/A	2019	18	39.175	1534.68	2.646	0.0041	0.08%
<b>Carlisle</b>	N/A	2009/2013	360	160.015	25604.80	2.197	0.0041	0.08%
<b>Belfast</b>	N/A	2001/2019	522	198.661	39466.19	2.169	0.0038	0.08%
<b>Cardigan Island and Mwnt to Carreg Lydan</b>	N/A	2018/2019	652	224.378	50345.49	1.992	0.0034	0.07%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>South Island</b>	N/A	1996/1999/2017	64	88.287	7794.59	2.833	0.0031	0.06%
<b>Thornton-Clevelys</b>	N/A	1994	12	37.763	1426.04	2.679	0.0030	0.06%
<b>Blackpool</b>	N/A	2001	10	36.27	1315.51	2.712	0.0027	0.05%
<b>East Island</b>	N/A	1999/2017	34	70.804	5013.21	2.847	0.0026	0.05%
<b>Workington</b>	N/A	2009/2019	64	94.608	8950.67	2.435	0.0023	0.05%
<b>Bangor and Caernarfon</b>	N/A	2019	34	72.472	5252.19	2.620	0.0023	0.05%
<b>Haweswater RSPB</b>	N/A	2018	70	97.096	9427.63	2.261	0.0022	0.04%
<b>Denbeighshire Lakes</b>	N/A	2016	36	78.548	6169.79	2.854	0.0022	0.04%
<b>North Island</b>	N/A	1999/2017	42	86.601	7499.73	2.725	0.0020	0.04%
<b>Mitcheledean</b>	N/A	2010	232	226.191	51162.37	2.901	0.0018	0.03%
<b>Rhoscolyn to Trearddur</b>	N/A	2016	52	101.693	10341.47	2.532	0.0017	0.03%
<b>Salterhall Quarry</b>	N/A	2018	36	83.441	6962.40	2.455	0.0017	0.03%
<b>Tyburn/Bromford</b>	N/A	2001	60	123.873	15344.52	2.909	0.0015	0.03%
<b>Arran</b>	N/A	2016	250	223.465	49936.61	2.237	0.0015	0.03%
<b>Hereford City</b>	N/A	1994/2019	134	201.624	40652.24	2.859	0.0013	0.03%
<b>Birmingham</b>	N/A	2001	80	184.07	33881.76	3.971	0.0012	0.02%
<b>Rhyl</b>	N/A	2019	8	52.935	2802.11	2.952	0.0011	0.02%
<b>Barden</b>	N/A	2019	40	107.218	11495.70	2.387	0.0011	0.02%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
Llanddulas Quarries	N/A	2002/2017	8	56.278	3167.21	2.902	0.0010	0.02%
Porth Llanlleiana to Porth Eilian	N/A	2016	12	67.769	4592.64	2.767	0.0010	0.02%
Point Lynas to Trwyn Du	N/A	2016	10	64.73	4189.97	2.763	0.0009	0.02%
Prestatyn	N/A	2019	6	51.991	2703.06	2.955	0.0009	0.02%
Cleator Moor	N/A	2013	16	81.94	6714.16	2.478	0.0008	0.02%
Paisley	N/A	1994/2019	138	233.241	54401.36	2.241	0.0008	0.02%
Windermere	N/A	1999/2005/2009	12	71.738	5146.34	2.374	0.0007	0.01%
Ulverston	N/A	2013	6	55.994	3135.33	2.484	0.0006	0.01%
Talla Res.	N/A	2018	74	188.338	35471.20	2.170	0.0006	0.01%
Blaenau Gwent	N/A	2002/2017	92	223.92	50140.17	2.275	0.0006	0.01%
South Stack	N/A	2016/2022	14	93.85	8807.82	2.565	0.0005	0.01%
Greenside Quarry, Kendal	N/A	2023	11	79.581	6333.14	2.316	0.0005	0.01%
Carstairs Junction	N/A	2002	80	212.114	44992.35	2.178	0.0005	0.01%
Fairburn Ings, Mickletown Ings, Methley GP	N/A	2022/2023	30	150.609	22683.07	2.676	0.0005	0.01%
Derwent Water	N/A	2019	12	94.047	8844.84	2.340	0.0004	0.01%
Belmont Reservoir	N/A	2023	6	72.731	5289.80	2.697	0.0004	0.01%
Idle Valley	N/A	2016	34	180.715	32657.91	2.794	0.0004	0.01%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
Fleet Bay	N/A	2018	16	121.804	14836.21	2.482	0.0004	0.01%
Carmel Head South	N/A	2001/2016	6	80.187	6429.95	2.696	0.0003	0.01%
Gun's Island - Northern Island	N/A	2022	20	141.761	20096.18	2.391	0.0003	0.01%
Thirlmere	N/A	2019	8	89.251	7965.74	2.324	0.0003	0.01%
Meikle Ross & Little Ross	N/A	2018	12	114.102	13019.27	2.483	0.0003	0.01%
Newport to Poppit	N/A	1997/2018	62	229.595	52713.86	1.945	0.0003	0.01%
Muck Island	N/A	2022	38	193.474	37432.19	2.172	0.0003	0.01%
Sanda Islands - Kintyre	N/A	2019	46	214.149	45859.79	2.129	0.0003	0.01%
Bellshill	N/A	2000	50	228.307	52124.09	2.201	0.0003	0.01%
Netherton	N/A	2019	2	52.801	2787.95	2.881	0.0003	0.01%
Kinmel Bay	N/A	2019	2	53.65	2878.32	2.947	0.0003	0.01%
Flimby and Risehow	N/A	2009/2019	8	102.17	10438.71	2.399	0.0002	0.00%
Morecambe	N/A	2000	2	55.614	3092.92	2.466	0.0002	0.00%
Bodorgan Head to Abermenai	N/A	2018	8	118.191	13969.11	2.512	0.0002	0.00%
W.Loathian Urban	N/A	1994	30	235.011	55230.17	2.112	0.0002	0.00%
Wigtown Bay Merse and Baldoon	N/A	2019/2021	8	131.891	17395.24	2.481	0.0002	0.00%
Monaghan Lakes	N/A	2000	26	213.859	45735.67	1.984	0.0002	0.00%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
Lillyhall	N/A	2019	4	95.976	9211.39	2.437	0.0001	0.00%
West Island	N/A	1998/2017	4	108.007	11665.51	2.811	0.0001	0.00%
Shap and Hardendale	N/A	2018/2019/2021	4	97.988	9601.65	2.234	0.0001	0.00%
Starling Knowe to Downan Point	N/A	1999/2018	13	184.907	34190.60	2.360	0.0001	0.00%
Northumberland inland gull colonies	N/A	2000/2018	14	179.55	32238.20	1.918	0.0001	0.00%
Lleyn Peninsula	N/A	2000/2016/2019/2023	10	166.285	27650.70	2.282	0.0001	0.00%
Craig yr Aderyn	N/A	2018	14	204.867	41970.49	2.422	0.0001	0.00%
Dublin City Centre, Skerries and Balbriggan	N/A	1991/2002	12	185.416	34379.09	2.249	0.0001	0.00%
Stocks Reservoir	N/A	2021	2	80.094	6415.05	2.408	0.0001	0.00%
The Maidens	N/A	2000	14	201.864	40749.07	2.137	0.0001	0.00%
Easedale and Stickle Tarns	N/A	2006	2	81.238	6599.61	2.359	0.0001	0.00%
Hereford City, Maylord Orchards	N/A	2019	10	201.195	40479.43	2.866	0.0001	0.00%
Mull of Galloway	N/A	2015	4	126.973	16122.14	2.605	0.0001	0.00%
Killington Reservoir	N/A	2023	2	84.987	7222.79	2.289	0.0001	0.00%
Loch Ryan	N/A	2021	8	189.885	36056.31	2.428	0.0001	0.00%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
Llyn Dinam and Llyn Penrhyn	N/A	2019	2	97.836	9571.88	2.562	0.0001	0.00%
Black Loch	N/A	2021	4	138.163	19089.01	2.499	0.0001	0.00%
Keswick Town	N/A	2018	2	95.11	9045.91	2.332	0.0001	0.00%
Newhouse	N/A	2002	12	228.702	52304.60	2.191	0.0001	0.00%
Kidderminster	N/A	2000	4	180.515	32585.67	3.617	0.0001	0.00%
Newcastle Upon Tyne	N/A	2000	8	183.593	33706.39	1.825	0.0001	0.00%
Marsh Lane Gravel Pit	N/A	2018	4	198.063	39228.95	3.978	0.0001	0.00%
Aberdaron Coast not in SPA	N/A	2011/2016	4	151.481	22946.49	2.229	0.0001	0.00%
Llyn Coed-Y-Dinas	N/A	2018	2	130.966	17152.09	2.923	0.0000	0.00%
Port O'Warren	N/A	2020	2	119.503	14280.97	2.393	0.0000	0.00%
Salford Priors	N/A	2018	4	213.119	45419.71	3.703	0.0000	0.00%
Longnewton Reservoir	N/A	2020	4	163.044	26583.35	1.922	0.0000	0.00%
Bredons Hardwick	N/A	2000	4	220.37	48562.94	3.383	0.0000	0.00%
Willington Gravel Pits	N/A	2018	2	169.907	28868.39	3.778	0.0000	0.00%
Loch Ken	N/A	2019	2	136.945	18753.93	2.383	0.0000	0.00%
Uddingston	N/A	2001	6	229.068	52472.15	2.204	0.0000	0.00%
Siddick	N/A	2019	1	99.465	9893.29	2.418	0.0000	0.00%



Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Barmouth and Fairbourne</b>	N/A	2018	4	199.805	39922.04	2.433	0.0000	0.00%
<b>Dosthill and Middleton Lakes</b>	N/A	2022	2	182.925	33461.56	4.039	0.0000	0.00%
<b>Stourport</b>	N/A	2000	2	183.202	33562.97	3.557	0.0000	0.00%
<b>Doncaster</b>	N/A	2019	2	167.283	27983.60	2.688	0.0000	0.00%
<b>Eaglesham Trs</b>	N/A	2019	4	222.34	49435.08	2.240	0.0000	0.00%
<b>East Antrim Coast</b>	N/A	2021	4	232.786	54189.32	1.968	0.0000	0.00%
<b>Brechfa Pool</b>	N/A	2001	2	196.993	38806.24	2.413	0.0000	0.00%
<b>Friog</b>	N/A	2018	2	199.663	39865.31	2.409	0.0000	0.00%
<b>Aberdyfi</b>	N/A	2018	2	208.257	43370.98	2.370	0.0000	0.00%
<b>Geltsdale</b>	N/A	2022	1	140.999	19880.72	2.095	0.0000	0.00%
<b>Barrhead</b>	N/A	1994	2	229.806	52810.80	2.240	0.0000	0.00%
<b>North Esk Reservoir</b>	N/A	2000	2	226.145	51141.56	2.106	0.0000	0.00%
<b>Megget Reservoir</b>	N/A	2016	1	188.729	35618.64	2.161	0.0000	0.00%
<b>Lincs. Inland GPs</b>	N/A	2018	1	225.578	50885.43	2.451	0.0000	0.00%
<b>Holy Island</b>	N/A	2021	1	235.384	55405.63	2.242	0.0000	0.00%
<b>Beumaris</b>	N/A	2019	0	68.202	4651.51	2.711	0.0000	0.00%
<b>Morecambe Bay</b>	N/A	2019	0	64.749	4192.43	2.401	0.0000	0.00%
<b>Llangrannog to Penpeles (includes</b>	N/A	2018	0	225.709	50944.55	2.024	0.0000	0.00%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Tresaith SSSI and Aberporth)</b>								
<b>Whitfield Lough</b>	N/A	2019	0	142.837	20402.41	2.053	0.0000	0.00%
<b>Portpatrick</b>	N/A	2021	0	157.005	24650.57	2.447	0.0000	0.00%
<b>Rowrah Quarry</b>	N/A	2018	0	85.014	7227.38	2.444	0.0000	0.00%
<b>Rough Firth Merse</b>	N/A	2020	0	121.917	14863.75	2.402	0.0000	0.00%
<b>Crummock Water</b>	N/A	2019	0	86.297	7447.17	2.399	0.0000	0.00%
<b>Willyshaw Rigg</b>	N/A	2019	0	141.018	19886.08	2.055	0.0000	0.00%
<b>Cumnock and Muirkirk</b>	N/A	2021	0	193.16	37310.79	2.233	0.0000	0.00%
<b>Maberry and Ochiltree lochs</b>	N/A	2021	0	155.288	24114.36	2.398	0.0000	0.00%
<b>Loch Moan</b>	N/A	2021	0	164.433	27038.21	2.347	0.0000	0.00%
<b>Penllyn to Gogarth (River Dovey mouth)</b>	N/A	2018	0	208.397	43429.31	2.374	0.0000	0.00%
<b>Aberystwyth - Borth</b>	N/A	2018	0	213.126	45422.69	2.293	0.0000	0.00%
<b>Balgray Reservoir Island</b>	N/A	2019	0	227.597	51800.39	2.241	0.0000	0.00%
<b>New Quay to Lochtyn</b>	N/A	2018	0	220.835	48768.10	2.078	0.0000	0.00%
<b>Allonby</b>	N/A	2013	0	113.522	12887.24	2.349	0.0000	0.00%
<b>Brownber tarn</b>	N/A	2019	0	115.172	13264.59	2.128	0.0000	0.00%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Eldrig Loch</b>	N/A	2021	0	155.418	24154.75	2.427	0.0000	0.00%
<b>Fell Loch</b>	N/A	2021	0	137.949	19029.93	2.495	0.0000	0.00%
<b>Great Orme and Little Orme</b>	N/A	2019	0	53.767	2890.89	2.877	0.0000	0.00%
<b>Greencastle Tarn</b>	N/A	2018	0	128.935	16624.23	2.099	0.0000	0.00%
<b>Hirwaun</b>	N/A	2002	0	228.161	52057.44	2.114	0.0000	0.00%
<b>Llanrhylud - Llansanffraed</b>	N/A	2018	0	217.71	47397.64	2.231	0.0000	0.00%
<b>Loch Dee</b>	N/A	2021	0	153.473	23553.96	2.370	0.0000	0.00%
<b>Loch Trool</b>	N/A	2021	0	156.368	24450.95	2.369	0.0000	0.00%
<b>Maggy's Leap to Newcastle</b>	N/A	2022	0	156.909	24620.43	2.272	0.0000	0.00%
<b>Merthyr Tydfil</b>	N/A	2002	0	226.574	51335.78	2.181	0.0000	0.00%
<b>Mochrum Loch</b>	N/A	2020	0	136.605	18660.93	2.506	0.0000	0.00%
<b>Mull of Kintyre</b>	N/A	2021	0	221.201	48929.88	2.072	0.0000	0.00%
<b>North Mull of Kintyre</b>	N/A	2021	0	221.257	48954.66	2.066	0.0000	0.00%
<b>St Bees Head and Town</b>	N/A	2020	0	77.921	6071.68	2.519	0.0000	0.00%
<b>Stainmore Common</b>	N/A	1999	0	121.475	14756.18	2.099	0.0000	0.00%
<b>Warcop Ranges Tarn</b>	N/A	1999	0	114.773	13172.84	2.141	0.0000	0.00%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Totals</b>	-	-	<b>72320</b>	<b>24694.596</b>	<b>4163085.21</b>	<b>432.045</b>	<b>5.0094</b>	-

Table 6.2 Apportioning of *lesser black-backed gull* present in the windfarm site to *coastal breeding colonies* with connectivity

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
Ribble and Alt Estuaries SPA	Yes	2021	8978	43.66	1906.20	2.743	4.6391	60.94%
Morecambe Bay and Duddon Estuary SPA (Cumbria)	Yes	1996/2018/2023	1786	47.55	2261.19	2.550	0.7233	9.50%
Lambay Island SPA	Yes	2010	952	165.17	27281.46	2.340	0.0293	0.39%
Ailsa Craig SPA	Yes	2019	378	203.90	41576.84	2.259	0.0074	0.10%
Puffin Island SPA	No	2017	1052	61.04	3725.76	2.773	0.2812	3.69%
Anglesey Terns/Morwenoli aid Ynys Môn SPA	No	2023	280	79.73	6356.71	2.618	0.0414	0.54%
Aberdaron Coast and Bardsey Island SPA	No	2019	328	155.34	24129.27	2.187	0.0107	0.14%
The Dee Estuary SPA	No	2013/2019	8	56.47	3188.97	2.931	0.0026	0.03%
Loughshinny to Killiney (Dalkey Islands SPA)	No	1999/2016	72	176.12	31017.90	2.276	0.0019	0.02%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
Ireland's Eye SPA	No	2015	4	170.32	29008.56	2.316	0.0001	0.00%
Carlingford Lough SPA	No	2003/2021/2022	4	166.73	27798.23	2.218	0.0001	0.00%
Skerries Islands SPA	No	2010	2	166.66	27776.89	2.318	0.0001	0.00%
Outer Ards SPA	No	2020/2022	2	175.90	30939.75	2.272	0.0001	0.00%
Larne Lough SPA	No	2019	0	202.68	41078.37	2.157	0.0000	0.00%
Barrow-in-Furness	N/A	2010/2019/2022	2762	43.13	1860.54	2.572	1.3710	18.01%
South Solway	N/A	2009/2023	1436	117.88	13895.69	2.237	0.0830	1.09%
Haverigg and Millom	N/A	2013/2019	184	48.58	2359.53	2.555	0.0716	0.94%
Sellafield	N/A	2009	300	70.38	4953.06	2.518	0.0548	0.72%
Almorness Point	N/A	2021	746	117.81	13880.14	2.411	0.0465	0.61%
Askam-in-Furness	N/A	2019	84	50.32	2531.60	2.530	0.0301	0.40%
Heysham Power Station	N/A	2000	70	50.83	2583.99	2.509	0.0244	0.32%
Seaforth Nature Reserve and Liverpool City	N/A	1994/2019	66	57.82	3342.81	2.886	0.0205	0.27%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Manchester Ship Canal</b>	N/A	2020/2022	100	80.91	6546.75	2.841	0.0156	0.20%
<b>Maryport</b>	N/A	2013	190	105.15	11056.10	2.387	0.0147	0.19%
<b>Walney Urban Gulls</b>	N/A	2019	22	39.65	1572.28	2.609	0.0131	0.17%
<b>Whitehaven (Buildings)</b>	N/A	2018	106	85.46	7303.75	2.483	0.0129	0.17%
<b>Fleetwood</b>	N/A	2019	18	39.18	1534.68	2.646	0.0111	0.15%
<b>Belfast</b>	N/A	2001/2019	522	198.66	39466.19	2.169	0.0103	0.14%
<b>Cardigan Island and Mwnt to Carreg Lydan</b>	N/A	2018/2019	652	224.38	50345.49	1.992	0.0093	0.12%
<b>South Island</b>	N/A	1996/1999/2017	64	88.29	7794.59	2.833	0.0084	0.11%
<b>Thornton-Clevelys</b>	N/A	1994	12	37.76	1426.04	2.679	0.0081	0.11%
<b>Blackpool</b>	N/A	2001	10	36.27	1315.51	2.712	0.0074	0.10%
<b>East Island</b>	N/A	1999/2017	34	70.80	5013.21	2.847	0.0069	0.09%
<b>Workington</b>	N/A	2009/2019	64	94.61	8950.67	2.435	0.0063	0.08%
<b>Bangor and Caernarfon</b>	N/A	2019	34	72.47	5252.19	2.620	0.0061	0.08%
<b>North Island</b>	N/A	1999/2017	42	86.60	7499.73	2.725	0.0055	0.07%
<b>Rhoscolyn to Trearddur</b>	N/A	2016	52	101.69	10341.47	2.532	0.0046	0.06%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Arran</b>	N/A	2016	250	223.47	49936.61	2.237	0.0040	0.05%
<b>Rhyl</b>	N/A	2019	8	52.94	2802.11	2.952	0.0030	0.04%
<b>Llanddulas Quarries</b>	N/A	2002/2017	8	56.28	3167.21	2.902	0.0026	0.03%
<b>Porth Llanlleiana to Porth Eilian</b>	N/A	2016	12	67.77	4592.64	2.767	0.0026	0.03%
<b>Point Lynas to Trwyn Du</b>	N/A	2016	10	64.73	4189.97	2.763	0.0024	0.03%
<b>Prestatyn</b>	N/A	2019	6	51.99	2703.06	2.955	0.0024	0.03%
<b>Ulverston</b>	N/A	2013	6	55.99	3135.33	2.484	0.0017	0.02%
<b>South Stack</b>	N/A	2016/2022	14	93.85	8807.82	2.565	0.0015	0.02%
<b>Fleet Bay</b>	N/A	2018	16	121.80	14836.21	2.482	0.0010	0.01%
<b>Carmel Head South</b>	N/A	2001/2016	6	80.19	6429.95	2.696	0.0009	0.01%
<b>Gun's Island - Northern Island</b>	N/A	2022	20	141.76	20096.18	2.391	0.0009	0.01%
<b>Meikle Ross &amp; Little Ross</b>	N/A	2018	12	114.10	13019.27	2.483	0.0008	0.01%
<b>Newport to Poppit</b>	N/A	1997/2018	62	229.60	52713.86	1.945	0.0008	0.01%
<b>Muck Island</b>	N/A	2022	38	193.47	37432.19	2.172	0.0008	0.01%



Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Sanda Islands - Kintyre</b>	N/A	2019	46	214.15	45859.79	2.129	0.0008	0.01%
<b>Netherton</b>	N/A	2019	2	52.80	2787.95	2.881	0.0007	0.01%
<b>Kinmel Bay</b>	N/A	2019	2	53.65	2878.32	2.947	0.0007	0.01%
<b>Flimby and Risehow</b>	N/A	2009/2019	8	102.17	10438.71	2.399	0.0007	0.01%
<b>Morecambe</b>	N/A	2000	2	55.61	3092.92	2.466	0.0006	0.01%
<b>Bodorgan Head to Abermenai</b>	N/A	2018	8	118.19	13969.11	2.512	0.0005	0.01%
<b>Wigtown Bay Merse and Baldoon</b>	N/A	2019/2021	8	131.89	17395.24	2.481	0.0004	0.01%
<b>Lillyhall</b>	N/A	2019	4	95.98	9211.39	2.437	0.0004	0.00%
<b>West Island</b>	N/A	1998/2017	4	108.01	11665.51	2.811	0.0003	0.00%
<b>Starling Knowe to Downan Point</b>	N/A	1999/2018	13	184.91	34190.60	2.360	0.0003	0.00%
<b>Lleyn Peninsula</b>	N/A	2000/2016/2019/2023	10	166.29	27650.70	2.282	0.0003	0.00%
<b>Dublin City Centre, Skerries and Balbriggan</b>	N/A	1991/2002	12	185.42	34379.09	2.249	0.0003	0.00%
<b>The Maidens</b>	N/A	2000	14	201.86	40749.07	2.137	0.0003	0.00%
<b>Mull of Galloway</b>	N/A	2015	4	126.97	16122.14	2.605	0.0002	0.00%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
Loch Ryan	N/A	2021	8	189.89	36056.31	2.428	0.0002	0.00%
Llyn Dinam and Llyn Penrhyn	N/A	2019	2	97.84	9571.88	2.562	0.0002	0.00%
Aberdaron Coast not in SPA	N/A	2011/2016	4	151.48	22946.49	2.229	0.0001	0.00%
Port O'Warren	N/A	2020	2	119.50	14280.97	2.393	0.0001	0.00%
Siddick	N/A	2019	1	99.47	9893.29	2.418	0.0001	0.00%
Barmouth and Fairbourne	N/A	2018	4	199.81	39922.04	2.433	0.0001	0.00%
East Antrim Coast	N/A	2021	4	232.79	54189.32	1.968	0.0001	0.00%
Friog	N/A	2018	2	199.66	39865.31	2.409	0.0000	0.00%
Aberdyfi	N/A	2018	2	208.26	43370.98	2.370	0.0000	0.00%
Holy Island	N/A	2021	1	235.38	55405.63	2.242	0.0000	0.00%
Beaumaris	N/A	2019	0	68.20	4651.51	2.711	0.0000	0.00%
Morecambe Bay	N/A	2019	0	64.75	4192.43	2.401	0.0000	0.00%
Llangrannog to Penpeles (includes Tresaith SSSI and Aberporth)	N/A	2018	0	225.71	50944.55	2.024	0.0000	0.00%
Portpatrick	N/A	2021	0	157.01	24650.57	2.447	0.0000	0.00%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Rough Firth Merse</b>	N/A	2020	0	121.92	14863.75	2.402	0.0000	0.00%
<b>Penllyn to Gogarth (River Dovey mouth)</b>	N/A	2018	0	208.40	43429.31	2.374	0.0000	0.00%
<b>Aberystwyth - Borth</b>	N/A	2018	0	213.13	45422.69	2.293	0.0000	0.00%
<b>New Quay to Lochtyn</b>	N/A	2018	0	220.84	48768.10	2.078	0.0000	0.00%
<b>Allonby</b>	N/A	2013	0	113.52	12887.24	2.349	0.0000	0.00%
<b>Great Orme and Little Orme</b>	N/A	2019	0	53.77	2890.89	2.877	0.0000	0.00%
<b>Llanrhyslud - Llansanffraed</b>	N/A	2018	0	217.71	47397.64	2.231	0.0000	0.00%
<b>Maggy's Leap to Newcastle</b>	N/A	2022	0	156.91	24620.43	2.272	0.0000	0.00%
<b>Mochrum Loch</b>	N/A	2020	0	136.61	18660.93	2.506	0.0000	0.00%
<b>Mull of Kintyre</b>	N/A	2021	0	221.20	48929.88	2.072	0.0000	0.00%
<b>North Mull of Kintyre</b>	N/A	2021	0	221.26	48954.66	2.066	0.0000	0.00%
<b>St Bees Head and Town</b>	N/A	2020	0	77.92	6071.68	2.519	0.0000	0.00%
<b>Totals</b>	-	-	<b>22051</b>	<b>11348.63</b>	<b>1775963.64</b>	<b>224.250</b>	<b>7.6124</b>	-

Table 6.3 Apportioning of *Manx shearwater* present in the windfarm site to all breeding colonies with connectivity

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfro SPA</b>	Yes	2018	910312	277.61	77066.76	1.466	2.7085	76.54%
<b>Aberdaron Coast and Bardsey Island SPA</b>	Yes	2001	32366	156.67	24544.24	1.480	0.3054	8.63%
<b>Rum SPA</b>	Yes	2001	240000	433.11	187586.00	1.493	0.2988	8.44%
<b>Copeland Islands SPA</b>	Yes	2007	9700	168.21	28294.27	1.467	0.0787	2.22%
<b>Blasket Islands SPA</b>	Yes	2000	39068	611.54	373975.06	1.328	0.0217	0.61%
<b>Puffin Island SPA</b>	Yes	2000	12658	580.47	336943.10	1.330	0.0078	0.22%
<b>St Kilda SPA</b>	Yes	1999	9606	553.82	306711.05	1.478	0.0072	0.20%
<b>Cruagh SPA</b>	Yes	2001	6572	623.30	388506.63	1.349	0.0036	0.10%
<b>Deenish Island and Scariff Island SPA</b>	Yes	2000	4622	570.28	325214.72	1.333	0.0030	0.08%
<b>Skelligs SPA</b>	Yes	2001	1476	581.59	338242.28	1.326	0.0009	0.03%
<b>Treshnish Isles SPA</b>	No	2018	3984	376.76	141945.84	1.478	0.0065	0.18%
<b>Saltee SPA</b>	No	2001/2002	500	280.31	78572.57	1.427	0.0014	0.04%
<b>Isles of Scilly SPA</b>	No	2015/2022	1194	486.12	236308.77	1.446	0.0011	0.03%
<b>High Island, Inishshark and Davillaun SPA</b>	No	2001/2015	1738	615.79	379193.63	1.350	0.0010	0.03%
<b>Ailsa Craig SPA</b>	No	2018	40	204.23	41708.26	1.483	0.0002	0.01%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Canna and Sanday SPA</b>	No	2001	4	439.82	193442.51	1.491	0.0000	0.00%
<b>Fetlar SPA</b>	No	2002	14	997.54	995076.08	1.650	0.0000	0.00%
<b>Forth Islands SPA</b>	No	2015	2	1077.13	1160217.65	1.550	0.0000	0.00%
<b>Foula SPA</b>	No	2001	0	894.46	800060.48	1.626	0.0000	0.00%
<b>Hoy SPA</b>	No	2011/2012	0	759.04	576141.72	1.587	0.0000	0.00%
<b>Magharee Islands SPA</b>	No	2001	0	660.31	436006.65	1.342	0.0000	0.00%
<b>Rathlin Island SPA</b>	No	2021	0	245.00	60024.02	1.458	0.0000	0.00%
<b>Bishop &amp; Clerks and Ramsey</b>	N/A	2022	12450	260.86	68047.94	1.464	0.0419	1.18%
<b>South Island</b>	N/A	2014	848	86.73	7522.79	1.480	0.0261	0.74%
<b>Lundy</b>	N/A	2017	11008	351.21	123350.57	1.487	0.0208	0.59%
<b>Sanda Islands - Kintyre</b>	N/A	2006	600	214.09	45832.39	1.473	0.0030	0.09%
<b>Isle of Eigg (Summer Isles)</b>	N/A	1999	500	424.80	180454.19	1.493	0.0006	0.02%
<b>St Agnes Island</b>	N/A	2022	130	490.97	241053.50	1.446	0.0001	0.00%
<b>Bryher</b>	N/A	2015	78	483.71	233975.36	1.445	0.0001	0.00%
<b>St Martin's Island</b>	N/A	2015	52	480.41	230789.92	1.448	0.0001	0.00%
<b>Inchmarnock Island, Bute</b>	N/A	2002	2	267.14	71361.64	1.490	0.0000	0.00%
<b>Jethou</b>	N/A	1999	10	710.35	504590.02	1.587	0.0000	0.00%
<b>Sark</b>	N/A	1999	10	718.07	515628.83	1.591	0.0000	0.00%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
South West Iona & Soa	N/A	2013	2	353.78	125158.87	1.472	0.0000	0.00%
Cardigan Island and Mwnt to Carreg Lydan	N/A	1999	0	229.50	52667.96	1.483	0.0000	0.00%
Friar Island	N/A	2001	0	618.03	381966.03	1.349	0.0000	0.00%
Islay - West (Port Askaig to Bruichladdich)	N/A	2019	0	304.94	92988.40	1.463	0.0000	0.00%
Yell - East Coast	N/A	1994	0	987.24	974632.95	1.646	0.0000	0.00%
<b>Totals</b>	-	-	<b>1299546</b>	-	<b>11335804</b>	<b>55.756</b>	<b>3.5385</b>	-

Table 6.4 Apportioning of **gannet** present in the windfarm site to all breeding colonies with connectivity

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Ailsa Craig SPA</b>	Yes	2014	66452	203.904	41576.84	1.530	0.6658	50.78%
<b>Grassholm SPA</b>	Yes	2015	72022	276.614	76515.30	1.607	0.4118	31.41%
<b>Saltee Islands SPA</b>	Yes	2013	9444	280.31	78572.57	1.510	0.0494	3.77%
<b>Lambay Island SPA</b>	No	2015	1852	165.171	27281.46	1.583	0.0293	2.23%
<b>Ireland's Eye SPA</b>	No	2015	700	170.319	29008.56	1.577	0.0104	0.79%
<b>Mingulay and Berneray SPA</b>	No	2021	30	427.599	182840.90	1.291	0.0001	0.00%
<b>Monreith Cliffs and Scar Rocks</b>	N/A	2014	4752	122.176	14926.97	1.620	0.1404	10.71%
<b>Porth Llanlleiana to Porth Eilian</b>	N/A	2022	42	69.618	4846.67	1.614	0.0038	0.29%
<b>Garvan Islands</b>	N/A	2016	60	309.411	95735.17	1.424	0.0002	0.02%
<b>Caldey Island</b>	N/A	2019	0	319.262	101928.22	1.688	0	0.00%
<b>Totals</b>	-	-	<b>155354</b>	-	<b>653232.68</b>	<b>15.443</b>	<b>1.3112</b>	-

Table 6.5 Apportioning of **herring gull** present in the windfarm site to all breeding colonies with connectivity

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Morecambe Bay and Duddon Estuary SPA</b>	Yes	2002/2018/2022/2023	1558	47.552	2261.19	2.028	0.1645	15.37%
<b>Ribble and Alt Estuaries SPA</b>	No	2019/2021	1710	43.66	1906.20	2.850	0.3009	28.12%
<b>Bowland Fells SPA</b>	No	2018	500	69.199	4788.50	4.220	0.0519	4.85%
<b>Puffin Island SPA</b>	No	2017	944	61.039	3725.76	1.567	0.0467	4.37%
<b>Anglesey Terns/Morwenoliaid Ynys Môn SPA</b>	No	2022	1282	79.799	6367.88	1.210	0.0287	2.68%
<b>Barrow-in-Furness</b>	N/A	2010/2019/2022	1036	43.134	1860.54	2.061	0.1351	12.62%
<b>Whitehaven (Buildings)</b>	N/A	2002/2018/2019	1054	85.462	7303.75	2.261	0.0384	3.59%
<b>Haverigg and Millom</b>	N/A	2013/2019	380	48.575	2359.53	1.995	0.0378	3.53%
<b>Point Lynas to Trwyn Du</b>	N/A	2016	660	64.73	4189.97	1.384	0.0257	2.40%
<b>South Island</b>	N/A	1992/1994/1996/2017	1428	88.287	7794.59	1.114	0.0240	2.25%
<b>Inland Gwynedd</b>	N/A	2000/2019/2021/2023	342	57.232	3275.50	1.882	0.0231	2.16%
<b>East Island</b>	N/A	1992/2017	796	70.804	5013.21	1.156	0.0216	2.02%



Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Blackpool</b>	N/A	2001	80	36.27	1315.51	2.523	0.0181	1.69%
<b>Rhyl</b>	N/A	2019	148	52.935	2802.11	2.465	0.0153	1.43%
<b>St Bees Head and Town</b>	N/A	2013/2022	304	77.921	6071.68	2.093	0.0123	1.15%
<b>Prestatyn</b>	N/A	2019	100	51.991	2703.06	2.594	0.0113	1.06%
<b>Askam-in-Furness</b>	N/A	2019	102	50.315	2531.60	2.113	0.0100	0.94%
<b>Bangor and Caernarfon</b>	N/A	2019	286	72.472	5252.19	1.525	0.0098	0.91%
<b>Walney Urban Gulls</b>	N/A	2019	62	39.652	1572.28	1.985	0.0092	0.86%
<b>Salterhall Quarry</b>	N/A	2018	210	83.441	6962.40	2.426	0.0086	0.80%
<b>Porth Llanlleiana to Porth Eilian</b>	N/A	2016	256	67.769	4592.64	1.274	0.0084	0.78%
<b>Fleetwood</b>	N/A	2019	44	39.175	1534.68	2.471	0.0083	0.78%
<b>Llanddulas Quarries</b>	N/A	2017	96	56.278	3167.21	2.147	0.0077	0.72%
<b>Heysham Power Station</b>	N/A	2000	60	50.833	2583.99	2.773	0.0076	0.71%
<b>Sellafield</b>	N/A	2009	150	70.378	4953.06	2.075	0.0074	0.69%
<b>Seaforth Nature Reserve and Liverpool City</b>	N/A	1994/2019	56	57.817	3342.81	3.505	0.0069	0.65%
<b>North Island</b>	N/A	2017	266	86.601	7499.73	1.354	0.0057	0.53%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Kinmel Bay</b>	N/A	2019	38	53.65	2878.32	2.380	0.0037	0.35%
<b>Beaumaris</b>	N/A	2019	86	68.202	4651.51	1.550	0.0034	0.32%
<b>Colwyn Bay</b>	N/A	2019	44	56.07	3143.84	2.028	0.0033	0.31%
<b>Denbeighshire Lakes</b>	N/A	2016	44	78.548	6169.79	2.924	0.0025	0.23%
<b>Ainsdale</b>	N/A	2020	10	39.688	1575.14	2.710	0.0020	0.19%
<b>Manchester Ship Canal</b>	N/A	2002/2022	20	80.912	6546.75	5.169	0.0019	0.17%
<b>Llawndy Gas Terminal</b>	N/A	2001	14	52.234	2728.39	2.837	0.0017	0.16%
<b>Cleator Moor</b>	N/A	2013	42	81.94	6714.16	2.289	0.0017	0.16%
<b>Thornton-Clevelys</b>	N/A	1994	8	37.763	1426.04	2.496	0.0016	0.15%
<b>Carmel Head South</b>	N/A	2001/2016	62	80.187	6429.95	1.228	0.0014	0.13%
<b>Stocks Reservoir</b>	N/A	2021	6	80.094	6415.05	6.049	0.0007	0.06%
<b>Greenside Quarry, Kendal</b>	N/A	2023	8	79.581	6333.14	3.746	0.0006	0.05%
<b>Ulverston</b>	N/A	2013	4	55.994	3135.33	2.323	0.0003	0.03%
<b>Belmont Reservoir</b>	N/A	2023	2	72.731	5289.80	5.124	0.0002	0.02%
<b>Morecambe</b>	N/A	2000	2	55.614	3092.92	2.964	0.0002	0.02%
<b>Crummock Water</b>	N/A	2009	0	86.297	7447.17	2.743	0.0000	0.00%
<b>Great Orme and Little Orme</b>	N/A	2019	0	53.767	2890.89	1.794	0.0000	0.00%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Killington Reservoir</b>	N/A	2019	0	84.987	7222.79	4.837	0.0000	0.00%
<b>Leighton Moss RSPB</b>	N/A	2018	0	66.054	4363.13	3.420	0.0000	0.00%
<b>Morecambe Bay</b>	N/A	2019	0	64.749	4192.43	3.366	0.0000	0.00%
<b>Morecambe Central Gas Platform</b>	N/A	2020	0	15.5	240.25	1.902	0.0000	0.00%
<b>Netherton</b>	N/A	2019	0	52.801	2787.95	3.260	0.0000	0.00%
<b>Rowrah Quarry</b>	N/A	2018	0	85.014	7227.38	2.499	0.0000	0.00%
<b>Thirlmere</b>	N/A	2016	0	89.251	7965.74	3.246	0.0000	0.00%
<b>Windermere</b>	N/A	2019	0	71.738	5146.34	2.968	0.0000	0.00%
<b>Totals</b>	-	-	<b>14300</b>	-	<b>223745.82</b>	<b>132.903</b>	<b>1.0703</b>	-

Table 6.6 Apportioning of **kittiwake** present in the windfarm site to all breeding colonies with connectivity

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Rathlin Island SPA</b>	Yes	2021/2022	27560	245.00	60024.02	3.129	0.3006	6.27%
<b>Howth Head Coast SPA</b>	Yes	2015	6162	170.25	28985.06	2.566	0.1141	2.38%
<b>Lambay Island SPA</b>	Yes	2015	6640	165.171	27281.46	2.186	0.1113	2.32%
<b>Ireland's Eye SPA</b>	Yes	2015	3220	170.319	29008.56	2.153	0.0500	1.04%
<b>Wicklow Head SPA</b>	Yes	2022	1348	186.229	34681.24	2.358	0.0192	0.40%
<b>Saltee Islands SPA</b>	Yes	1997/2013	1700	280.31	78572.57	3.290	0.0149	0.31%
<b>Ailsa Craig SPA</b>	Yes	2021	980	204.23	41708.26	2.602	0.0128	0.27%
<b>Puffin Island SPA</b>	No	2023	254	61.039	3725.76	1.657	0.0236	0.49%
<b>Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfro SPA</b>	No	2022	3088	276.089	76225.14	1.910	0.0162	0.34%
<b>Sheep Island SPA</b>	No	2021	535	246.797	60908.76	3.253	0.0060	0.12%
<b>Aberdaron Coast and Bardsey Island SPA</b>	No	2019	242	156.67	24544.24	2.599	0.0054	0.11%
<b>Grassholm SPA</b>	No	2022	90	275.565	75936.07	1.750	0.0004	0.01%
<b>Inishtrahull Island SPA</b>	No	2016	14	305.737	93475.11	2.156	0.0001	0.00%
<b>Copeland Islands SPA</b>	No	2022	0	168.21	28294.27	2.501	0.0000	0.00%
<b>Outer Ards SPA</b>	No	2022	0	175.897	30939.75	3.416	0.0000	0.00%
<b>Strangford Lough SPA</b>	No	2022	0	157.744	24883.17	4.066	0.0000	0.00%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Morecambe Central Gas Platform</b>	N/A	2020	1112	15.5	240.25	2.144	2.0759	43.33%
<b>Offshore - Irish Sea</b>	N/A	2022	1234	20.135	405.42	1.893	1.2052	25.16%
<b>Great Orme and Little Orme</b>	N/A	2023	1184	53.767	2890.89	3.408	0.2920	6.09%
<b>St Bees Head and Town</b>	N/A	2022	1144	77.921	6071.68	2.937	0.1158	2.42%
<b>Maggy's Leap to Newcastle</b>	N/A	2021	2740	156.909	24620.43	2.920	0.0680	1.42%
<b>Point Lynas to Trwyn Du</b>	N/A	2016	312	64.73	4189.97	3.746	0.0584	1.22%
<b>South Island</b>	N/A	2013/2017	1132	88.287	7794.59	1.764	0.0536	1.12%
<b>Bray</b>	N/A	2010	2946	179.158	32097.59	2.120	0.0407	0.85%
<b>Lleyn Peninsula</b>	N/A	2016/2023	1964	166.285	27650.70	2.374	0.0353	0.74%
<b>Larne Lough to Portmuck</b>	N/A	2019	2290	193.474	37432.19	1.891	0.0242	0.51%
<b>Muck Island</b>	N/A	2022	1422	193.474	37432.19	3.018	0.0240	0.50%
<b>Lythe Mead to Carrick-Kee</b>	N/A	2022	540	126.973	16122.14	2.733	0.0192	0.40%
<b>South Stack</b>	N/A	1992/2022	223	93.85	8807.82	3.057	0.0162	0.34%
<b>Balcary Point</b>	N/A	2018	228	116.206	13503.83	3.746	0.0132	0.28%
<b>Causeway Coast</b>	N/A	2021	1659	244.418	59740.16	2.026	0.0118	0.25%
<b>Mull of Galloway</b>	N/A	2022	188	126.973	16122.14	4.035	0.0098	0.21%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
North Island	N/A	2017	156	86.601	7499.73	2.143	0.0093	0.19%
New Quay to Lochtyn	N/A	2018	664	220.835	48768.10	2.920	0.0083	0.17%
Monreith Cliffs and Scar Rocks	N/A	2022	104	122.176	14926.97	3.491	0.0051	0.11%
West Island	N/A	2017	108	108.007	11665.51	2.496	0.0048	0.10%
North Antrim coast	N/A	2017/2018/2021/2023	672	270.194	73004.80	2.262	0.0044	0.09%
Islay - West (Port Askaig to Bruichladdich)	N/A	2019/2023	802	299.871	89922.62	1.965	0.0037	0.08%
Loughshinny to Killiney	N/A	1994/2018	268	164.494	27058.28	1.742	0.0036	0.08%
Maggy's Leap	N/A	2019	182	157.012	24652.77	2.145	0.0033	0.07%
Dunmore East to Red Head	N/A	2014	884	306.318	93830.72	1.663	0.0033	0.07%
Port Mona, Devil's Bridge, Laggantalluch Head	N/A	2021	50	132.257	17491.91	2.452	0.0015	0.03%
Portally to Benlea Head	N/A	2018	200	306.318	93830.72	3.204	0.0014	0.03%
Downhill	N/A	2021/2023	234	278.158	77371.87	1.847	0.0012	0.02%
Islay - East (Port Askaig to Bowmore)	N/A	2022	150	273.818	74976.30	1.711	0.0007	0.01%
Skerry Islands	N/A	2021	116	264.251	69828.59	2.016	0.0007	0.01%
Sanda Islands - Kintyre	N/A	2019	66	214.149	45859.79	2.048	0.0006	0.01%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Bishop &amp; Clerks and Ramsey</b>	N/A	2018/2022	92	256.956	66026.39	1.834	0.0005	0.01%
<b>Creadan Head to Foilakipeen</b>	N/A	2017/2018	52	306.318	93830.72	1.667	0.0002	0.00%
<b>Giant's Causeway Coast</b>	N/A	2000	26	260.49	67855.04	1.940	0.0002	0.00%
<b>Binevenagh</b>	N/A	2021	0	283.304	80261.16	1.825	0.0000	0.00%
<b>Cardigan Island and Mwnt to Carreg Lydan</b>	N/A	2009	0	224.378	50345.49	2.051	0.0000	0.00%
<b>Castlemartin Coast (Berryslade to Barafundle Bay)</b>	N/A	2019/2022	0	298.734	89242.00	1.715	0.0000	0.00%
<b>East Antrim Coast</b>	N/A	2016	0	232.786	54189.32	2.101	0.0000	0.00%
<b>Gun's Island - Northern Island</b>	N/A	2012	0	141.761	20096.18	1.730	0.0000	0.00%
<b>Meikle Ross &amp; Little Ross</b>	N/A	2021	0	114.102	13019.27	2.357	0.0000	0.00%
<b>Mull of Kintyre</b>	N/A	2021	0	221.201	48929.88	2.374	0.0000	0.00%
<b>Porth Llanlleiana to Porth Eilian</b>	N/A	2016	0	67.769	4592.64	2.862	0.0000	0.00%
<b>Seaforth Nature Reserve and Liverpool City</b>	N/A	2018	0	57.817	3342.81	2.349	0.0000	0.00%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Sheddock Cliffs - Burrow Head</b>	N/A	2020	0	112.096	12565.51	4.051	0.0000	0.00%
<b>Totals</b>	-	-	<b>76977</b>	-	<b>2389300.53</b>	<b>148.366</b>	<b>4.7905</b>	-



Table 6.7 Apportioning of **puffin** present in the windfarm site to all breeding colonies with connectivity

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfro SPA</b>	Yes	2022	50699	276.09	76225.14	1.733	0.2759	54.40%
<b>Lambay Island SPA</b>	Yes	2015	288	165.17	27281.46	2.296	0.0058	1.14%
<b>Rathlin Island SPA</b>	Yes	2021/2022	411	245.00	60024.02	1.957	0.0032	0.63%
<b>Anglesey Terns/Morwenoliaid Ynys Môn SPA</b>	No	2022	1482	79.80	6367.88	2.829	0.1577	31.08%
<b>Aberdaron Coast and Bardsey Island SPA</b>	No	2019	282	156.67	24544.24	2.441	0.0067	1.32%
<b>Ireland's Eye SPA</b>	No	2015	254	170.32	29008.56	2.258	0.0047	0.93%
<b>Ailsa Craig SPA</b>	No	2021	250	204.23	41708.26	2.199	0.0032	0.62%
<b>Puffin Island SPA</b>	No	2023	13	60.99	3719.41	2.970	0.0025	0.49%
<b>Copeland Islands SPA</b>	No	2022	106	168.21	28294.27	2.349	0.0021	0.42%
<b>Sheep Island SPA</b>	No	2021	2	246.80	60908.76	1.943	0.0000	0.00%
<b>Outer Ards SPA</b>	No	2020	0	175.90	30939.75	2.327	0.0000	0.00%
<b>Strangford Lough SPA</b>	No	2022	0	157.74	24883.17	2.402	0.0000	0.00%
<b>Aberdaron Coast not in SPA</b>	N/A	2019	1238	157.79	24897.37	2.495	0.0297	5.86%
<b>South Island</b>	N/A	1990/1999	54	84.31	7108.68	2.934	0.0053	1.05%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
North Island	N/A	1999	37	78.97	6235.63	2.741	0.0039	0.77%
St Bees Head and Town	N/A	2022	16	77.72	6041.02	2.448	0.0016	0.31%
West Island	N/A	2017	16	100.25	10049.26	2.852	0.0011	0.21%
Bray	N/A	1999	55	179.16	32097.59	2.212	0.0009	0.18%
Larne Lough to Portmuck	N/A	2019	54	186.47	34771.06	2.230	0.0008	0.16%
South Stack	N/A	2022	10	93.19	8683.82	2.740	0.0008	0.15%
Bishop & Clerks and Ramsey	N/A	2018/2021	95	256.96	66026.39	1.801	0.0006	0.12%
Sanda Islands - Kintyre	N/A	2019	54	214.12	45846.95	2.109	0.0006	0.12%
Causeway Coast	N/A	2000	6	247.63	61321.61	1.942	0.0000	0.01%
Howth Village	N/A	1999	2	170.25	28985.06	2.258	0.0000	0.01%
Lleyn Peninsula	N/A	2019	1	170.87	29196.22	2.574	0.0000	0.00%
Mizen Head	N/A	1999	1	186.23	34681.24	2.185	0.0000	0.00%
Balcary Point	N/A	2020	0	116.21	13503.83	2.369	0.0000	0.00%
Great Orme and Little Orme	N/A	2019	0	53.90	2905.43	2.976	0.0000	0.00%
Maggy's Leap to Newcastle	N/A	2022	0	156.91	24620.43	2.356	0.0000	0.00%
Meikle Ross & Little Ross	N/A	2021	0	114.82	13183.17	2.440	0.0000	0.00%
Muck Island	N/A	2022	0	193.47	37432.19	2.229	0.0000	0.00%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Mull of Galloway</b>	N/A	2021	0	126.97	16122.14	2.489	0.0000	0.00%
<b>North Antrim coast</b>	N/A	2021	0	268.33	71998.84	1.870	0.0000	0.00%
<b>Skerry Islands</b>	N/A	2021	0	264.37	69892.55	1.876	0.0000	0.00%
<b>Totals</b>	-	-	<b>55426</b>	-	<b>1059505.40</b>	<b>79.828</b>	<b>0.5072</b>	-

Table 6.8 Apportioning of **razorbill** present in the windfarm site to all breeding colonies with connectivity

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population (raw)	Colony Population (1.34 correction)	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
Lambay Island SPA	Yes	2015	7353	9853.02	165.17	27281.46	2.125	0.2374	24.74%
Aberdaron Coast and Bardsey Island SPA	No	2019	3834	5137.56	156.67	24544.24	1.783	0.1154	12.03%
Puffin Island SPA	No	2023	520	696.80	60.99	3719.54	1.954	0.1132	11.80%
Copeland Islands SPA	No	2021	20	26.80	168.21	28294.27	2.055	0.0006	0.06%
Anglesey Terns/Morwenoliaid Ynys Môn SPA	No	2017	3	4.02	79.80	6367.88	1.824	0.0004	0.04%
Strangford Lough SPA	No	2022	0	0.00	157.74	24883.17	2.031	0.0000	0.00%
South Stack	N/A	2016/2021	1479	1981.86	93.19	8683.82	1.822	0.1286	13.41%
Great Orme and Little Orme	N/A	2023	399	534.66	53.90	2905.43	2.041	0.1162	12.11%
Porth Llanlleiana to Porth Eilian	N/A	2016	457	612.38	69.89	4884.75	1.852	0.0718	7.48%
South Island	N/A	1995/2017	459	615.06	84.31	7108.68	1.979	0.0530	5.52%
St Bees Head and Town	N/A	2022	170	227.80	77.72	6041.02	2.605	0.0304	3.17%
East Island	N/A	2017	100	134.00	70.80	5013.21	2.040	0.0169	1.76%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population (raw)	Colony Population (1.34 correction)	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
Lleyn Peninsula	N/A	2016/2023	621	832.14	170.87	29196.22	1.853	0.0163	1.70%
Lythe Mead to Carrick-Kee	N/A	2022	199	266.66	126.94	16114.27	2.080	0.0106	1.11%
Howth Village	N/A	2015	279	373.86	170.25	28985.06	2.112	0.0084	0.88%
West Island	N/A	2017	101	135.34	100.25	10049.26	2.016	0.0084	0.88%
Balcary Point	N/A	2018	91	121.94	116.31	13528.71	2.552	0.0071	0.74%
Port O'Warren	N/A	2020	81	108.54	119.97	14392.80	2.556	0.0060	0.62%
North Island	N/A	2017	36	48.24	78.97	6235.63	2.137	0.0051	0.53%
Mull of Galloway	N/A	2022	94	125.96	126.97	16122.14	2.080	0.0050	0.52%
Aberdaron Coast not in SPA	N/A	2016/2019	116	155.44	157.79	24897.37	1.802	0.0035	0.36%
Point Lynas to Trwyn Du	N/A	2016	14	18.76	65.06	4232.28	1.920	0.0026	0.27%
Port Mona, Devil's Bridge, Laggantalluch Head	N/A	2021	37	49.58	134.33	18045.62	2.089	0.0018	0.19%
Sheddock Cliffs - Burrow Head	N/A	2020	6	8.04	112.18	12583.68	2.232	0.0004	0.05%
Meikle Ross & Little Ross	N/A	2018	3	4.02	114.82	13183.17	2.429	0.0002	0.02%
Barlocco	N/A	2021	0	0.00	113.50	12881.57	2.537	0.0000	0.00%

Master Site	Species is a Qualifying Feature?	Year of Colony Count	Colony Population (raw)	Colony Population (1.34 correction)	Distance to Development (km) (Centroid to Centroid)	Distance squared (km)	1/Proportion of Foraging Range as Sea	Resulting Weight	Proportional Weight
<b>Carmel Head South</b>	N/A	2016	0	0.00	79.00	6241.63	1.829	0.0000	0.00%
<b>Maggy's Leap to Newcastle</b>	N/A	2022	0	0.00	156.91	24620.43	2.069	0.0000	0.00%
<b>Monreith Cliffs and Scar Rocks</b>	N/A	2016	0	0.00	116.36	13539.88	2.129	0.0000	0.00%
<b>Rigg Bay + Crugleton</b>	N/A	2020	0	0.00	119.64	14313.01	2.297	0.0000	0.00%
<b>Totals</b>	-	-	<b>16472</b>	<b>22072.48</b>	<b>3418.51</b>	<b>428890.20</b>	<b>62.828</b>	<b>0.9593</b>	-