



The Sizewell C Project

6.3 Volume 2 Main Development Site Chapter 14 Terrestrial Ecology and Ornithology Appendix 14A7 Ornithology Part 2 of 2

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SIZEWELL C DEVELOPMENT – MAIN DEVELOPMENT SITE: VOLUME 2, CHAPTER 14, APPENDIX 14A7 – ORNITHOLOGY

Documents included within this Appendix group are as follows:

APPENDIX 14A7.1 ORNITHOLOGY (included in Part 1)

ANNEX 14A7.1 FIGURES (provided separately)

ANNEX 14A7.2 ORNITHOLOGY METHODOLOGY

ANNEX 14A7.3 ORNITHOLOGY SECONDARY DATA

- Annex 14A7.3 Sizewell First Interim Bird Report February 2008
- Annex 14A7.3 Nightjar Survey Report 2010
- Annex 14A7.3 Black Redstart Survey Report 2011
- Annex 14A7.3 Sizewell Second Interim Bird Report
- Annex 14A7.3 Seabird Report 2011-12
- Annex 14A7.3 Sizewell Bittern Report 2008
- Annex 14A7.3 Breeding Bird Survey Report 2010
- Annex 14A7.3 Marsh Harrier and Bittern Survey Report 2011-12
- Annex 14A7.3 Sizewell Little Tern Report 2010
- Annex 14A7.3 Arable Reversion CBC 2012
- Annex 14A7.3 Sizewell Marsh Harrier Report 2008



ANNEX 14A7.4 HYDER ARCADIS REPORTS

- Annex 14A7.4 Red-throated Diver Report 2012-13
- Annex 14A7.4 Red-throated Diver Report 2013-14
- Annex 14A7.4 Little tern Report 2013
- Annex 14A7.4 Wintering bird survey Technical Note 2018-19

ANNEX 14A7.5 SPECIES ACCOUNTS- QUALIFYING SPECIES

ANNEX 14A7.6 SPECIES ACCOUNTS- RED AND AMBER LIST SPECIES

NOTE:

Please note that the red line boundary used in figures within this document may have since been amended, and therefore does not reflect the boundaries in respect of which development consent has been sought in this application. However, the amendment to the red line boundary does not have any impact on the findings set out in this document and all other information remains correct.

EDF Energy
Sizewell C Nuclear Power Station
Red throated diver survey report



Hyder Consulting (UK) Limited

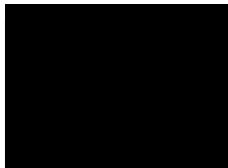
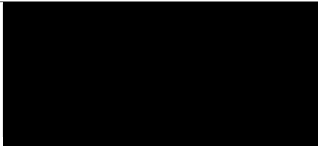
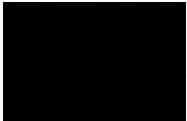
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Sizewell C Nuclear Power Station

Red throated diver survey report

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1 Introduction

The main purpose of this report is to present the results of surveys for red-throated diver (*Gavia stellata*) wintering off the Suffolk Coast in the vicinity of the proposed Sizewell C Nuclear Power Station. The surveys were undertaken by Hyder Consulting Limited between October 2012 and March 2013 inclusive.

This report makes reference to similar studies undertaken by AMEC during the winter of 2011 and 2012 (AMEC, 2012).

The marine waters adjacent to Sizewell, seaward of the mean low water mark or the seaward boundary of previously existing SPAs, whichever is furthest seaward, are included within the Outer Thames Estuary Special Protection Area (SPA) which covers 379,270 ha from the North Kent coast northwards to Great Yarmouth. It lies in the UK's 'Southern North Sea Regional Sea' both within and beyond 12 nautical miles (nm) of the coast, and was designated as an SPA in 2011.

The SPA qualifies as the most important site for wintering red-throated diver in the UK, supporting 38 per cent of the British wintering population of the species. There are no alternative sites in Britain that support and protect an equivalent number of this species.

The conservation objective for the Outer Thames Estuary SPA is 'to maintain the internationally important populations of wintering red-throated diver and its supporting habitats and prey species in favourable condition' (JNCC & Natural England, 2009). Relevant habitats include shallow coastal waters and areas in the vicinity of sub-tidal sandbanks.

The red-throated diver is listed in Annex I of the Birds Directive. Although it is not regarded as a threatened species, its conservation status is unfavourable because of declines in the European breeding population between 1970 and 1990, from which it has not fully recovered. The reasons for decline are not fully understood, but may include the loss and deterioration of its breeding habitats, decline of fish stocks and water pollution.

The European population is now considered to be stable, though depleted. The following paragraphs describe the reasons for the red-throated diver's vulnerability as well as its distribution and abundance in the wider Thames Estuary.

Populations of red-throated diver are very sensitive to increased adult mortality, as they are a long-lived species with a low breeding productivity; population recovery from large mortality events therefore tends to be very slow. Overwintering birds are particularly vulnerable to disturbance, as during the winter months weather conditions are harsh and they need to lay down fat reserves for the migration to their breeding grounds. Disturbance could potentially reduce the amount of time that the birds spend foraging, preventing them achieving the desired fat reserves before migrating north.

Studies to investigate numbers of inshore water birds using the Greater Thames estuary (between North Kent and Great Yarmouth) carried out by the Joint Nature Conservation Committee (JNCC) over eight winter seasons between 1988/89 and 2006/07 (Webb et al. 2009), indicated that, within the Greater Thames, red-throated divers were recorded mainly in waters less than 20m deep. The results showed that large numbers of divers were recorded, mainly in December and January/February of each year. Red-throated divers were the dominant diver species in the Greater Thames, being present throughout the area. Within the study area, birds were regularly recorded in flocks of 5-10 individuals, and frequently up to 20, although the largest aggregation recorded was 150 individuals. The study showed that there were large variations in total numbers over the survey period, with numbers of birds ranging from 425

(March 2004) to 10,884 individuals (January 2003), with a mean of peak counts of 6,618 individuals.

Piotrowski (2003) highlights that red-throated divers can be seen offshore from Suffolk in all months of the year, but that the peak period is from late November to February. Numbers occurring offshore of Suffolk during the winter months varies greatly between years but the offshore waters between Orforness and Lowestoft are known to support large numbers of wintering red-throated divers Piotrowski (2003). It is difficult to predict the reasons behind the variations in numbers, but they are likely to be related to factors including weather conditions and the availability and distribution of prey species such as sprat.

2 Methodology

In deciding upon an appropriate survey methodology, consideration was given to the potential effects on red-throated divers that could result from the proposals to construct a new power station at Sizewell.

It is considered that the proposed new Sizewell C Nuclear Power Station could potentially affect wintering red-throated divers in the following manner:

- Construction activity causing disturbance and displacement of foraging divers;
- During the construction phase, the construction of the Marine off Loading Facility (MOLF) will result in increased shipping traffic potentially causing disturbance and displacement to foraging divers;
- During the construction phase, the MOLF may potentially displace or alter the movements of existing vessels (such as inshore fishing boats) causing additional disturbance and displacement to divers; and
- During the operational phase, the thermal plume generated by the C station cooling water discharge (particularly in combination with the B station) would cause a localised change in sea temperature and water quality, which could affect the distribution and abundance of red-throated diver prey species. In addition, the abstraction and discharge of cooling water could also affect prey species through entrainment or impingement.

Due to the wide variation in the numbers of wintering red-throated divers it is important to understand the trends and potential variation in numbers of wintering red-throated divers within the Outer Thames Estuary SPA. Therefore, in order to enable a suitably robust assessment to be undertaken on the potential effects of the proposals on red-throated divers and, specifically, the integrity of the Outer Thames Estuary SPA, it is necessary to gather representative baseline information on the abundance and distribution of red-throated divers within the inshore waters in the vicinity of Sizewell over a number of years.

Previous surveys for wintering red-throated divers were undertaken by AMEC Environment & Infrastructures UK Ltd ('AMEC') during the winter of 2011/12. The survey work undertaken for this report during the winter of 2012/13 has included a repeat of the AMEC methodology to ensure that the baseline information is comparable.

EDF has indicated that the likely route used by vessels of deeper draught approaching the MOLF will be from the north, parallel to the shore, first approaching the shore to the north of Dunwich Bank. Vessels of shallower draught may also approach the MOLF over the swale between the Dunwich and Sizewell banks and depart by the same route. The northern deep water approach is beyond the study area of the previous surveys undertaken by AMEC. The

survey area for the 2012/13 surveys was therefore extended to Dunwich Beach to ensure that the baseline data were collected for the full extent of the potential affected environment, including the likely shipping routes to the MOLF and allow for the potential displacement of existing vessel movements.

2.1 AMEC Survey

AMEC undertook a year's worth of survey (between March 2011 and April 2012) from 12 vantage point (VP) locations along the coastline between Minsmere in the north and Orford Ness in the south. During the winter period (October to March) red-throated divers were the focus of the survey effort, whilst during the spring and summer months other species such as little tern (*Sterna albifrons*) were the focus of the survey effort. Only the red-throated diver results are discussed in this report.

At each VP location, 45 minutes of observation were undertaken, and any observations of red-throated divers were recorded including the birds' abundance, location and behaviour (foraging, resting or flying). Observations were conducted using a high-powered telescope, and the survey area from each VP was a view shed (a 180 degree arc) of the coastline. Each VP was subject to 45 minutes of survey once a fortnight during the winter period (October 2011 to March 2012). Surveys were undertaken during daylight hours with the timings varying during the survey period so that a full range of tidal states was covered for each VP.

2.2 Hyder Survey

During the winter of 2012/13, Hyder repeated the survey methodology used by AMEC at each of the 12 VP locations. However, three further VP locations were added to the north, as discussed above to include the route to the MOLF. To reduce the likelihood of double-recording, two surveyors worked simultaneously from opposite ends of the coast at different VP locations to complete the survey work. Surveyors were in regular contact by mobile phone to notify each other if and when substantial movements of divers occurred, in order to reduce the likelihood of these being counted twice from different VP locations. It is considered that, although double counting of individual divers may explain some of the population variations experienced between years, but that this is likely to be relatively minor compared to other factors influencing diver numbers, such as weather and the distribution of prey species.

It should be noted that although the focus of the survey effort was the collection of information relating to red-throated divers, in order to improve the quality of the ecological baseline regarding seabirds present in close proximity to the Sizewell C project surveyors also recorded other seabird species observed along the shoreline or over the sea, this is discussed further in Section 3.2

Natural England (NE) were consulted over the survey methodology, and a number of changes were made to incorporate their comments. For example, in order to gain some contextual information about the nocturnal behaviour of red-throated divers, Hyder undertook additional surveys during the dawn and dusk periods (as requested by NE) and used this to infer nocturnal presence. This was combined to some extent with the 'standard' daytime VP surveys; however, due to limited daylight hours during the winter period, in order to ensure that all VPs were surveyed during the same diurnal period, two additional VP surveys were undertaken during each visit at dusk the day before the 'standard' surveys commenced.

The survey schedule for each fortnightly monthly visit was therefore as follows:

- Day 1 - 2 x VP surveys (undertaken by two surveyors) between dusk and 45 minutes thereafter

- Day 2 - 15 x VP surveys (undertaken by two surveyors) commencing 45 minutes before dawn at the same two VPs as the dusk surveys, after which the remaining 13 VPs would be surveyed throughout the day.

The dusk and dawn surveys were carried out on a rotational basis throughout the season at those four VP locations that are closest to Sizewell (VPs 1-4). This is because this was where the greatest effects on red-throated diver were considered most likely to occur, for example through disturbance from the construction activities and/or increased shipping activity.

The vantage point locations (Nos. 1-15) and view sheds are shown on Figure 1 (Sheets 1 to 5), presented in Appendix A.

2.3 Survey Limitations

It is acknowledged that there are a number of limitations to shore-based vantage point surveys such as this. These included the following:

- Red-throated divers could only be identified with a high level of certainty (with the use of a telescope) up to a maximum of approximately 2km offshore. Birds that were seen at a greater distance were more difficult to identify with any confidence.
- At higher wind speeds the height of the waves increased and this made observations of divers on the water more difficult. At wave heights above 1m, divers were not visible on the sea surface and generally only observed when in flight. On only four occasions during the winter were wave heights were at 1m or greater (see Appendix B).
- At times, offshore haze or mist reduced visibility, limiting the effective distance offshore that could be observed. However, visibility was always sufficient to allow at least a 1km distance offshore to be observed. On five occasions during the winter visibility was obscured beyond 1km. The weather on each occasion is identified in Appendix B.
- Visibility at dawn and dusk surveys was generally reduced due to lower light levels during these times. In addition, at dawn, and for the first hour of the morning, the rising sun would be directly facing the surveyors casting everything into silhouette.
- Red-throated divers were observed to spend considerable amounts of time foraging underwater, and as a consequence this made it harder to provide accurate population counts.
- It is considered that there may have been some element of double counting, with individual divers being counted on more than one occasion during a survey visit. However, this was minimised by the use of two surveyors, and conducting each survey event within the same 24 hour period, and on balance it is considered that double counting was minimal.

Despite the above limitations, the results from the AMEC and Hyder surveys are broadly comparable and identified large numbers of red-throated divers as being present and the survey methodology was therefore considered to be both appropriate and effective. None of the above limitations is considered to have substantially constrained the effectiveness of the survey. However, shore based surveys do not provide a complete picture of red-throated diver abundance and distribution, and further targeted surveys are suggested (see Section 4).

3 Results

3.1 Red-throated diver

3.1.1 Total and mean counts

A total of 2543 red-throated diver observations were made during the course of the 2012/2013 survey period. Relatively few divers were observed during the period October to December, with the greatest numbers being recorded during February and March 2013.

Table 3.1 presents a summary of the results, highlighting the total and mean number of divers recorded from each vantage point. The detailed survey results are presented in Appendix C.

Table 3.1 Total and mean numbers of red-throated divers observed from the 15 VPs during the winter of 2012/2013 (10 survey visits).

VP Number	Total number RTD observed	Mean number of RTD observed per survey visit
1	138	13.8
2	62	6.2
3	60	5.4
4	88	8.8
5	50	5.0
6	25	2.5
7	100	10
8	196	19.6
9	227	22.7
10	229	22.9
11	421	42.1
12	406	40.6
13	203	20.3
14	191	19.1
15	147	14.7

The data indicate that the southern portion of the survey area, from Thorpeness to Orfordness Lighthouse (VPs 7-12) supported the greatest number of red-throated divers, with another spike in population (albeit smaller and based on one year's data only) in the northern portion of the survey area from Minsmere to Dunwich (VPs 13-15). Relatively low numbers of divers were observed in close proximity to Sizewell (VPs 1-4).

The majority of observations were of commuting birds, with smaller numbers observed foraging or resting on the water. During the survey period, divers were seen to make relatively short flights before landing again; it is considered that this is likely to be related to the flood and ebb tides, with birds making short flights to compensate for drifting on the ebb and flood tides, respectively. During the final survey visits, in March 2013, large numbers of divers were recorded flying north and this may represent birds passing through on their migration north to breed in Scotland and northern Europe. The Atlas of Seabird Distribution in North-West European Waters (JNCC 1995) shows wintering red-throated divers as being widely distributed around the coastal margins of the North Sea, and it is likely that the migration north occurs on a similarly wide front.

In general, the immediate offshore area (up to 2km) was relatively quiet with boat activity limited to 2-3 small local fishing boats, although large container ships using Felixstowe and Lowestoft docks were always visible on the horizon (more than 5km off shore). On two occasions, red-throated divers were seen to be disturbed and displaced by boats close inshore for a short

period. On the 3rd January 2013, a total of 23 divers were recorded from VP12; fishing boat activity caused the displacement and flight of six of the divers, which moved a few hundred metres before landing and commencing to forage again. On the 19th February, a lifeboat sped north from Orfordness parallel to the coast approximately 500m offshore, and up to 10 divers were displaced, making flights of a few hundred metres away from the path of the lifeboat. Once the lifeboat had passed, the divers settled down and continued foraging.

Relatively few divers were seen during the dawn and dusk surveys carried out at VPs 1-4. In general, only 1 or 2 individuals (if any) were observed. The largest numbers were observed at dawn on the 5th March from VPs 3 and 4, with 28 and 40 individuals being observed, respectively. During the day (outside of the dawn and dusk period) numbers of red-throated divers recorded at these were VPs were also relatively low.

The data gathered is insufficient to draw any firm conclusions about the nocturnal movements of divers. A review of the literature does not suggest that red-throated divers undertake substantial nocturnal flight activity. Garthe and Huppopp (2004) investigating the sensitivity of seabirds to marine wind farms categorised red-throated divers as 'a species that undertakes very little nocturnal flight activity', whilst a research report by Kahlert et al.(2012) describes diver species as 'typical nocturnal-migrating water birds', indicating some nocturnal flight movements only when the birds are migrating.

Appendix B presents the details of the survey timings, state of the tide and weather conditions for each VP survey event, whilst Appendix C sets out the detailed observations of red-throated divers.

3.1.2 Peak counts

In order to gain a meaningful understanding of the proportion of the SPA population that might be affected by the proposals at Sizewell C, and to minimise the risk of double counting birds between different survey visits (given that at least a proportion of the same birds are likely to remain on the same part of the coast during the winter), total counts per survey visit are provided in Table 3.2, below.

In order to further reduce the risk of double counting, the observations made during the dusk count the evening before the full 15 VP survey have been removed, as this would potentially inflate the figures slightly for the four VPs near to Sizewell where these counts were made.

Table 3.2 Total numbers of red-throated divers observed from all 15 VPs during each of the 10 survey visits.

Survey visit	Date of survey	Total number RTD observed across the whole survey area
1	31/10/12	12
2	28/11/2012	20
3	13/12/12	74
4	19/12/13	171
5	3-4/1/13	45
6	22/1/13	49
7	6/2/13	193
8	19/2/13	281
9	5/3/13	1261
10	27/3/13	429

These figures demonstrate that the peak number of red-throated divers recorded across the whole survey area during the winter of 2012/13 was 1261, during the 3rd March 2013 survey

visit. This equates to 19% of the SPA population (approximately 6,500 individuals), and therefore means that a significant proportion could potentially be affected by the proposals for Sizewell C. The larger numbers recorded in March are likely to have comprised wintering birds combined with a possible influx of passage birds from further south.

Once the impact parameters of the works are known more precisely (including the full extent of the thermal plume and the sea traffic movements), it will be possible to break these figures down further in order to assess the proportion of the SPA population that could be directly and indirectly affected. For example, the peak number of red-throated divers recorded across VPs 1 to 4 (i.e. those most likely to be directly affected) was 237 individuals during the 5th March 2013 survey visit, which equates to approximately 3.6% of the SPA population. Without mitigation, the potential will exist for a significant adverse effect on this proportion of the population. Clearly this will need to be examined in more detail in both the EIA and the HRA.

3.1.3 Comparison with the AMEC results

AMEC recorded 5056 red-throated diver observations during their 2011/12 surveys, the majority of which were recorded in the periods March to April 2011 and December to April 2012. A large proportion of the birds (3997) were observed commuting, with 1059 either resting on the sea or foraging. Table 3.3 highlights the total and mean number of birds recorded by AMEC

Table 3.3 Total and mean numbers of red-throated divers observed from 12 VPs during the winter of 2011/2012

VP Number	Commuting Birds		Foraging/loafing Birds	
	Total	Mean	Total	Mean
1	213	15.1	128	9.1
2	208	14.8	62	4.4
3	112	8.0	47	3.4
4	464	33.1	50	3.6
5	210	15.0	222	15.9
6	264	18.9	157	11.2
7	322	22.9	119	8.5
8	379	29.0	38	2.9
9	102	7.7	18	1.4
10	322	24.8	57	4.4
11	445	34.2	108	8.3
12	956	73.5	53	4.1

Table 3.4 and 3.5 indicates the numbers of divers recorded by AMEC on a monthly basis.

**Table 3.4 Peak number of Red-throated Diver recorded resting or foraging recorded by AMEC on a monthly basis
(Reproduced from AMEC 2012)**

VP	Month													
	Mar11	Apr11	May 11	Jun11	Jul11	Aug11	Sep11	Oct11	Nov11	Dec11	Jan12	Feb12	Mar12	Apr12
1	42	3	0	0	0	0	0	0	0	3	0	57	18	0
2	7	1	0	0	0	0	0	0	0	1	1	10	16	20
3	14	5	0	0	0	0	0	0	0	1	0	7	14	1
4	5	0	0	0	0	0	0	0	0	7	7	9	17	0
5	190	4	0	0	0	0	0	0	0	3	3	8	2	2
6	101	7	0	0	0	0	0	0	3	1	2	10	8	10
7	56	2	0	0	0	0	0	0	1	3	13	8	13	12
8	16	1	0	0	0	0	0	0	0	2	3	7	3	0
9	2	1	0	0	0	0	0	0	0	1	1	0	10	1
10	7	1	0	0	0	0	0	0	0	1	6	3	22	4
11	5	11	0	0	0	0	0	0	1	0	6	2	60	2
12	18	3	0	0	0	0	0	0	0	1	6	3	10	1

**Table 3.5 Total count of Red-throated Diver recorded commuting (in flight) recorded by AMEC on a monthly basis
(Reproduced from AMEC 2012)**

VP	Mar11	Apr11	May 11	Jun11	Jul11	Aug11	Sep11	Oct11	Nov11	Dec11	Jan12	Feb12	Mar12	Apr12
1	22	2	0	0	0	1	1	0	1	95	7	69	2	13
2	1		0	0	0	0	0	1	2	23	14	11	150	6
3	4	2	0	0	0	0	0	0	0	10	24	49	13	10
4	61	1	0	0	0	0	0	0	10	13	156	202	20	1
5	3	1	0	0	0	0	0	0	2	19	8	173	3	1
6	31	5	0	0	0	0	0	0	2	35	14	21	151	11
7	24		0	0	0	0	1	0	0	40	10	225	22	0
8	7	2	0	0	0	0	0	2	0	276	1	40	51	0
9	1	3	0	0	0	0	1	1	0	12	3	1	80	0
10	1	1	0	0	0	0	0	0	4	3	39	224	46	4
11	17	1	0	0	0	0	0	1	1	12	330	37	45	1
12	11	4	0	0	0	0	0	0	1	159	710	51	20	0

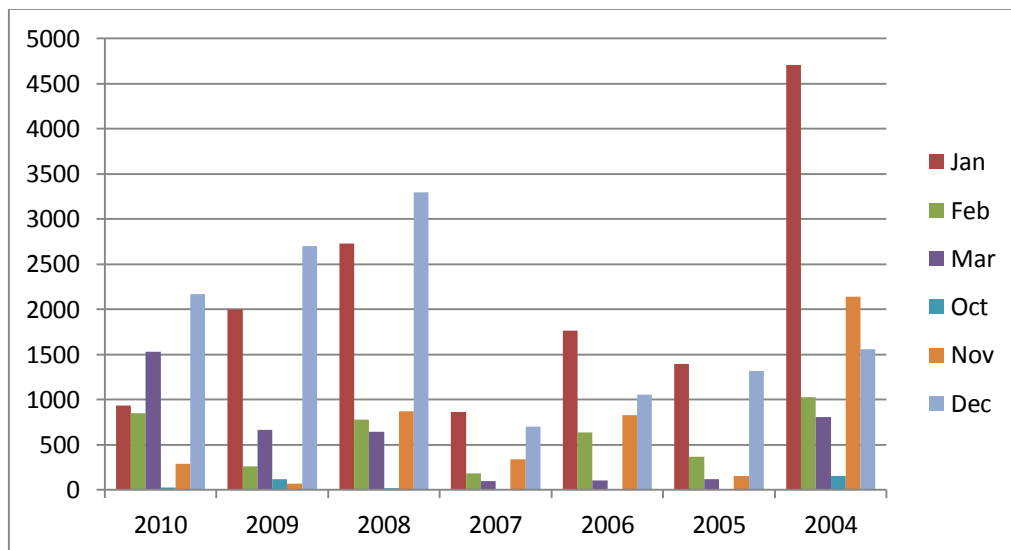
In comparison to the results from 2012/13, the data collected by AMEC suggested that red-throated divers were relatively evenly distributed along the coast, with slightly higher numbers south of Thorpeness (VPs 7 – 12).

AMEC recorded a greater number of red-throated divers, but numbers are likely to differ greatly between years (as discussed in Section 1, above). For example, the red-throated diver population off the Suffolk coast was estimated at 1,500 to 3,000 birds during the 1990s (Piotrowski 2003). Large numbers were then recorded in 2004 (over 8000), with much lower counts during the subsequent winters of 2005 to 2007 (Piotrowski 2003).

To highlight the annual variation in numbers of red-throated divers, AMEC reviewed the figures published in the Birds of Suffolk (Piotrowski 2003). Figure 3.1 shows the results of this review, and summarises the total number of red-throated divers recorded off the Suffolk coast during the winter months from 2004 to 2011. Variations in numbers of wintering divers are likely to be related to a number of factors including:

- The abundance and distribution of prey food items such as sprats.
- Weather conditions, during rough seas divers may favour more sheltered locations and wind direction may force them closer to shore and vice versa.

Figure 3.1 Annual variations in numbers of Red-throated divers recorded off the Suffolk Coast



The figures have been obtained from Birds of Suffolk 2004-2010.

Figure 3.1 shows divers being more abundant in December and January rather than February and March as suggested by the AMEC and Hyder surveys. This difference could be due to a number of factors but the important point to note is that the winter period (October to April) is when red – throated divers are present in the greatest numbers off the Suffolk Coast and that numbers tend to be greatest during the period December to March.

With regard to peak numbers of red-throated divers, the AMEC report reveals that a total of 858 birds were recorded during the counts at VPs 10, 11 and 12 on the 6th individuals). The peak numbers recorded during both the 2011/12 and the 2012/13 surveys therefore indicate that large

numbers of red-throated divers (representing a significant proportion of the SPA population) may be present at any one time off this part of the coast of Suffolk. However, numbers of divers show significant variation between years.

3.2 Other seabirds

As described in the introduction, although the focus of the survey work was the distribution and abundance of red-throated divers, other seabird species were recorded as incidental observations. A total of 33 additional species were recorded to be using either the shore or inshore waters. These incidental records of additional species are presented in Appendix D (Tables 1 – 34) and a brief commentary given below.

The most common seabird species recorded were cormorants (*Phalacrocorax carbo*) and a variety of gull species. Cormorants were observed foraging and commuting throughout the survey area, with up to 400 birds being recorded in a single day and 100 birds recorded roosting on both of the Sizewell Rig structures offshore from Sizewell. The gull species recorded included black-headed gull (*Larus ridibundus*), herring gull (*Larus argentatus*), common gull (*Larus canus*), lesser black-backed gull (*Larus fuscus*) and greater black-backed gull (*Larus marinus*).

Gulls were widely recorded, but there was a notable abundance in the vicinity of the Sizewell Rig Structures and the cooling-water outflows, with significant numbers of gulls (500 to 1000) recorded foraging here during the winter months. The location of the Rigs and the outfalls is therefore considered to represent a significant foraging resource for wintering gulls.

Other incidental bird species largely comprised rafts of wildfowl loafing on the sea or commuting from feeding areas along the coast, this included common scoter (*Melanitta nigra*) and large numbers of pintail (*Anas acuta*) (up to 229)..

EDF indicated that NE is minded to review the Outer Thames Estuary SPA and it is possible that additional sea bird species may be added to the citation for the site in the future. Therefore a high level review was carried out to identify if there are other seabird species which may potentially be added to the Outer Thames Estuary SPA.

This assessment involved a review of the following:

- the evidence base for the Outer Thames Estuary SPA
- a review of species cited as interest features of adjacent SPAs; and
- a review of the 2011/2012 (AMEC) and 2012/13 (Hyder) survey results from Hyder to identify any species identified occurring in sufficient numbers to justify SPA designation (the designation threshold for an SPA is normally taken to be if a site supports 1% or above of the European breeding, wintering or passage population of a particular species).

The results of this assessment have identified the following species that could potentially be added to the citation for the Outer Thames Estuary SPA:

- Sandwich tern (*Sterna sandvicensis*), an interest feature of the Alde – Ore SPA, have been recorded in small numbers (up to 8) along this section of coast during the breeding season. When undertaking dedicated little tern survey work, records for sandwich tern should also be made.
- Breeding lesser black backed gulls are also an interest feature of the Alde – Ore SPA. In addition, this SPA supports numbers of breeding herring and black headed gulls. Sizewell Rigs and the B station outfall have been identified as an important foraging resource for gulls. Disturbance or displacement from this feeding resource could be a potential significant effect. Numbers of gull species using the outfall and other areas of the coast will be recorded again during 2013, when the little tern surveys are undertaken.

- Large numbers of cormorants have been recorded both during the breeding season and the winter. It is likely that the coast between Dunwich and Orfordness supports larger numbers than the SPA threshold for breeding and wintering cormorants (70 and 130 respectively). Numbers of cormorants using the outfall and other areas of the coast will be recorded again during 2013, when the little tern surveys are undertaken.
- A maximum of 39 wintering great crested grebes have been recorded, which is approaching the SPA wintering threshold of 50 individuals.
- A maximum of 229 wintering pintail were recorded on the sea, which is approaching the SPA threshold for wintering pintail of 280 individuals.

The information relating to incidental bird species is not discussed further in this report, but will be used (together with similar data collected by AMEC) to provide a robust baseline for the environmental impact assessment concerning the use of the coast by seabird species. In addition, this information will be used to complete a Habitat Regulations Assessment (HRA) for the potential for Sizewell C proposals to affect the integrity of the Outer Thames Estuary and other nearby SPA's.

4 Conclusions

The results from both winters indicate that the offshore area between Dunwich and Orfordness lighthouse supports large numbers of wintering red-throated divers throughout the winter period, and that overall this is likely to represent a significant proportion of the SPA population. However, there does appear to be significant annual variation and red-throated diver numbers are not constant through the winter period.

AMEC calculated that a peak count of 858 divers on 6th January 2012 (at VPs 10 to 12) equates to 13.3 % of the SPA population on which the site designation was based (6,500 individuals). Whilst the total numbers of observations made during the winter of 2012/13 were lower than the previous year (which is unsurprising given known population fluctuations), the peak number of red-throated divers recorded across the whole survey area (during the 3rd March 2013 survey visit) equates to approximately 19% of the SPA population.

The peak numbers recorded during both the 2011/12 and the 2012/13 surveys therefore indicate that large numbers of red-throated divers may be present at any one time off this part of the coast of Suffolk. Whilst there is considerable variation not only between years but also between survey visits, it is clearly the case that a significant proportion of the SPA population forages and commutes within the likely zone of influence of the proposed works at Sizewell C, and that this will need to be taken into consideration in both the EIA and HRA.

. Whilst, red-throated divers appear to be distributed along this entire section of coast, the greatest numbers are to the south (Thorpeness to Orfordness) and to the north (Minsmere to Dunwich), with fewer birds observed offshore immediately adjacent to the Sizewell Complex. The larger numbers of red-throated divers observed in the vicinity of Thorpeness may be related to the relatively high levels of turbulence in this area, which may tend to drive prey species nearer to the surface. The larger numbers observed at Dunwich may reflect the more sheltered conditions that occur there because of the moderating influence of the offshore banks.

Anecdotal evidence would suggest that boat movements close inshore can cause displacement and disturbance to foraging divers, but further work would be required to fully assess the behavioural response of red-throated divers to boat traffic and other construction disturbance.

The survey work undertaken to date has provided a partial picture on how the Sizewell C proposals could potentially affect wintering red-throated divers. It is considered that a number of data gaps and/or questions remain and that additional survey work should aim to provide sufficient information to answer these. This additional work is likely to start in 2014, following consultation with EDF's Marine Team, CEFAS and stakeholders to ensure the future survey programme is targeted and robust. The following data collection and survey activities are recommended:

- Collate and review the literature to gain a better understanding of RTD occurrence beyond 2km offshore and any information related to the drivers of natural change within the wintering population, how sensitive are RTD to weather for example.
- A review of literature relating to vulnerability of RTD to noise and disturbance and other anthropogenic influences, and how these influences may cause change within the wintering RTD population.
- Review the extensive marine data collected by EDF and undertake a mapping exercise highlighting those areas offshore with features likely to be particularly attractive to wintering RTD, which could be correlated with the on-shore observations already collected.

- Review of the thermal plume modelling, fisheries data and other marine data to ascertain if effects on RTD prey species likely or if the cooling water discharge may affect foraging RTD directly, for example by increasing turbidity.
- Conduct boat-based transects (October to April) ideally on a fortnightly basis to establish the distribution and abundance of wintering RTD within the likely marine zone of influence of the Sizewell C project. This will help understand further the annual variations in RTD numbers offshore. When undertaking boat based surveys take the opportunity to monitor and record the behavioural response of RTD to disturbance from the survey vessel. Boat surveys on RTD should aim to use vessel movements required for other survey activities to reduce the overall number of vessel movements and limit the potential for disturbance.

5 References

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Appendix A

Vantage Point Locations and View sheds

Figure 1 (sheets 1 to 5) shows the location of each vantage point.



KEY
 ① VP LOCATION AND FIELD OF VIEW
 ◡ 1 KM VIEWSHED

01	VERSION 1	11 APR 13
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FIGURE 1 - SHEET 1 OF 5
VANTAGE POINT LOCATIONS
AND VIEWSHEDS

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**FIGURE 1 - SHEET 2 OF 5
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KEY
 1 VP LOCATION AND FIELD OF VIEW
 2 1KM VIEWSHED

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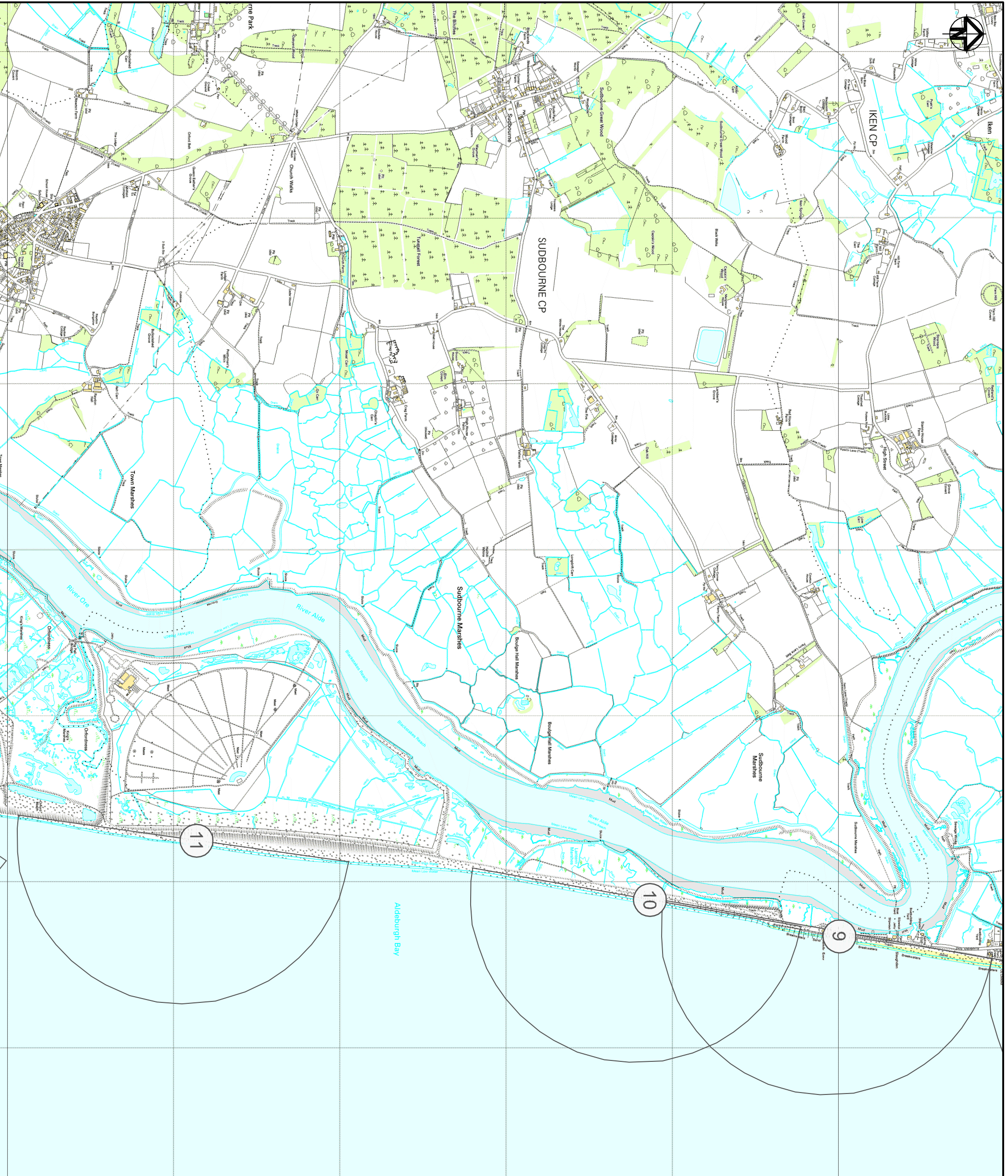


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 FIGURE 1 - SHEET 3 OF 5
 VANTAGE POINT LOCATIONS
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- ① VP LOCATION AND FIELD OF VIEW
- ◡ 1 KM VIEWSHED

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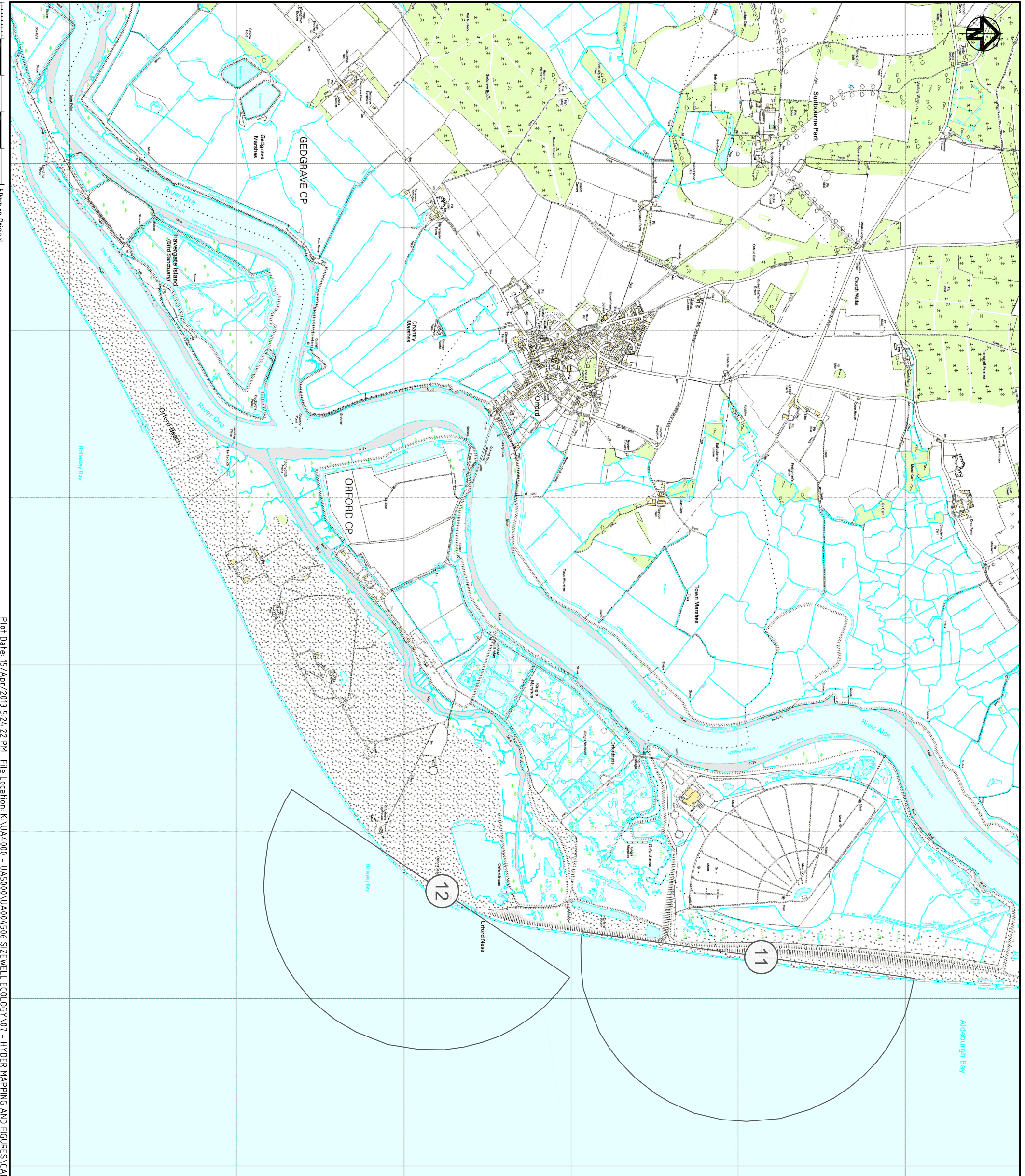


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FIGURE 1 - SHEET 4 OF 5
VANTAGE POINT LOCATIONS
AND VIEWSHEDS

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KEY

- ① VP LOCATION AND FIELD OF VIEW
- ◐ 1 KM VIEWSHED

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**FIGURE 1 - SHEET 5 OF 5
VANTAGE POINT LOCATIONS
AND VIEWSHEDS**

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Appendix B

Vantage Point Survey Timings, Tide and Weather Conditions

The following tables present the timings, state of the tide and weather conditions for the Hyder 2012/2013 VP survey. Those surveys that took place at dawn and dusk (restricted to the four VPs closest to Sizewell; i.e. VPs 1 – 4) are indicated with a ✓.

Vantage Point 1

Date	Start	Finish	Dawn survey	Dusk survey	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
31/10/2012	12:40	13:25			Light rain, showers, 10 degrees	Going out	Low: 17:27 High: 11:30	70	N	4	S	8
27/11/2012	12:10	12:55			Overcast, breezy	Falling	High: 09:54	40	Partly	5	N	7
28/11/2012	12:45	13:30			Drizzle, overcast	Mid tide	High:10:36 Low:16:25	50-70	N	3	N	6
12/12/2012	12:35	13:20			Dry, sunny, -2 degrees	Mid tide	High:09:20 Low:15:29	30	N	2	SW	1
18/12/2012	15:10	16:10		✓	Overcast, light rain	High	High:14:42	10	N	3	W	8
19/12/2012	07:20	08:20	✓		Misty, light breeze, 5 degrees	low	Low:09:07	20	N	2	SW	6
03/01/2013	11:00	11:45			9 degrees, dry	Coming in	High:05:05 Low:08:22	10	N	3	NW	7
21/01/2013	16:00	16:45		✓	Overcast, light snow	Mid tide	Low:12:29 High:19:08	40	partly	1	E	8
22/01/2013	07:25	08:10	✓		Dry, 1 degree, snow on ground	High	High:07:19 Low:13:28	80	Y	3	E	5
06/02/2013	10:25	11:10			Sunny spells, cold breeze, 5 degrees	Mid tide	High:06:50 Low:13:00	30	N	5	NW	7
18/02/2013	16:30	17:30		✓	Hazy at 1km, Light air	High	Low:10:01 High: 16:42	20	N	1	SW	2
19/02/2013	07:00	08:00	✓		Hazy at 1 km, light air	Mid tide	High: 05:28 Low:11:23	10	N	1	E	2
05/03/2013	12:55	13:40			10.8 degrees, mist at 1km	Coming in	High:16:20 Low:09:53	15	N	3	SE	0

Date	Start	Finish	Dawn survey	Dusk survey	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
26/03/2013	17:30	18:30		✓	2 degrees, windy, dry	Going out	High:22:21 Low:16:00	180	Y	7	NE	5
27/03/2013	06:00	07:00	✓		windy	Mid tide	High:10:57 Low:04:31	150	Y	5	NE	6

Vantage Point 2

Date	Start	Finish	Dawn survey	Dusk survey	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
30/10/2012	16:00	17:00		✓	-	Low water	Low:10:52 High: 16:57	30	N	1	SW	1
31/10/2012	06:15	07:15	✓		5 degrees, light breeze, dry	Halfway	Low: 05:12 High:11:30	40	N	2	S	6-7
26/11/2012	15:30	16:30		✓	Light breeze, dry	Just falling	Low:15:13 High:09:07	30	N	2	SW	4
27/11/2012	15:30	16:30		✓	Gentle breeze, heavy rain	Low	High:09:54 Low:15:51	40	N	3	N	8
28/11/2012	07:00	07:45	✓		Dawn, clear, cool, 5 degrees	rising	High:10:36 Low:04:14	40	N	3	NW	3
29/11/2012	07:00	08:00	✓		Dry, gentle breeze	rising	High:11:14 Low:04:41	50	N	3	NW	6
11/12/2012	15:30	16:30		✓	Calm, 1 degree, dry	low	High:08:25 Low:14:36	50	N	1	E	2
12/12/2012	06:45	07:30	✓		-4 degrees, dry, calm	Mid tide	Low:03:01 High:09:20	40	N	1	n/a	1
13/12/2012	12:00	12:45			Dry, moderate breeze	falling	High:10:15 Low:16:20	40	Y	4	SE	2

Date	Start	Finish	Dawn survey	Dusk survey	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
19/12/2012	13:15	14:00			Overcast, moderate breeze	rising	High:15:44	40	partly	4	SE	8
03/01/2013	12:00	12:45			9 degrees	Coming in	High:14:29	10	N	3	NW	8
21/01/2013	16:00	16:45			Light snow, overcast 0 degrees	Mid tide	Low:12:29 High:19:08	60	Y	1	n/a	8
22/01/2013	07:15	08:00	✓		Overcast, breezy	high	High:07:19 Low:13:28	50	partly	3	E	8
06/02/2013	09:25	10:10			Sunny, cold breeze, 2 degrees	Mid tide	High:06:50 Low:13:00	40	partly	4	N	5
18/02/2013	16:15	17:15		✓	2 degrees, full cloud cover, misty at 1km	High	Low:10:01 High: 16:42	20	Y	2	NW	8
19/02/2013	07:00	08:00	✓		0.1 degrees	Mid tide	High: 05:28 Low:11:23	5	N	1	n/a	2
05/03/2013	11:55	12:40			8.8 degrees, mist at 1km	Coming in	High tide:16:20 Low:09:53	15	N	3	SE	0
26/03/2013	17:30	18:30		✓	Windy	Low	High:22:21 Low:16:00	200	Y	6-7	E	2
27/03/2013	05:50	06:50	✓		1.5 degrees, windy, dry	Coming in	High:10:57 Low:04:31	150	Y	6	NE	7

Vantage Point 3

Date	Start	Finish	Dawn survey	Dusk survey	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
30/10/2012	16:00	17:00		✓	Calm, clear, good visibility	low	Low:16:22 High:22:50	30	N	0	n/a	0

Date	Start	Finish	Dawn survey	Dusk survey	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
31/10/2012	06:15	07:15	✓		-	Halfway between low and high	Low: 17:27 High:11:30	50	N	2	S	3
27/11/2012	15:30	16:00		✓	Overcast, windy, showers and heavy rain	Low	Low: 15:51	50	partly	6	N	8
28/11/2012	14:30	15:15		✓	drizzle	Just before low, falling	High:10:36 Low:16:25	40	N	3	N	4
29/11/2012	07:00	08:00	✓		Clear, cold, light breeze	Rising	High:11:14 Low:04:41	30	N	3	N	1-2
11/12/2012	15:30	16:30		✓	Calm, 1 degree, dry	low	High:08:25 Low:14:36	40	N	1	n/a	0
12/12/2012	06:45	07:30	✓		-4 degrees, dry, calm	Mid tide	Low:03:01 High:09:20	20	N	1	E	1
13/12/2012	11:00	11:45			Dry, moderate breeze	high	High:10:15 Low:16:20	40	Y	4	SE	2
19/12/2012	12:20	13:05			Overcast, gentle breeze, dry	rising	Low:09:40	40	partly	3	SE	8
02/01/2013	15:15	16:15			Light rain, breezy	high	High:13:59 Low:19:32	20	N	3	SW	7
03/01/2013	07:00	08:00		✓	9 degrees, dry	Going out	High:05:05 Low:08:22	5	N	2	SW	4
22/01/2013	09:45	10:30	✓		Overcast, 1 degree, snow on ground	falling	High:07:19 Low:13:28	60	Y	3	E	8
05/02/2013	16:15	17:15			Overcast, cold breeze, 4 degrees	Rising	High:18:18 Low:11:40	15	N	5	W	8
06/02/2013	07:00	08:00		✓	Overcast, breezy	high	High:06:50 Low:13:00	70	Y	4	N	7
19/02/2013	10:45	11:30	✓		2.4 degrees	low	High:18:03 Low:11:23	5	N	1	n/a	5
04/03/2013	16:45	17:45			Haze at 2km	Going out	High:15:19	30	N	3	E	2

Date	Start	Finish	Dawn survey	Dusk survey	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
							Low:21:14					
05/03/2013	06:25	07:25		✓	Mist in distance, 5.9 degrees	Going out	High:03:48 Low:09:53	10	N	1	n/a	0
27/03/2013	12:45	13:30	✓		Windy	High	High:10:57 Low:16:41	100	Y	4-5	E	2

Vantage Point 4

Date	Start	Finish	Dawn survey	Dusk survey	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
31/10/2012	10:45	11:30			Dry, 10 degrees, moderate breeze	high	Low: 05:12 High:11:30	45	N	4	SE	8
27/11/2012	07:00	07:45	✓		Dry, calm	Rising	High:09:54 Low:15:51	30	N	0	n/a	6
28/11/2012	07:00	07:45	✓		Dry	Rising	High:10:36 Low:16:25	50	N	2	N	2
12/12/2012	14:20	15:05			Dry, sunny, 0 degrees	low	Low:15:29 High:21:55	30	N	2	SW	3
18/12/2012	15:10	16:10		✓	Light mist	high	High:14:42 Low:08:16	30	N	1	SW	3
19/12/2012	07:00	08:00	✓		Foggy	falling	High:02:34 Low:09:07	20	N	1	SW	4
02/01/2013	15:15	16:15		✓	6 degrees, dry	high	High:13:59 Low:19:32	20	N	2	SE	8
03/01/2013	07:00	08:00	✓		Dry, light breeze	Just before low	Low: 08:22	30	N	3	SE	2
22/01/2013	08:50	09:35			Overcast 1 degree, snow on ground	falling	High:07:19 Low:13:28	90	Y	4	E	8

Date	Start	Finish	Dawn survey	Dusk survey	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
05/02/2013	16:15	17:15		✓	Dry, light breeze	Almost high	High:18:18 Low:11:40	20	N	2	W	4
06/02/2013	07:00	08:00	✓		Overcast, cold breeze, 2 degrees	high	High:06:50 Low:13:00	30	N	3	NW	7
19/02/2013	11:50	12:35			7.8 degrees	low	High:18:03 Low:11:23	5	N	1	n/a	1
04/03/2013	16:45	17:45		✓	5 degrees	Going out	High tide:15:19 Low:21:14	10	N	3	SE	7
05/03/2013	06:30	07:30	✓		Haze at 2km	Going out	High:03:48 Low:09:53	20	N	2	E	1
27/03/2013	14:00	04:45			Dry	Mid tide	High:10:57 Low:16:41	100	Y	4	E	2

Vantage Point 5

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
31/10/2012	09:20	10:05	Dry, windy	Incoming	Low: 05:12 High:11:30	50	N	4	SE	7-8
27/11/2012	14:05	14:50	Overcast, heavy rain, windy	Mid tide	Low: 15:51 High:09:54	50	partly	6	N	8
28/11/2012	15:30	16:15	Dry	Falling tide	High:10:36 Low:16:25	70	N	4	N	2
12/12/2012	15:20	16:05	Dry, 0 degrees	low	Low:15:29 High:21:55	30-40	N	2	SW	5
19/12/2012	10:55	11:40	Overcast, light breeze, dry	rising	Low:09:40	30	N	2	SE	8
03/01/2013	13:25	14:10	9 degrees, dry, overcast	Going in	Low: 08:22 High:14:39	10	N	2	SW	7

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
22/01/2013	14:25	15:10	3 degrees, snow on ground, dry	rising	Low:13:28 High:20:06	60	N	4	E	5
06/02/2013	08:10	08:55	Overcast, sunny spells, 2 degrees	Falling	High:06:50 Low:13:00	40	partly	4	N	5
19/02/2013	12:55	13:40	10.1 degrees	Mid	High:18:03 Low:11:23	5	N	2	NW	5
05/03/2013	10:20	11:05	8.7 degrees, mist at 600-800m	Coming in	High:03:48 Low:09:53	30	Y	2	S	0
27/03/2013	15:00	15:45	Dry	Mid tide	High:10:57 Low:16:41	100	Y	3-4	E	2

Vantage Point 6

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
31/10/2012	08:15	09:00	Overcast, cold, moderate breeze	Incoming		45	N	4-5	SE	8
27/11/2012	07:00	07:45	Dry, calm	Rising	High:09:54 Low:15:51	30	N	0	n/a	4
28/11/2012	08:30	09:15	Dry, gentle breeze	Rising	High:10:36 Low:16:25	30	N	2	N	3
12/12/2012	08:00	08:45	Dry, sunny, c1 degree	high	Low:03:01 High:09:20	60	N	2	E	0
19/12/2012	10:00	10:45	Overcast, calm, 5 degrees	low	Low:09:40	15	N	1	-	8
03/01/2013	14:30	15:15	9 degrees, calm	high	Low: 08:22 High:14:39	10	N	2	SW	6
22/01/2013	15:30	16:15	2 degrees, dry, snow on ground	Mid tide	Low:13:28 High:20:06	60	partly	4	E	6
06/02/2013	16:05	16:50	Overcast, showers, windy	Mid tide	Low:13:00 High: 19:25	50	partly	7	NW	8

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
19/02/2013	14:20	15:05	10.2 degrees	mid	High:18:03 Low:11:23	5	N	2	NW	1
05/03/2013	08:50	09:35	7.5 degrees	Going out	High:03:48 Low:09:53	20	N	2	S	0
27/03/2013	16:15	17:00	windy	Low	High:10:57 Low:16:41	100	Y	4	E	2

Vantage Point 7

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
31/10/2012	14:30	15:15	-	Halfway	Low:17:27 High:11:30	100	Y	5	S	3
27/11/2012	14:35	15:20	Heavy showers, windy	Falling	High: 09:54 Low:15:51	40	N	3-4	N	7
28/11/2012	08:30	09:15	Sunny, cold and 5 degrees	rising	High:10:36	30	N	3-4	NW	2
12/12/2012	08:00	08:45	Dry, calm	high	Low:03:01 High:09:20	40	N	0	SE	1
19/12/2012	09:05	09:50	Overcast, misty 5 degrees	high	Low:09:07 High:15:44	15	N	1-2	-	8
03/01/2013	15:25	16:10	9 degrees, overcast	Going out	Low: 08:22 High:14:39	10	N	2	SW	7
22/01/2013	15:40	16:25	Overcast, windy	low	Low:13:28 High:20:06	40	partly	6	E	6
06/02/2013	16:15	17:00	Wet, windy	Mid tide	Low:13:00 High: 19:25	100	Y	7-8	N	6
19/02/2013	15:15	16:00	5-7 degrees	Mid	Low:13:00 High: 19:25	5	N	2	NW	0
05/03/2013	15:45	16:30	hazy	High	High:16:20 Low:09:53	30	N	2	SW	2

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
27/03/2013	15:15	16:00	Dry, 3 degrees, windy	Outgoing	High:10:57 Low:16:41	100	Y	5	NE	6

Vantage Point 8

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
31/10/2012	13:15	14:00	-	Halfway	Low:17:27 High:11:30	100	Y	4	S	3-7
27/11/2012	13:45	14:30	Ground frost, light showers, overcast	Falling	High:09:45 Low:15:51	40	N	4	N	7
28/11/2012	09:30	10:15	Sunny, cold breeze, dry	high	High:10:50	25	N	3-4	NW	2-6
12/12/2012	08:45	09:00	Dry, calm	high	Low:03:01 High:09:20	30	N	0	n/a	4
19/12/2012	15:15	16:00	Dry, breezy	high	High:15:44 Low:09:07	50	N	3	SW	8
03/01/2013	08:30	09:15	Dry, light breeze	low	High:05:05 Low:08:22	20	N	3	SE	2
22/01/2013	14:45	15:30	Overcast, sunny spells	rising	Low:13:28 High:20:06	40	partly	4	E	5
06/02/2013	15:15	16:00	Windy, drizzle	Mid tide	Low:13:00 High: 19:25	100	Y	7	NW	2
19/02/2013	08:45	09:30	Haze at 1.5 km	Mid tide	High: 05:28 Low:11:23	10	N	1	E	2
05/03/2013	14:45	15:30	Haze at 1km	Coming in	High:16:20 Low:09:53	20	N	1	E	2
27/03/2013	14:15	15:00	Dry, sunny, 3 degrees	Outgoing	High:10:57 Low:16:41	100	Partially	4	NE	3

Vantage Point 9

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
31/10/2012	12:00	12:45	-	Just after high tide	Low:17:27 High:11:30	150	Y	5	S	7
27/11/2012	12:45	13:30	Drizzle, windy	Mid tide	High:09:54 Low:15:51	50	N	4	N	9
28/11/2012	10:35	11:20	Overcast, cold breeze	High	High:10:36	30	N	3	NW	7
12/12/2012	09:45	10:30	Dry, light wind	high	Low:03:01 High:09:20	30	N	1	E	2
19/12/2012	14:00	14:45	Dry, gentle breeze,	rising	High:15:44 Low:09:07	40	N	3	SW	6
03/01/2013	09:30	10:15	Dry, light breeze	low	High:05:05 Low:08:22	20	N	3	SW	4
22/01/2013	13:40	14:25	Overcast, breezy	low	Low:13:28 High:20:06	40	partly	4	E	7
06/02/2013	14:15	15:00	Overcast, windy, drizzle	low	Low:13:00 High: 19:25	70	Y	6	NW	6
19/02/2013	10:15	11:00	Haze at 1km	low	High: 05:28 Low:11:23	10	N	2	E	6
05/03/2013	13:45	14:30	hazy	Coming in	High:16:20 Low:09:53	30	Y	2	E	0
27/03/2013	13:15	14:00	Dry, sunny, 3 degrees	Outgoing	High:10:57 Low:16:41	120	Y	5	NE	3

Vantage Point 10

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
31/10/2012	11:30	12:15	-		Low:17:27 High:11:30	100	N	4	S	6
27/11/2012	11:35	12:10	Dry, overcast	Mid tide	High:09:54	30	N	2	NE	7

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
					Low:15:59					
28/11/2012	12:10	12:55	Overcast, windy	falling	High:10:36	40	partly	5-6	NW	3-6
12/12/2012	11:05	11:50	Dry, light wind	falling	High:09:20 Low:15:29	30	N	1	E	2
19/12/2012	12:15	13:00	Dry, light breeze	Mid tide	High:15:44 Low:09:07	30	N	2	SW	8
03/01/2013	11:00	11:45	Dry, light breeze	Mid tide	High:05:05 Low:08:22	20	N	3	SW	2
22/01/2013	12:20	13:05	Sunny spells, breezy	falling	Low:13:28 High:20:06	40	partly	4	E	7
06/02/2013	12:45	13:30	Wet, windy	low	Low:13:00 High: 19:25	10	Y	7	N	7
19/02/2013	12:00	12:45	Haze at 3km	High	High:18:03 Low:11:23	10	N	1	E	1
05/03/2013	12:15	13:00	Haze at 500m and beyond	Coming in	High:16:20 Low:09:53	30	Y	2	E	1
27/03/2013	11:50	12:35	Dry, 2 degrees, sunny	Going out	High:10:57 Low:16:41	120	Y	5	NE	4

Vantage Point 11

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
31/10/2012	10:20	11:10	-	high	Low: 17:27 High:11:30	50	N	3	S	7
27/11/2012	10:20	11:10	Dry	Just after high tide	High:09:54 Low:15:51	20	N	2	SW	6
28/11/2012	13:10	13:55	Overcast, sunny spells, cold breeze, occ. showers	Mid way to low tide	Low:16:25	30	N	5-6	NW	5-7
12/12/2012	12:30	13:45	Dry, light breeze	Mid tide	High:09:20	30	N	2	E	2

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
					Low:15:29					
19/12/2012	11:00	11:45	Dry, gentle breeze	Mid tide	High:15:44 Low:09:07	20	N	1	SW	6
03/01/2013	12:30	13:15	Dry, calm	Mid tide	Low: 08:22 High:14:39	20	N	2	SW	2
22/01/2013	11:05	11:50	Overcast, breezy	falling	High:07:19 Low:13:28	40	partly	4	E	7
06/02/2013	12:00	12:45	Overcast, strong breeze	low	High:06:50 Low:13:00	60	Y	5	N	6
19/02/2013	13:00	13:45	Haze at 3km	Mid	High:18:03 Low:11:23	10	N	2	E	1
05/03/2013	10:45	11:30	Haze at 1km	Coming in	High:16:20 Low:09:53	40	Y	2	E	2
27/03/2013	10:45	11:30	Dry, 2 degrees, windy	High	High:10:57 Low:04:31	150	Y	5	NE	6

Vantage Point 12

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
31/10/2012	09:00	09:45	-	High	Low:17:27 High:11:30	40	N	3	S	7
27/11/2012	09:05	09:40	Dry, calm	Just before high tide	High:09:54 Low:15:51	10	N	0	n/a	7
28/11/2012	14:30	15:15	Sunny, cold breeze	Going out	Low:16:25	40	N	6	NW	4
12/12/2012	14:15	15:00	Dry, gentle breeze	low	Low:15:29 High:21:55	20	N	1	E	4
19/12/2012	09:30	10:15	Dry, calm	high	Low:09:07 High:15:44	20	N	0	-	6
03/01/2013	14:30	15:15	Dry, breezy	high	Low: 08:22 High:14:39	20	N	3	SW	3

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
22/01/2013	09:25	10:10	Overcast, breezy, cold	falling	High:07:19 Low:13:28	50	partly	3	E	7-8
06/02/2013	10:00	10:45	Overcast, breezy	Mid tide	High:06:50 Low:13:00	40	N	4	N	7
19/02/2013	14:45	15:30	Haze at 3km	Mid	Low:13:00 High: 19:25	10	N	3	E	0
05/03/2013	09:00	09:45	Haze at 1km	Going out	High:03:48 Low:09:53	30	N	2	E	2
27/03/2013	09:00	09:45	2 degrees, dry, windy	Coming in	High:10:57 Low:04:31	120	Y	5	NE	5

Vantage Point 13

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
31/10/2012	13:45	14:30	Dry, windy, 10 degrees	Going out	Low:17:27 High:11:30	70	Y	5	S	7
27/11/2012	11:05	11:50	Overcast, sunny spells, breezy	High	High:09:54	30	partly	4	N	6
28/11/2012	11:50	12:35	Drizzle, light breeze	Mid tide	High:10:36 Low:16:25	40	N	2-3	N	6
12/12/2012	11:30	12:15	Sunny, dry, -2 degrees	Mid tide	High:09:20 Low:15:29	20-30	N	2	SW	1
19/12/2012	14:40	15:25	Overcast, breezy	rising	Low:09:07 High:15:44	50	partly	4-5	SE	8
03/01/2013	09:00	09:45	9 degrees, dry	Coming in	High:05:05 Low:08:22	10	N	3	NW	6-7
22/01/2013	11:00	11:45	Overcast, 2 degrees, snow on ground	Going out	High:07:19 Low:13:28	70	Y, partly	3	E	8
06/02/2013	12:30	13:15	Overcast, wet, windy	low	Low:13:00 High: 19:25	40	partly	6	NW	8

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
19/02/2013	09:15	10:00	1 degree, light air	Mid	High: 05:28 Low:11:23	5	N	1	n/a	5
05/03/2013	14:45	15:30	9.2 degrees, mist at 1km	Coming in	High:16:20 Low:09:53	30	Y	2	SE	1
27/03/2013	11:00	11:45		High	High:10:57 Low:04:31	150	Y	5	E	2

Vantage Point 14

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
31/10/2012	14:45	15:30	Dry, windy, 9 degrees	Going out	Low:17:27 High:11:30	70	N	5	S	6
27/11/2012	10:00	10:45	Overcast, sunny spells, light breeze	high	High:09:54	15	N	3	N	5
28/11/2012	11:00	11:45	Drizzle, gentle breeze	Mid tide	High:10:36 Low:16:25	40	N	3	N	4
12/12/2012	10:30	11:15	Dry, sunny, -2 degrees	high	High:09:20 Low:15:29	20-30	N	2	SW	2
18/12/2012	14:00	14:45	Dry, gentle breeze	high	High:14:42 Low:08:16	20	N	1	SW	4
04/01/2013	09:15	10:00	9.5 degrees, calm	Coming in	Low:09:05 High:15:25	10	N	2	NW	8
22/01/2013	12:00	12:45	Overcast, 2 degrees, snow on ground	low	High:07:19 Low:13:28	60	Partly	3	E	8
18/02/2013	14:45	15:30	3.5 degrees, moderate visibility, full cloud cover	high	Low:10:01 High: 16:42	20	Y	2	NW	8
05/03/2013	15:45	16:30	Mist at 1km, 8.4 degrees	High	High:16:20 Low:09:53	30	Y	2	SE	1
27/03/2013	10:00	10:45	Windy, dry	High	High:10:57 Low:04:31	150	Y	5	E	4

Vantage Point 15

Date	Start	Finish	Weather	Tide High/Low	Tide times	Wave height	Vis obscured by waves?	Wind speed (Beaufort)	Wind direction	Cloud cover (8ths)
31/10/2012	15:45	16:30	Overcast, cold, dry	Going out	Low:17:27 High:11:30	70	partly	5	S	8
27/11/2012	08:45	09:30	Overcast, gentle breeze, cold, 1 light rain shower	high	High:09:54	10	N	3	N	6-7
28/11/2012	10:00	10:45	Drizzle, overcast	High	Low:10:36 High:16:25	30	N	2	N	6
12/12/2012	09:15	10:00	-4 degrees, dry, clear	high	Low:03:01 High:09:20	20	N	2	SW	2
18/12/2012	13:40	14:25	Overcast, sunny spells	high	High: 14:42	5	N	2	W	7
04/01/2013	09:15	10:00	Overcast, breezy	low	Low:09:05 High:15:25	20	N	3	SW	8
22/01/2013	13:00	13:45	Overcast, 1 degree, snow on ground	low	High:07:19 Low:13:28	50	N	4	E	8
06/02/2013	14:45	15:30	Overcast	rising	Low:13:00 High: 19:25	40	partly	7-8	N	8
18/02/2013	14:45	15:30	Hazy, light breeze, dry	Mid tide	Low:10:01 High: 16:42	20	N	2	SW	2
05/03/2013	16:45	17:30	8.2 degrees, misty	going out	High:16:20 Low:22:22	10	N	2	SE	1
27/03/2013	09:00	09:45	Windy, dry	Mid tide	High:10:57 Low:04:31	150	Y	5	E	4

Appendix C

2012/2013 Wintering Red-throated Diver VP Survey Results

The following table shows all of the red-throated diver observations made during the period October 2012 to the end of March 2013. If no red-throated divers were recorded from a VP on a particular date then this will have been omitted from the table. Dawn and dusk surveys were only conducted at VPs 1- 4.

Table 1: Red-throated diver - Wintering VP surveys results (October 2012 to March 2013)

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R)
1	28/11/2012	13:15			2000	500	1	C
1	12/12/2012	12:56			1000	200	1	C-took off from water
1	18/12/2012	15:11		✓	1000	200	1	F
1	18/12/2012	15:12		✓	1250	200	1	R
1	18/12/2012	15:15		✓	2000	400	1	C
1	18/12/2012	15:15		✓	2000	400	1	C
1	19/12/2012	08:05	✓		1000	200	2	C
1	22/01/2013	08:02	✓		800	100	1	C S to N
1	06/02/2013	10:31			1200	200	1	C S to N
1	06/02/2013	10:33			2000	250	1	C N to S, then turned back S to N
1	06/02/2013	10:49			750	100	1	C S to N, then landed
1	06/02/2013	11:06			2000	250	1	C N-S
1	19/02/2013	07:30	✓		700	200	2	C to N
1	19/02/2013	07:45	✓		1000	200	4	C to N
1	19/02/2013	07:50	✓		1500	300	2	C to S
1	05/03/2013	13:00			1000	300	36	F/R
1	05/03/2013	13:00			700	250	36	F/R
1	05/03/2013	13:00			300	150	36	F/R

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R)
1	27/03/2013	06:20	✓		1000	200	1	C to N
1	27/03/2013	06:30	✓		1000	200	3	C to S
1	27/03/2013	06:50	✓		1000	200	4	C to N
1	27/03/2013	06:51	✓		1000	200	1	C to S
2	13/12/2012	12:05	✓		500	100	1	C to N
2	13/12/2012	12:15	✓		2000	200	5	C to S
2	19/12/2012	13:27			750	200	2	F
2	19/12/2012	13:45			1500	250	3	C
2	19/12/2012	13:48			2000	250	1	R
2	06/02/2013	09:40			2000	250	1	C S to N
2	06/02/2013	09:49			1250	260	1	C then landed S to N
2	06/02/2013	09:52			2000	250	1	C S to N, then landed
2	06/02/2013	09:57			2000	250	1	C N to S (possibly same bird
2	06/02/2013	10:07			1500	250	3	C S to N
2	06/02/2013	10:07			1750	250	1	C S to N
2	05/03/2013	12:05			400	100	1	F
2	05/03/2013	12:12			700	200	7	F
2	05/03/2013	12:18			800	200	1	C
2	05/03/2013	12:18			350	100	2	F
2	05/03/2013	12:25			800	300	22	F,R
2	05/03/2013	12:35			700	200	1	C S to N
2	05/03/2013	12:35			300	50	1	F
2	27/03/2013	06:35	✓		700	100	5	C N to S
2	27/03/2013	06:19	✓		450	50	2	C N to S
3	31/10/2012	06:30	✓		1500	100	6	C
3	28/11/2012	14:40		✓	1000	500	1	C
3	12/12/2012	11:15	✓		1500	300	1	C to S
3	12/12/2012	11:30	✓		200	50	1	R on surface
3	12/12/2012	11:40	✓		2500	500	1	C to N
3	19/12/2012	12:29			750	250	2	R
3	19/12/2012	12:42			1000	250	1	C

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R)
3	19/12/2012	12:55			2000	250	10	In distance, probable divers
3	22/01/2013	09:58			1200	200	1	C N to S
3	22/01/2013	10:21			1800	300	1	C S to N
3	06/02/2013	07:20	✓		1000	200	5	C to N
3	05/03/2013	07:00	✓		500	100	6	R/F
3	05/03/2013	07:00	✓		800	150	4	R/F
3	05/03/2013	07:12	✓		1000	200	10	C/possibly same birds as above
3	05/03/2013	07:15	✓		800	150	2	C/possibly same birds as above
3	05/03/2013	06:55	✓		700	100	6	R/F
3	27/03/2013	12:50			1000	200	3	C to S
3	27/03/2013	12:50			300	50	1	F
3	27/03/2013	13:10			1000	300	3	C to N
3	27/03/2013	13:25			1500	400	3	C to N
3	27/03/2013	13:40			1000	300	2	C to N
4	18/12/2012	15:10		✓	200	50	1	F
4	05/02/2013	16:50		✓	1000	200	1	F to N
4	06/02/2013	07:15	✓		1750	250	1	C S to N
4	06/02/2013	07:29			2000	250	1	C S to N
4	06/02/2013	07:56			1750	250	1	C S to N
4	05/02/2013	16:20			500	100	1	R
4	19/02/2013	11:53			1300	300	1	F
4	19/02/2013	12:10			1300	300	1	C, then landed and dived
4	19/02/2013	12:12			1500	300	1	F
4	19/02/2013	12:17			2000	500	4	R
4	19/02/2013	12:17			2000	500	1	C
4	19/02/2013	12:18			2000	500	2	F
4	19/02/2013	12:34			1800	500	1	C
4	05/03/2013	06:30	✓		1000	200	5	C
4	05/03/2013	06:45	✓		500-1000	300	40	R, then C
4	05/03/2013	07:00	✓		500	100	5	F
4	05/03/2013	07:15	✓		300-500	100	16	R/F

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R)
4	27/03/2013	14:30			1500	300	3	C to N
4	27/03/2013	14:40			2000	400	2	C to N
5	12/12/2012	15:40			1100	250	2	C
5	19/12/2012	10:55			1000-2000		5	F/R
5	19/12/2012	11:23			2000	300	6	C
5	19/12/2012	11:36			400	50	1	C, then landed
5	03/01/2013	13:58			1000	200	1	C, then turned, landed and dived
5	03/01/2013	14:09			1100	200	1	C, then landed
5	22/01/2013	14:44			700	150	1	C S to N
5	06/02/2013	08:20			2000	250	1	C N to S
5	06/02/2013	08:27			1500	250	1	C S to N
5	06/02/2013	08:31			1000	200	1	C S to N
5	06/02/2013	08:46			2000	250	1	C S to N
5	19/02/2013	13:37			2000	500	1	R
5	05/03/2013	10:21			800	150	1	C N to S
5	05/03/2013	10:25			550	200	15	C N to S
5	05/03/2013	10:30			500	100	2	C N to S
5	05/03/2013	10:44			700	200	2	R
5	05/03/2013	10:44			900	200	1	C N to S
5	05/03/2013	10:50			500	100	1	C N to S
5	05/03/2013	10:50			550	100	1	R
5	05/03/2013	11:02			700	200	2	C N to S
5	27/03/2013	15:15			500	100	3	C to N
6	28/11/2012	09:00			1500	500	1	C
6	19/12/2012	10:00			500-1500		20	20 birds F, some others further away too far to ID but probable divers
6	06/02/2013	16:14			2000	200	1	C S to N
6	06/02/2013	16:23			1750	250	1	C S to N
6	27/03/2013	16:30			200	50	2	F
7	12/12/2012	09:10			30	50	1	C to N
7	12/12/2012	09:15			500	100	1	C to N

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R)
7	12/12/2012	09:05			1000	200	2	C to N
7	19/12/2012	09:05			700	200	12	F-birds spread across survey window, F throughout survey
7	03/01/2013	15:46			50	10	1	F (dived)
7	06/02/2013	16:20			200	50	1	F
7	19/02/2013	15:40			500	100	1	F
7	05/03/2013	16:00			700-1000	300	20	F/R
7	05/03/2013	16:00			1500	400	4	C
7	05/03/2013	16:15			500-700	200	27	F/R
7	05/03/2013	16:15			1500	400	3	C
7	05/03/2013	16:30			1000	400	14	F
7	05/03/2013	16:30			1500	400	4	C
7	27/03/2013	15:15			600	200	4	C
7	27/03/2013	15:35			600	200	5	C
8	12/12/2012	08:50			200	100	1	F
8	12/12/2012	09:20			500	200	1	C
8	03/01/2013	09:32			1000	200	2	C to S
8	03/01/2013	08:40			300	100	1	C to S
8	03/01/2013	08:45			300	100	2	F
8	22/01/2013	15:17			2000	250	1	C to N
8	22/01/2013	15:24			1500	250	1	F
8	06/02/2013	15:20			300	100	2	F
8	06/02/2013	15:50			700	200	1	C
8	19/02/2013	09:00			1000	200	3	C to S
8	19/02/2013	09:00			500	100	1	F
8	19/02/2013	09:15			1500	300	3	C to S
8	19/02/2013	09:15			500	100	3	F
8	05/03/2013	15:00			700	200	24	R/F
8	05/03/2013	15:00			700	300	4	C to N
8	05/03/2013	15:10			1000	500	44	R/F
8	05/03/2013	15:10			1000	300	3	C to N

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R)
8	05/03/2013	15:20			700-1500	300	33	R/F
8	05/03/2013	15:20			1000	300	5	C to N
8	05/03/2013	15:30			700-1500	200	30	R/F
8	05/03/2013	15:30			2000	400	4	C to S
8	27/03/2013	14:20			600	300	27	C
9	12/12/2012	10:00			500	100	1	C
9	12/12/2012	10:15			500	100	2	F
9	12/12/2012	10:20			1000	200	2	C
9	12/12/2012	10:30			1000	200	2	C
9	19/12/2012	14:15			300	100	1	F
9	19/12/2012	14:17			1000	300	2	C to N
9	03/01/2012	10:10			700	200	1	C to S
9	22/01/2013	13:58			2000	300	1	C to N
9	06/02/2013	14:30			500	100	1	C to N
9	06/02/2013	14:35			200	50	4	F
9	06/02/2013	14:40			300	100	2	F
9	19/02/2013	10:17			700	100	2	F
9	19/02/2013	10:17			1000	200	2	C to S
9	19/02/2013	10:25			100		1	C to S
9	19/02/2013	10:30			1000	200	2	C to S
9	19/02/2013	10:30			500	100	2	F
9	19/02/2013	10:35			500	100	6	F
9	19/02/2013	10:40			1000	200	1	F
9	19/02/2013	10:45			1500	300	8	C to S
9	05/03/2013	13:50			500	700	25	C to N
9	05/03/2013	13:50			400	100	22	F
9	05/03/2013	14:00			300-1000	200	38	R/F
9	05/03/2013	14:00			1500	200	2	C to N
9	05/03/2013	14:10			500	300	48	R/F
9	05/03/2013	14:25			700	200	28	R/F
9	05/03/2013	14:25			1500	300	4	C to S

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R)
9	27/03/2013	13:15			900	600	16	C
9	27/03/2013	13:40			400	100	1	F
10	31/10/2012	11:40			1500	100	4	C
10	28/11/2012	12:28			1500	250	1	C, then landed
10	28/11/2012	12:29			1500	250	1	C, then landed
10	28/11/2012	12:34			1250	250	2	C, then landed
10	28/11/2012	12:37			2000	250	1	C, then landed
10	28/11/2012	12:40			1250	150	1	C, then landed
10	27/11/2012	11:55			1000	100	1	C
10	12/12/2012	11:15			1000	200	4	C N
10	12/12/2012	11:40			1000	200	1	C N
10	19/12/2012	12:30			200	50	2	F
10	19/12/2012	12:45			1000	100	3	C to N
10	19/12/2012	13:00			300	100	1	F
10	03/01/2013	11:45			700	300	1	C to N
10	22/01/2013	12:40			500-2000	200	11	F
10	22/01/2013	13:00			2000	150	1	C to N
10	06/02/2013	13:10			200	50	3	F
10	06/02/2013	13:20			500	100	4	F
10	19/02/2013	12:00			500	100	7	F
10	19/02/2013	12:15			1000	200	2	C to S
10	19/02/2013	12:30			2000	300	11	C to N
10	19/02/2013	12:45			700	300	7	F
10	19/02/2013	12:45			1500	300	11	C to N and S
10	19/02/2013	12:47			500-1000	200	17	F
10	05/03/2013	12:20			500-100	200	20	F
10	05/03/2013	12:20			1500	400	6	C, N and S
10	05/03/2013	12:35			1500-2000	400	27	C, mainly S
10	05/03/2013	12:35			3000	100	2	F
10	05/03/2013	12:45			300	100	3	F
10	05/03/2013	12:45			2000	300	3	C

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R)
10	05/03/2013	13:00			2000	300	3	C to S
10	05/03/2013	13:00			300-700	200	4	F
10	27/03/2013	11:50			900	600	64	C-S to N
11	27/11/2012	10:30			1000	200	1	C
11	27/11/2012	10:30			500	10	2	C
11	28/11/2012	13:18			1250	250	1	C, then landed
11	28/11/2012	13:20			2000	250	1	C
11	28/11/2012	13:34			2000	250	1	C, then landed
11	12/12/2012	12:30			100	50	2	F
11	12/12/2012	12:45			300	100	1	F
11	12/12/2012	13:00			100	50	1	F
11	12/12/2012	13:15			1000	200	2	C to N
11	12/12/2012	13:17			1500	300	5	C to N
11	19/12/2012	11:00			300-100		10	F between shore and offshore sand bank
11	19/12/2012	11:15			300	100	8	F
11	19/12/2012	11:20			500-1000		10	C
11	19/12/2012	11:30			500-1000		7	C
11	03/01/2013	13:10			500	200	1	C to N
11	22/01/2013	11:08			750	200	1	F
11	22/01/2013	11:10			1000	250	1	F
11	22/01/2013	11:15			1500	250	2	F/R
11	22/01/2013	11:19			2000	250	1	C to N
11	22/01/2013	11:20			1500	250	1	C to S
11	22/01/2013	11:28			1500	250	1	F
11	22/01/2013	11:41			750	200	1	C to S
11	22/01/2013	11:45			2000	250	1	C to S
11	22/01/2013	11:49			1500	250	2	C to S
11	06/02/2013	12:05			1000	200	2	C to S
11	06/02/2013	12:05			350	100	4	F
11	06/02/2013	12:10			1000	200	2	C to S
11	06/02/2013	12:10			300	50	4	F

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R)
11	06/02/2013	12:30			100	50	2	F
11	19/02/2013	13:15			300-500	100	40	R,F
11	19/02/2013	13:25			1500	200	4	R
11	19/02/2013	13:40			1500	300	30	R,F
11	19/02/2013	13:45			2000	400	3	C to N and S
11	05/03/2013	10:50			300-700	300	48	F
11	05/03/2013	10:50			1000	200	2	C
11	05/03/2013	11:10			300-500	200	61	F
11	05/03/2013	11:10			500-1000	300	10	C to S
11	05/03/2013	11:25			300-700	200	55	F
11	05/03/2013	11:25			500-1000	200	4	C to S
11	05/03/2013	11:30			300-700	200	32	F
11	05/03/2013	11:30			700-1500	200	15	F,C
11	27/03/2013	10:50			600	200	11	C S to N
11	27/03/2013	11:10			600	300	28	C S to N
12	28/11/2012	14:39			1750	250	1	C
12	28/11/2012	14:56			1500	250	1	C, then landed
12	12/12/2012	14:15			1000	200	1	C to S
12	12/12/2012	14:45			700	200	2	C to N
12	19/12/2012	09:30			200	50	2	C to N
12	19/12/2012	09:40			300	100	4	F
12	19/12/2012	09:40			500	200	8	C to N
12	19/12/2012	09:50			1000	200	4	C to S
12	19/12/2012	09:51			300	100	1	F
12	03/01/2013	14:30			500	200	1	C to N
12	03/01/2013	14:35			1500	300	1	C to N
12	03/01/2013	14:40			500	200	2	C to N
12	03/01/2013	14:41			1000	300	7	C to S
12	03/01/2013	14:45			1000	300	6	C to N
12	03/01/2013	14:15			500		5	C to N
12	03/01/2013	15:05			100		1	F

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R)
12	22/01/2013	09:32			2000	500	2	C to S
12	22/01/2013	09:45			1250	200	1	C to S
12	22/01/2013	09:48			1500	200	3	C to N
12	22/01/2013	09:55			1500	200	1	C to S
12	22/01/2013	09:57			1500	200	1	C to S
12	22/01/2013	10:02			750	100	2	C to N
12	22/01/2013	10:06			1750	250	1	C to N
12	22/01/2013	10:08			1000	250	1	F
12	06/02/2013	10:00			500	100	4	C to S
12	06/02/2013	10:05			200	100	15	F
12	06/02/2013	10:05			1000	200	23	C mainly S
12	06/02/2013	10:05			300	100	18	F
12	06/02/2013	10:15			500-1500	200	14	C mainly S
12	06/02/2013	10:15			300-500	100	9	F
12	06/02/2013	10:20			500-1500	200	10	C mainly S
12	06/02/2013	10:20			200-500	100	6	F
12	06/02/2013	10:30			1000	200	2	C to S
12	06/02/2013	10:30			300	100	8	F
12	06/02/2013	10:40			200	200	6	C to S
12	06/02/2013	10:40			1500	100	2	F
12	19/02/2013	14:50			300-500	100	15	F,R
12	19/02/2013	14:55			1000	300	10	C
12	19/02/2013	15:15			500-700	300	9	F
12	19/02/2013	15:20			1000	400	2	C
12	19/02/2013	15:30			2000	400	2	C
12	05/03/2013	09:00			300-700	200	25	F
12	05/03/2013	09:00			1000	300	5	C
12	05/03/2013	09:20			500-1000	200	52	F
12	05/03/2013	09:40			500-1000	300	65	F
12	27/03/2013	09:03			150-900	100	26	F
12	27/03/2013	09:10			500	250	19	C

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R)
13	31/10/2012	14:11			650	100	2	C N to S
13	27/11/2012	11:20			1750	250	1	C
13	12/12/2012	11:38			400	200	4	F
13	12/12/2012	11:50			1000	250	1	C
13	12/12/2012	11:57			850	150	1	C
13	19/12/2012	14:45			500	100	1	R
13	19/12/2012	14:59			1000	250	2	C S-N
13	19/12/2012	15:03			750	100	2	C N-S (poss. same birds)
13	03/01/2013	09:00			500	100	1	F
13	22/01/2013	11:24			300	100	1	Landed, then F
13	22/01/2013	11:31			350	100	1	Flying, then landed
13	06/02/2013	12:45			1500	250	1	F
13	06/02/2013	12:49			1000	200	1	C N to S
13	06/02/2013	12:53			1250	250	1	F
13	06/02/2013	12:59			1750	250	1	F
13	06/02/2013	13:10			2000	250	1	F
13	19/02/2013	09:16			1000	200	1	R
13	19/02/2013	09:18			600	100	2	R
13	19/02/2013	09:31			300	50	1	F
13	19/02/2013	09:33			600	100	1	F
13	19/02/2013	10:46			1000	200	1	C
13	19/02/2013	10:51			300	50	2	R
13	19/02/2013	10:52			400	100	1	F
13	05/03/2013	14:50			1000	200	17	R, flying
13	05/03/2013	14:50			400	100	17	R
13	05/03/2013	15:10			1000	200	33	R
13	05/03/2013	15:10			600	200	33	R
13	05/03/2013	15:10			400	100	33	R
13	27/03/2013	11:10			500-700	200	12	C to N
13	27/03/2013	11:25			1000	400	8	C to N
13	27/03/2013	11:25			300	100	4	F

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R)
13	27/03/2013	11:30			1000-2000	300	8	C to N
13	27/03/2013	11:30			500	200	1	C to S
13	27/03/2013	11:30			300	100	4	F
13	27/03/2013	11:40			1000	300	2	C to N
14	28/11/2012	11:00			500	100	1	F
14	12/12/2012	10:30			140	30	1	F
14	12/12/2012	10:32			550	50	3	F
14	12/12/2012	10:35			250	100	6	F
14	12/12/2012	10:48			1200	200	1	C N to S
14	12/12/2012	11:04			800	200	1	C N to S
14	12/12/2012	11:10			700	150	1	C and F (landed then foraged)
14	18/12/2012	14:00			100	50	4	F
14	18/12/2012	14:10			500	100	1	C to S
14	18/12/2012	14:15			1000	100	1	R
14	18/12/2012	14:16			500	200	1	F
14	18/12/2012	14:20			1000	200	1	C to N
14	18/12/2012	14:30			500	100	1	C to N
14	04/01/2013	09:25			1000	200	3	C and landed in water
14	04/01/2013	09:30			1300	300	1	F
14	04/01/2013	09:30			1200	300	1	F
14	04/01/2013	09:33			800	200	2	F
14	22/01/2013	12:00			1100	200	1	C N to S
14	22/01/2013	12:06			1200	200	1	C N to S
14	06/02/2013	13:30			750	100	1	F
14	06/02/2013	13:32			1250	250	1	F
14	06/02/2013	13:34			1500	200	1	F
14	18/02/2013	14:45			500	200	6	R
14	18/02/2013	14:45			1000	300	3	R
14	18/02/2013	14:45			700	200	2	R
14	18/02/2013	14:45			900	300	6	R
14	18/02/2013	15:25			600	200	15	R

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R)
14	18/02/2013	15:25			600	200	4	C
14	05/03/2013	15:50			1000	300	34	R (scattered)
14	27/03/2013	10:10			700-1000	200	25	C to N
14	27/03/2013	10:10			1000	200	1	C to S
14	27/03/2013	10:10			300-500	100	5	F
14	27/03/2013	10:25			1000-2000	300	30	C to N
14	27/03/2013	10:25			300-500	200	10	F
14	27/03/2013	10:40			700-1500	300	10	C
14	27/03/2013	10:40			300-500	200	5	F
15	27/11/2012	09:01			1500	250	1	C
15	12/12/2012	09:19			60	15	4	F
15	12/12/2012	09:23			600	100	2	flying through
15	12/12/2012	09:24			130	20	1	F
15	12/12/2012	09:41			450	100	3	F
15	12/12/2012	09:46			40	10	1	F
15	18/12/2012	13:52			750	200	2	F
15	18/12/2012	13:56			800	1200	19	C
15	18/12/2012	14:02			1250	250	3	R
15	18/12/2012	14:08			1500	250	4	R
15	18/12/2012	14:10			1500	250	10	C, then landed
15	18/12/2012	13:48			1000	200	1	F
15	04/01/2013	09:30			1000	200	1	C
15	04/01/2013	09:45			1000	200	1	C
15	04/01/2013	09:50			1000	200	1	C
15	04/01/2013	09:55			500	100	1	R
15	22/01/2013	13:15			900	150	1	C N to S
15	22/01/2013	13:17			1300	250	2	F
15	06/02/2013	14:46			750	100	1	F
15	06/02/2013	14:47			750	100	1	F
15	06/02/2013	14:48			1000	150	1	C S to N
15	06/02/2013	14:49			2000	250	1	C S to N

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R)
15	06/02/2013	14:52			1500	200	2	C S to N
15	06/02/2013	14:55			1000	200	1	C S to N
15	06/02/2013	15:06			2000	250	1	C N to S
15	06/02/2013	15:15			2000	250	1	C S to N
15	18/02/2013	14:50			500	100	2	R
15	18/02/2013	15:20			700	200	9	R
15	05/03/2013	17:00			1500	400	4	R
15	27/03/2013	09:05			500	100	3	C to N
15	27/03/2013	09:05			500	100	2	F
15	27/03/2013	09:15			500-1000	200	3	C to N
15	27/03/2013	09:30			500-1000	200	25	C to N
15	27/03/2013	09:30			300	100	2	F
15	27/03/2013	09:35			1000-2000	300	30	C to N

Appendix D

Inventory of Incidental Seabird Species Recorded During 2012/2013 VP Surveys

The following tables list the other bird species recorded incidentally whilst undertaking the RTD surveys:

Table number	Bird species	Table number	Bird species
1	Cormorant	23	Mallard
2	Great crested grebe	24	Whooper Swan
3	Little grebe	25	Curlew
4	Black headed Gull	26	Redshank
5	Great black backed gull	27	Oystercatcher
6	Herring gull	28	Avocet
7	Common gull	29	Lapwing
8	Lesser black backed gull	30	Dunlin
9	Little gull	31	Turnstone
10	Kittiwake	32	Razor bill
11	Mixed gulls	33	Guillemot
12	Gannet		
13	Barnacle goose		
14	Brent goose		
15	Teal		
16	Common scoter		
17	Wigeon		
18	Shoveler		
19	Shelduck		
20	Tufted duck		
21	Pintail		
22	Goldeneye		

Table 1: Cormorant - Wintering VP surveys results (September 2012 to March 2013)

Cormorant - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
30/10/2012	2	16:00	17:00	Inshore	12	F
30/10/2012	3	16:00	17:00	Inshore	80	R
31/10/2012	3	06:15	07:15	Inshore	20	C
31/10/2012	2	06:15	07:15	Inshore	9	F/R
31/10/2012	6	08:15	09:00	Inshore	2	F
31/10/2012	10	11:30	12:15	Inshore	2	C
31/10/2012	11	10:20	11:10	Inshore	6	C
31/10/2012	5	09:20	10:05	Inshore	2	F
31/10/2012	4	10:45	11:30	Inshore	2	F
31/10/2012	8	13:15	14:00	Offshore waters	1	C
31/10/2012	9	12:00	12:45	Offshore waters	1	C
31/10/2012	14	14:45	15:30	Inshore	1	C
27/11/2012	1	12:10	12:55	Inshore	4	C
27/11/2012	2	15:30	16:30	Inshore	70	R
27/11/2012	3	15:30	16:00	Inshore	85	R
27/11/2012	5	14:05	14:50	Inshore	5	C
27/11/2012	9	12:45	13:30	Inshore	1	F
27/11/2012	10	11:35	12:10	Inshore	20	F/C
27/11/2012	11	10:20	11:10	Onshore	20	F
27/11/2012	12	09:05	09:40	Inshore	30	F
27/11/2012	13	11:05	11:50	Inshore	3	C
28/11/2012	2	07:00	07:45	Inshore	40	R/C
28/11/2012	7	08:30	09:15	Inshore	5	C
28/11/2012	11	13:10	13:55	Inshore	7	C
28/11/2012	12	14:30	15:15	Inshore	12	C/R
28/11/2012	10	12:10	12:55	Inshore	11	C
28/11/2012	9	10:35	11:20	Inshore	2	C
28/11/2012	8	09:30	10:15	Inshore	3	C

Cormorant - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
28/11/2012	1	12:45	13:30	Inshore	12	F/C
28/11/2012	3	14:30	15:15	Inshore	80	R
28/11/2012	4	07:00	07:45	Inshore	60	C
28/11/2012	5	15:30	16:15	offshore	2	C
28/11/2012	6	08:30	09:15	Inshore	15	C
28/11/2012	13	11:50	12:35	Inshore	2	C
29/11/2012	3	07:00	08:00	both	18	C
29/11/2012	3	07:00	08:00	offshore	80	R
11/12/2012	3	15:30	16:30	Inshore	95	R/C
11/12/2012	2	15:30	16:30	Inshore	90	F
12/12/2012	2	06:45	07:30	Inshore	7	F
12/12/2012	3	06:45	07:30	Inshore	40	C
12/12/2012	7	08:00	08:45	Inshore	4	F
12/12/2012	6	08:00	08:45	Inshore	10	F-C
12/12/2012	15	09:15	10:00	Inshore	2	C- N to S
12/12/2012	9	09:45	10:30	Inshore		
12/12/2012	14	10:30	11:15	Inshore	3	C- N-S
12/12/2012	10	11:05	11:50	Inshore	10	C
12/12/2012	13	11:30	12:15	Inshore	1	C
12/12/2012	11	12:30	13:15	Inshore	2	F
12/12/2012	1	12:35	13:20	Inshore	1	C
12/12/2012	4	14:20	15:05	Inshore	12	F/R
12/12/2012	12	14:15	15:00	Inshore	2	F
12/12/2012	5	15:20	16:05	Inshore	5	C
13/12/2012	3	11:00	11:45	offshore	70	R
18/12/2012	15	13:40	14:25	Inshore	1	C
18/12/2012	14	14:00	14:45	Inshore	4	R
18/12/2012	1	15:10	16:10	Inshore	3	C
18/12/2012	4	15:10	16:10	Inshore	20	C/R

Cormorant - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
19/12/2012	4	07:00	08:00	Inshore	20	C
19/12/2012	1	07:20	08:20	In and offshore	10	C
19/12/2012	7	09:05	09:50	Inshore	7	C
19/12/2012	12	09:30	10:15	Inshore	30	F
19/12/2012	6	10:00	10:45	Inshore	17	C/F
19/12/2012	5	10:55	11:40	Inshore	18	C/F
19/12/2012	11	11:00	11:45	Inshore	20	F
19/12/2012	10	12:15	13:00	Inshore	4	F
19/12/2012	3	12:20	13:05	Inshore	16	R
19/12/2012	3	12:20	13:05	Inshore	7	C/F/R
19/12/2012	2	13:15	14:00	Inshore	9	F/C
19/12/2012	9	14:00	14:45	Inshore	4	F
19/12/2012	13	14:40	15:25	Inshore	7	C/R
19/12/2012	8	15:15	16:00	Inshore	4	F
02/01/2013	4	15:15	16:15	Inshore	19	C- N-S
02/01/2013	3	15:15	16:15	Inshore	90	F/R
03/01/2013	4	07:00	08:00	Inshore	10	C
03/01/2013	3	07:00	08:00	Inshore	45	R
03/01/2013	13	09:00	09:45	Inshore	2	F
03/01/2013	9	09:30	10:15	Inshore	5	F
03/01/2013	10	11:00	11:45	Inshore	5	F
03/01/2013	1	11:00	11:45	Inshore	5	C
03/01/2013	2	12:00	12:45	Inshore	19	C/F
03/01/2013	11	12:30	13:15	Inshore	4	F
03/01/2013	5	13:25	14:10	Inshore	2	C
03/01/2013	12	14:30	15:15	Inshore	4	R
03/01/2013	6	14:30	15:15	Inshore	4	C
03/01/2013	7	15:25	16:10	Inshore	1	C
04/01/2013	15	09:15	10:00	Inshore	4	F

Cormorant - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
21/01/2013	1	16:00	16:45	Inshore	2	C
21/01/2013	2	16:00	16:45	Inshore	65	R/C
22/01/2013	2	07:15	08:00	Inshore	60	R/F/C
22/01/2013	12	09:25	10:10	Inshore	20	C/F
22/01/2013	11	11:05	11:50	Inshore	6	F
22/01/2013	10	12:20	13:05	Inshore	3	C
22/01/2013	9	13:40	14:25	Inshore	2	C
22/01/2013	8	14:45	15:30	inshore	2	C
22/01/2013	7	15:40	16:25	Inshore	3	C
22/01/2013	1	07:25	08:10	Inshore	8	F/R
22/01/2013	4	08:50	09:35	Inshore	2	C/F
22/01/2013	3	09:45	10:30	Inshore	6	C/F
22/01/2013	13	11:00	11:45	Inshore	1	F/R
22/01/2013	15	13:00	13:45	Inshore	5	F/C
22/01/2013	5	14:25	15:10	Inshore	5	F/C/R
22/01/2013	6	15:30	16:15	Inshore	10	F/C
05/02/2013	3	16:15	17:15	Inshore	9	C/F
06/02/2013	3	07:00	08:00	Inshore	70	R
06/02/2013	3	07:00	08:00	Inshore	20	F
06/02/2013	4	07:00	08:00	Inshore	26	C
06/02/2013	5	08:10	08:55	Inshore	3	C/F
06/02/2013	2	09:25	10:10	Inshore	60	F/R/C
06/02/2013	12	10:00	10:45	Inshore	20	F
06/02/2013	1	10:25	11:10	Inshore	7	C/F
06/02/2013	11	12:00	12:45			
06/02/2013	13	12:30	13:15	Inshore	2	F
06/02/2013	10	12:45	13:30	Inshore	4	F
06/02/2013	15	14:45	15:30	Inshore	4	C/F
06/02/2013	8	15:15	16:00	Inshore	10	F

Cormorant - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
06/02/2013	6	16:05	16:50	Inshore	5	F/C
06/02/2013	7	16:15	17:00	Inshore	10	C
18/02/2013	15	14:45	15:30	Inshore	5	C
18/02/2013	1	16:30	17:30	Inshore	10	C
18/02/2013	2	16:15	17:15	Inshore	109	F/R
19/02/2013	1	07:00	08:00	Inshore	10	R
19/02/2013	2	07:00	08:00	Inshore	50	R
19/02/2013	13	09:15	10:00	Inshore	5	F
19/02/2013	3	10:45	11:30	Inshore	4	R
19/02/2013	4	11:50	12:35	Inshore	8	F
19/02/2013	5	12:55	13:40	Inshore	4	F
19/02/2013	11	13:00	13:45	Inshore	5	R
19/02/2013	6	14:20	15:05	Inshore	6	C
19/02/2013	12	14:45	15:30	Inshore	20	F
04/03/2013	4	16:45	17:45	Inshore	12	C
04/03/2013	4	16:45	17:45	Inshore	70	R
05/03/2013	3	06:25	07:25	Inshore	18	R
05/03/2013	4	06:30	07:30	Inshore	40	C
05/03/2013	6	08:50	09:35	Inshore	80	C- N-S
05/03/2013	12	09:00	09:45	Inshore	40	F
05/03/2013	5	10:20	11:05	Inshore	8	C
05/03/2013	11	10:45	11:30	Inshore	4	F
05/03/2013	2	11:55	12:40	Inshore	20	R, F
05/03/2013	9	13:45	14:30	Inshore	4	C
05/03/2013	8	14:45	15:30	Inshore	10	F
05/03/2013	14	15:45	16:30	Inshore	1	C
05/03/2013	7	15:45	16:30	Inshore	10	C
26/03/2013	1	17:30	18:30	Inshore	1	C
26/03/2013	2	17:30	18:30	Inshore	70	R

Cormorant - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
27/032013	2	05:50	06:50	Onshore	60	C/R
27/03/2013	1	06:00	07:00	Inshore	40	C
27/03/2013	12	09:00	09:45	Inshore	80	F/C
27/03/2013	15	09:00	09:45	Inshore	10	C
27/03/2013	11	10:45	11:30	Inshore	30	C
27/03/2013	10	11:50	12:35	Inshore	10	C
27/03/2013	140	12:45	13:00	Inshore	140	F
27/03/2013	4	14:00	14:45	Inshore	10	F
27/03/2013	8	14:15	15:00	Inshore	13	C
27/03/2013	5	15:00	15:45	Inshore	2	C
27/03/2013	7	15:15	16:00	Inshore	10	C
27/03/2013	6	16:15	17:00	Inshore	10	C

Table 2: Great crested grebe - Wintering VP surveys results (September 2012 to March 2013)

Great crested grebe - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
27/11/2012	14	10:00	10:45	Inshore	3	C/R
28/11/2012	9	10:35	11:20		1	C
28/11/2012	8	09:30	10:15	both	7	C/F/R
12/12/2012	15	09:15	10:00	Inshore	4	F
12/12/2012	11	12:30	13:15		1	F
18/12/2012	15	13:40	14:25	Inshore	4	F
18/12/2012	14	14:00	14:45	Inshore	30	F
18/12/2012	1	15:10	16:10	Inshore	1	F
19/12/2012	1	07:20	08:20	Inshore	1	F

Great crested grebe - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
19/12/2012	7	09:05	09:50	Inshore	2	F
19/12/2012	12	09:30	10:15	Inshore	3	F
19/12/2012	6	10:00	10:45	Inshore	17	C/F
19/12/2012	11	11:00	11:45	Inshore	2	F
19/12/2012	10	12:15	13:00	Inshore	2	F
19/12/2012	13	14:40	15:25	Inshore	2	R
03/01/2013	8	08:30	09:15	Inshore	1	F
03/01/2013	13	09:00	09:45	Inshore	1	F
22/01/2013	10	12:20	13:05	Inshore	1	F
06/02/2013	12	10:00	10:45	Inshore	2	F
06/02/2013	13	12:30	13:15	Inshore	1	F
06/02/2013	10	12:45	13:30	Inshore	1	F
06/02/2013	14	13:25	14:10	Inshore	1	F
19/02/2013	3	10:45	11:30	Inshore	1	R
19/02/2013	11	13:00	13:45	Inshore	3	F
05/03/2013	4	06:30	07:30	Inshore	2	F
05/03/2013	12	09:00	09:45	Inshore	2	F
05/03/2013	2	11:55	12:40	Inshore	1	F
05/03/2013	1	12:55	13:40	Inshore	3	F
05/03/2013	13	14:45	15:30	Inshore	6	F/R
05/03/2013	14	15:45	16:30	Inshore	8	R
05/03/2013	15	16:45	17:30	Inshore	12	R
27/03/2013	15	09:00	09:45	Inshore	2	F
27/03/2013	14	10:00	10:45	Inshore	2	F
27/03/2013	13	11:00	11:45	Inshore	1	F

Table 3: Little grebe - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
19/12/2012	11	11:00	11:45	Inshore	20	F

Table 4 Black-headed gull - Wintering VP surveys results (September 2012 to March 2013)

Black-headed gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
30/10/2012	2	16:00	17:00	Inshore	228	F
30/10/2012	3	16:00	17:00	Inshore	430	F/R
31/10/2012	3	06:15	07:15	Inshore	100	R
31/10/2012	2	06:15	07:15	Onshore and Inshore	85	F/R/C
31/10/2012	6	08:15	09:00	Inshore	3	F
31/10/2012	12	09:00	09:45	Inshore	4	R
31/10/2012	5	09:20	10:05	Onshore	1	C
31/10/2012	1	12:40	13:25	Onshore	3	C
31/10/2012	8	13:15	14:00	Onshore	20	R
31/10/2012	9	12:00	12:45	Inshore	6	C
31/10/2012	13	13:45	14:30	Onshore	3	C
31/10/2012	14	14:45	15:30	Onshore	12	C
31/10/2012	15	15:45	16:30	Onshore	8	C
27/11/2012	1	12:10	12:55		3	C
27/11/2012	2	15:30	16:30		60	
27/11/2012	3	15:30	16:00		50	C/R
27/11/2012	5	14:05	14:50		7	C
27/11/2012	6	07:00	07:45		4	F
27/11/2012	7	14:35	15:20		2	C
27/11/2012	9	12:45	13:30		4	R

Black-headed gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
27/11/2012	10	11:35	12:10		4	R
27/11/2012	11	10:20	11:10	Onshore	1	F
27/11/2012	13	11:05	11:50		1	C
27/11/2012	14	10:00	10:45	onshore	2	C
27/11/2012	15	08:45	09:30	onshore	6	C/F
28/11/2012	2	07:00	07:45	Inshore	150	F
28/11/2012	7	08:30	09:15	both	3	C
28/11/2012	11	31:10:00	13:55	both	25	C/F/R
28/11/2012	12	14:30	15:15	both	10	C
28/11/2012	10	12:10	12:55	both	3	C
28/11/2012	9	10:35	11:20	both	4	C
28/11/2012	8	09:30	10:15	both	7	C
28/11/2012	3	14:30	15:15	Inshore	40	R
28/11/2012	4	07:00	07:45	Inshore	60	R
28/11/2012	5	15:30	16:15	offshore	4	C
28/11/2012	6	08:30	09:15	Inshore	4	R
28/11/2012	15	10:00	10:45	onshore	10	R
29/11/2012	3	07:00	08:00	both	125	C/R/F
29/11/2012	3	07:00	08:00	offshore	200	F
11/12/2012	3	15:30	16:30	Inshore	168	F/R
11/12/2012	2	15:30	16:30	Inshore	200	F/R
12/12/2012	2	06:45	07:30	Inshore	240	F
12/12/2012	3	06:45	07:30	Inshore	400	R
12/12/2012	15	09:15	10:00	Inshore	15	F
12/12/2012	9	09:45	10:30	Inshore	15	F
12/12/2012	10	11:05	11:50	Inshore	10	C
12/12/2012	13	11:30	12:15	onshore	2	R
12/12/2012	11	12:30	13:15		4	F
12/12/2012	1	12:35	13:20	Inshore	15	C/F

Black-headed gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/12/2012	4	14:20	15:05	Inshore	900	F/R
12/12/2012	12	14:15	15:00	Inshore	4	F
12/12/2012	5	15:20	16:05	onshore	150	C
13/12/2012	3	11:00	11:45	on rigs	10	R
13/12/2012	2	12:00	12:45	Inshore	10	F
18/12/2012	15	13:40	14:25	Inshore	50	R/C
18/12/2012	1	15:10	16:10	Inshore	103	C/R
18/12/2012	4	15:10	16:10	Inshore	590	R
19/12/2012	4	07:00	08:00	Inshore	200	R
19/12/2012	1	07:20	08:20	in and offshore	50-150	C
19/12/2012	6	10:00	10:45	Inshore	6	F
19/12/2012	5	10:55	11:40	Inshore	15	C/R
19/12/2012	11	11:00	11:45	Inshore	1	C
19/12/2012	3	12:20	13:05	both	8	C/R
19/12/2012	9	14:00	14:45	Inshore	4	R
19/12/2012	13	14:40	15:25	Inshore	3	F
19/12/2012	8	15:15	16:00	Inshore	40	F
02/01/2013	4	15:15	16:15	Inshore	400	R
02/01/2013	4	15:15	16:15	Inshore	850	R
02/01/2013	4	15:15	16:15	Inshore	1400	R
02/01/2013	3	15:15	16:15	Inshore	500	R
03/01/2013	4	07:00	08:00	Inshore	1000	R
03/01/2013	3	07:00	08:00	Inshore	500	C- N-S, 200/ R
03/01/2013	8	08:30	09:15	Inshore	10	C
03/01/2013	13	09:00	09:45	Inshore	40	C
03/01/2013	9	09:30	10:15	Inshore	5	F
03/01/2013	2	12:00	12:45	onshore	1	R
03/01/2013	11	12:30	13:15	Inshore	4	F
03/01/2013	5	13:25	14:10	onshore	3	C

Black-headed gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
03/01/2013	6	14:30	15:15	Inshore	5	C
03/01/2013	7	15:25	16:10	Inshore	350	R
21/01/2013	1	16:00	16:45	Inshore	40	R/C
21/01/2013	1	16:00	16:45	Inshore	3	C
21/01/2013	2	16:00	16:45	Inshore	5	R/C
22/01/2013	12	09:25	10:10	Inshore	9	C
22/01/2013	10	12:20	13:05	Inshore	7	C/F
22/01/2013	9	13:40	14:25	Inshore	11	C
22/01/2013	8	14:45	15:30	both	15	C
22/01/2013	7	15:40	16:25	Inshore	80	C/F/R
22/01/2013	1	07:25	08:10	both	4	F / R
22/01/2013	4	08:50	09:35	Inshore	60	R/C
22/01/2013	3	09:45	10:30	Inshore	8	C/F
22/01/2013	13	11:00	11:45	Inshore	6	F/R
22/01/2013	14	12:00	12:45	onshore	3	R
22/01/2013	15	13:00	13:45	onshore	10	F/C
22/01/2013	6	15:30	16:15	both	15	F/C
05/02/2013	4	16:15	17:15	Inshore	700	R
05/02/2013	3	16:15	17:15	Inshore	30	C/R
06/02/2013	3	07:00	08:00	Inshore	100	
06/02/2013	12	10:00	10:45	Inshore	20	F
06/02/2013	11	12:00	12:45			
06/02/2013	13	12:30	13:15	Inshore	4	C
06/02/2013	10	12:45	13:30		10	
06/02/2013	14	13:25	14:10	Inshore	4	C
06/02/2013	9	14:15	15:00	Inshore	12	R
06/02/2013	7	16:15	17:00		100	R
18/02/2013	15	14:45	15:30	Inshore	600	R
18/02/2013	14	14:45	15:30	Inshore	4	R

Black-headed gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
18/02/2013	14	14:45	15:30	onshore	1	C
18/02/2013	1	16:30	17:30	Inshore	600	R
18/02/2013	2	16:15	17:15	Inshore	4	C/ R
19/02/2013	1	07:00	08:00	Inshore	30	R
19/02/2013	2	07:00	08:00	Inshore	30	R
19/02/2013	8	08:45	09:30	Inshore	40	R
19/02/2013	3	10:45	11:30	Inshore	4	C
19/02/2013	4	11:50	12:35	Inshore	10	C
19/02/2013	6	14:20	15:05	Inshore	50	R
19/02/2013	12	14:45	15:30	Inshore	10	R
19/02/2013	7	15:15	16:00	Onshore	4	C
04/03/2013	4	16:45	17:45	Inshore	160	R
04/03/2013	4	16:45	17:45	onshore	120	F
04/03/2013	4	16:45	17:45	Inshore	500	R
05/03/2013	3	06:25	07:25	Inshore	30	C
05/03/2013	4	06:30	07:30	Inshore	200	R
05/03/2013	6	08:50	09:35	Onshore	3	C
05/03/2013	12	09:00	09:45	Inshore	4	R
05/03/2013	13	14:45	15:30	Inshore	2	R
05/03/2013	8	14:45	15:30	Inshore	4	R
05/03/2013	14	15:45	16:30	Inshore	150	R
05/03/2013	7	15:45	16:30	Inshore	100	R
05/03/2013	15	16:45	17:30	Inshore	1000	R
26/03/2013	1	17:30	18:30	Onshore	15	F
26/03/2013	2	17:30	18:30	Inshore	150	F
27/032013	2	05:50	06:50	Onshore	10	F
27/03/2013	1	06:00	07:00	Inshore	80	F
27/03/2013	12	09:00	09:45	Onshore	20	F/C
27/03/2013	15	09:00	09:45	Inshore	40	F

Black-headed gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
27/03/2013	14	10:00	10:45	Inshore	10	F
27/03/2013	11	10:45	11:30	Onshore	15	F
27/03/2013	13	11:00	11:45	Inshore	20	F
27/03/2013	10	11:50	12:35	Onshore	10	F
27/03/2013	3	12:45	13:00	Inshore	100	R
27/03/2013	9	13:15	14:00	Onshore	35	F
27/03/2013	4	14:00	14:45	Inshore	20	F
27/03/2013	8	14:15	15:00	Onshore	50	F
27/03/2013	5	15:00	15:45	Inshore	20	C
27/03/2013	7	15:15	16:00	Onshore	45	F
27/03/2013	6	16:15	17:00	Inshore	50	F

Table 5: Great black-backed gull - Wintering VP surveys results (September 2012 to March 2013)

Great black-backed gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
30/10/2012	2	16:00	17:00	Inshore	21	F
30/10/2012	3	16:00	17:00	Inshore	8	F/R
31/10/2012	3	06:15	07:15	Inshore	5	R
31/10/2012	2	06:15	07:15	Onshore and Inshore	23	F/R
31/10/2012	6	08:15	09:00	Inshore	1	F
31/10/2012	10	11:30	12:15	Inshore	6	C
31/10/2012	11	10:20	11:10	Inshore	2	C
31/10/2012	4	10:45	11:30	Onshore	2	R
31/10/2012	1	12:40	13:25	Onshore	6	R
31/10/2012	13	13:45	14:30	Inshore	4	F

Great black-backed gull - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
31/10/2012	14	14:45	15:30	Onshore	2	R
27/11/2012	1	12:10	12:55	Inshore	9	R
27/11/2012	2	15:30	16:30	Inshore	10	R
27/11/2012	3	15:30	16:00	Inshore	1	R
27/11/2012	5	14:05	14:50	Inshore	3	C
27/11/2012	8	16:45	14:30	Inshore	8	R
27/11/2012	9	12:45	13:30	Inshore	1	R
27/11/2012	12	09:05	09:40	Inshore	1	R
27/11/2012	13	11:05	11:50	Inshore	4	C/R
27/11/2012	14	10:00	10:45	Inshore	11	R
27/11/2012	15	08:45	09:30	Inshore	4	C
28/11/2012	7	08:30	09:15	both	8	C/R
28/11/2012	11	31:10:00	13:55	both	7	C/R
28/11/2012	12	14:30	15:15	Inshore	1	R
28/11/2012	10	12:10	12:55	Inshore	2	C
28/11/2012	9	10:35	11:20	Inshore	3	C
28/11/2012	1	12:45	13:30	offshore	4	R
28/11/2012	3	14:30	15:15	Inshore	4	R
28/11/2012	4	07:00	07:45	onshore	10	R
28/11/2012	5	15:30	16:15	offshore	4	R
28/11/2012	6	08:30	09:15	Inshore	2	R
28/11/2012	13	11:50	12:35	Inshore	1	R
28/11/2012	14	11:00	11:45	Inshore	15	C
29/11/2012	3	07:00	08:00	Both	125	C/R/F
29/11/2012	3	07:00	08:00	Rigs/outfall	10	R
11/12/2012	3	15:30	16:30	Inshore	11	F/R
11/12/2012	2	15:30	16:30	Inshore	17	F/R
12/12/2012	2	06:45	07:30	Inshore	33	F
12/12/2012	6	08:00	08:45	both	23	F/C

Great black-backed gull - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/12/2012	15	09:15	10:00	Inshore	6	F
12/12/2012	14	10:30	11:15	Inshore	2	R
12/12/2012	1	12:35	13:20	Inshore	6	R/F
12/12/2012	4	14:20	15:05	Inshore	50	F/R
12/12/2012	12	14:15	15:00	Inshore	4	F
12/12/2012	5	15:20	16:05	both	3	R
13/12/2012	3	11:00	11:45	Inshore	20	R
13/12/2012	2	12:00	12:45	Inshore	10	F
18/12/2012	15	13:40	14:25	Inshore	2	R
18/12/2012	14	14:00	14:45	Inshore	2	R
18/12/2012	1	15:10	16:10	Inshore	3	C/R
18/12/2012	4	15:10	16:10	Inshore	5	R
19/12/2012	4	07:00	08:00	onshore	1	C
19/12/2012	1	07:20	08:20	in and offshore	10	C/R
19/12/2012	7	09:05	09:50	Inshore	1	R
19/12/2012	3	12:20	13:05	Inshore	3	R
19/12/2012	2	13:15	14:00	Inshore	20	F/C
19/12/2012	8	15:15	16:00	Inshore	2	F
02/01/2013	3	15:15	16:15	Inshore	40	R
03/01/2013	3	07:00	08:00	Inshore	2	R
03/01/2013	8	08:30	09:15	Inshore	2	C
03/01/2013	13	09:00	09:45	Inshore	12	C
03/01/2013	9	09:30	10:15	Inshore	2	R
03/01/2013	1	11:00	11:45	Inshore	1	R
03/01/2013	2	12:00	12:45	Inshore	40	F
03/01/2013	11	12:30	13:15	Inshore	2	R
03/01/2013	5	13:25	14:10	Inshore	5	C
03/01/2013	6	14:30	15:15	Inshore	17	C
03/01/2013	7	15:25	16:10	Inshore	4	C

Great black-backed gull - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
04/01/2013	15	09:15	10:00	Inshore	14	R
21/01/2013	2	16:00	16:45	Inshore	48	R/C
22/01/2013	12	09:25	10:10	Inshore	3	C
22/01/2013	10	12:20	13:05	Inshore	2	F
22/01/2013	9	13:40	14:25	Inshore	3	R
22/01/2013	7	15:40	16:25	Inshore	15	C
22/01/2013	1	07:25	08:10	both	22	F/R
22/01/2013	4	08:50	09:35	Inshore	10	R/C
22/01/2013	3	09:45	10:30	Inshore	4	C/F
22/01/2013	13	11:00	11:45	Inshore	3	F/R
22/01/2013	14	12:00	12:45	Inshore	1	C
22/01/2013	5	14:25	15:10	Inshore	9	F/C/R
22/01/2013	6	15:30	16:15	Inshore	14	C/F
05/02/2013	4	16:15	17:15	Inshore	20	R
05/02/2013	3	16:15	17:15	Inshore	20	C/R
06/02/2013	3	07:00	08:00	Inshore	20	F
06/02/2013	12	10:00	10:45	Inshore	4	F
06/02/2013	11	12:00	12:45	Inshore	4	F
06/02/2013	13	12:30	13:15	Inshore	4	R
06/02/2013	9	14:15	15:00	Inshore	2	R
06/02/2013	8	15:15	16:00	Inshore	4	R
18/02/2013	15	14:45	15:30	Inshore	4	R
18/02/2013	14	14:45	15:30	Inshore	1	R
18/02/2013	1	16:30	17:30	Inshore	10	R
18/02/2013	2	16:15	17:15	Inshore	11	F/R
19/02/2013	1	07:00	08:00	Inshore	10	R
19/02/2013	2	07:00	08:00	Inshore	1	R
19/02/2013	8	08:45	09:30	Inshore	4	R
19/02/2013	13	09:15	10:00	Inshore	4	R

Great black-backed gull - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
19/02/2013	3	10:45	11:30	Inshore	3	R
19/02/2013	4	11:50	12:35	Inshore	10	R
19/02/2013	11	13:00	13:45	Inshore	10	R
19/02/2013	6	14:20	15:05	Inshore	8	R
19/02/2013	12	14:45	15:30	Inshore	2	R
19/02/2013	7	15:15	16:00	Inshore	1	R
04/03/2013	4	16:45	17:45	Inshore	8	R
04/03/2013	4	16:45	17:45	Inshore	20	R
05/03/2013	6	08:50	09:35	Inshore	6	C
05/03/2013	11	10:45	11:30	Inshore	4	R
05/03/2013	2	11:55	12:40	Inshore	6	R
05/03/2013	10	12:15	13:00	Inshore	4	R
05/03/2013	9	13:45	14:30	Inshore	10	R
05/03/2013	13	14:45	15:30	Inshore	1	R
05/03/2013	8	14:45	15:30	Inshore	4	R
05/03/2013	14	15:45	16:30	Inshore	4	R
05/03/2013	7	15:45	16:30	Inshore	4	R
26/03/2013	1	17:30	18:30	Inshore	2	C
26/03/2013	2	17:30	18:30	Inshore	4	F
27/03/2013	2	05:50	06:50	Onshore	10	R/C
27/03/2013	12	09:00	09:45	Onshore	15	F/C
27/03/2013	14	10:00	10:45	Inshore	4	F
27/03/2013	10	11:50	12:35	Inshore	5	F
27/03/2013	140	12:45	13:00	Inshore	10	F
27/03/2013	9	13:15	14:00	Onshore	5	F
27/03/2013	8	14:15	15:00	Onshore	25	F
27/03/2013	6	16:15	17:00	Inshore	2	F

Table 6: Herring gull - Wintering VP surveys results (September 2012 to March 2013)

Herring gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
30/10/2012	2	16:00	17:00	Inshore	40	F/R
30/10/2012	3	16:00	17:00	Inshore	40	F/R
31/10/2012	3	06:15	07:15	Inshore	78	R
31/10/2012	2	06:15	07:15	Onshore and Inshore	50	F/R/C
31/10/2012	6	08:15	09:00	Onshore	6	R
31/10/2012	11	10:20	11:10	Inshore	6	C
31/10/2012	5	09:20	10:05	Inshore	2	F/R
31/10/2012	4	10:45	11:30	Onshore	6	R
31/10/2012	1	12:40	13:25	Onshore	5	R
31/10/2012	8	13:15	14:00	Onshore	10	R
31/10/2012	7	14:30	15:15	Onshore	4	R
31/10/2012	15	15:45	16:30	Onshore	2	C
27/11/2012	1	12:10	12:55	Inshore	7	C
27/11/2012	2	15:30	16:30	Inshore	60	C
27/11/2012	3	15:30	16:00	Inshore	15	C
27/11/2012	4	07:00	07:45	Inshore	6	C
27/11/2012	5	14:05	14:50	Inshore	12	C
27/11/2012	7	14:35	15:20	Inshore	3	C
27/11/2012	8	16:45	14:30	Onshore	20	R
27/11/2012	9	12:45	13:30	Inshore	4	R
27/11/2012	10	11:35	12:10	Inshore	8	F
27/11/2012	11	10:20	11:10	Onshore	1	F
27/11/2012	12	09:05	09:40	Inshore	2	R
27/11/2012	13	11:05	11:50	Inshore	6	C
27/11/2012	14	10:00	10:45	Inshore	4	C
27/11/2012	15	08:45	09:30	Inshore	12	C/F
28/11/2012	2	07:00	07:45	Inshore	150	F
28/11/2012	7	08:30	09:15	both	12	C

Herring gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
28/11/2012	11	31:10:00	13:55	Inshore	17	C/R
28/11/2012	12	14:30	15:15	Inshore	12	C/R
28/11/2012	10	12:10	12:55	Inshore	4	C/R
28/11/2012	9	10:35	11:20	both	7	C
28/11/2012	8	09:30	10:15	both	80	C/F/R
28/11/2012	1	12:45	13:30	offshore	2	R
28/11/2012	3	14:30	15:15	Inshore	2	R
28/11/2012	4	07:00	07:45	onshore	8	R
28/11/2012	6	08:30	09:15	Inshore	18	R
28/11/2012	14	11:00	11:45	Inshore	20	C
28/11/2012	15	10:00	10:45	Inshore	10	R
29/11/2012	3	07:00	08:00	Inshore	125	C/R/F
29/11/2012	3	07:00	08:00	Rigs/outfall	20	R
11/12/2012	3	15:30	16:30	Inshore	49	F/R
11/12/2012	2	15:30	16:30	Inshore	40	R
12/12/2012	2	06:45	07:30	Inshore	62	F
12/12/2012	3	06:45	07:30	Inshore	200	R
12/12/2012	7	08:00	08:45	Inshore	4	F
12/12/2012	6	08:00	08:45	both	12	F/C
12/12/2012	14	10:30	11:15	Inshore	3	R
12/12/2012	10	11:05	11:50	Inshore	10	C
12/12/2012	13	11:30	12:15	Inshore	4	C
12/12/2012	11	12:30	13:15	Inshore	4	F
12/12/2012	5	15:20	16:05	onshore	1	R
13/12/2012	3	11:00	11:45	on rigs	20	R
18/12/2012	15	13:40	14:25	Inshore	15	R/C
18/12/2012	1	15:10	16:10	Inshore	17	C/R
18/12/2012	4	15:10	16:10	Inshore	40	R
19/12/2012	4	07:00	08:00	offshore	10	C

Herring gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
19/12/2012	1	07:20	08:20	in and offshore	20-50	C
19/12/2012	12	09:30	10:15	Inshore	2	C
19/12/2012	6	10:00	10:45	both	8	C
19/12/2012	5	10:55	11:40	Inshore	15	C/R
19/12/2012	11	11:00	11:45	Inshore	4	C
19/12/2012	10	12:15	13:00	Inshore	2	C
19/12/2012	3	12:20	13:05	Inshore	4	R
19/12/2012	2	13:15	14:00	Inshore	50	F/C
19/12/2012	9	14:00	14:45	Inshore	4	R
19/12/2012	13	14:40	15:25	Inshore	7	C
19/12/2012	8	15:15	16:00	Inshore	20	F
02/01/2013	3	15:15	16:15	Inshore	20	R
03/01/2013	4	07:00	08:00	onshore	4	R
03/01/2013	3	07:00	08:00	Inshore	40	R
03/01/2013	8	08:30	09:15	Inshore	10	C
03/01/2013	13	09:00	09:45	Inshore	20	C
03/01/2013	10	11:00	11:45	Inshore	4	F
03/01/2013	1	11:00	11:45	Inshore	32	R/C
03/01/2013	2	12:00	12:45	Inshore	20	F
03/01/2013	5	13:25	14:10	Inshore	8	C/R
03/01/2013	6	14:30	15:15	Inshore	8	R
03/01/2013	7	15:25	16:10	Inshore	120	C
21/01/2013	1	16:00	16:45	Inshore	40	R/C
21/01/2013	2	16:00	16:45	Inshore	35	R/C
22/01/2013	12	09:25	10:10	Inshore	6	C
22/01/2013	11	11:05	11:50	Inshore	2	C
22/01/2013	10	12:20	13:05	Inshore	12	C/F
22/01/2013	9	13:40	14:25	both	20	C/R
22/01/2013	8	14:45	15:30	both	20	C

Herring gull - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
22/01/2013	7	15:40	16:25	Inshore	15	C/R
22/01/2013	1	07:25	08:10	both	30	F/R
22/01/2013	4	08:50	09:35	Inshore	25	R/C
22/01/2013	3	09:45	10:30	Inshore	28	C/F
22/01/2013	13	11:00	11:45	Inshore	20	F/R
22/01/2013	14	12:00	12:45	onshore	54	R
22/01/2013	15	13:00	13:45	Inshore	5	C
22/01/2013	5	14:25	15:10	both	4	F/C/R
22/01/2013	5	14:25	15:10	Inshore	16	F/C/R
22/01/2013	6	15:30	16:15	both	60	C/F
05/02/2013	3	16:15	17:15	Inshore	50	C/R
06/02/2013	3	07:00	08:00	Inshore	30	F
06/02/2013	12	10:00	10:45	Inshore	10	F
06/02/2013	13	12:30	13:15	Inshore	12	C/R
06/02/2013	14	13:25	14:10	Inshore	8	F/R
06/02/2013	8	15:15	16:00	Inshore	10	F
06/02/2013	7	16:15	17:00	Inshore	4	C
18/02/2013	15	14:45	15:30	Inshore	20	R
18/02/2013	14	14:45	15:30	Inshore	3	R
18/02/2013	1	16:30	17:30	Inshore	80	R
18/02/2013	2	16:15	17:15	Inshore	320	R
19/02/2013	1	07:00	08:00	Inshore	60	R
19/02/2013	2	07:00	08:00	Inshore	350	F/R
19/02/2013	8	08:45	09:30	Inshore	10	R
19/02/2013	13	09:15	10:00	Inshore	42	R
19/02/2013	9	10:15	11:00	Inshore	10	R
19/02/2013	3	10:45	11:30	Inshore	60	R
19/02/2013	4	11:50	12:35	Inshore	100	R
19/02/2013	5	12:55	13:40	Inshore	80	R

Herring gull - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
19/02/2013	11	13:00	13:45	Inshore	10	R
19/02/2013	6	14:20	15:05	Inshore	70	R
19/02/2013	12	14:45	15:30	Inshore	100	R
19/02/2013	7	15:15	16:00	Inshore	16	R
04/03/2013	4	16:45	17:45	Onshore	6	C
04/03/2013	4	16:45	17:45	Inshore	40	R
04/03/2013	4	16:45	17:45	Inshore	100	F
05/03/2013	3	06:25	07:25	Inshore	50	R
05/03/2013	4	06:30	07:30	Inshore	20	R
05/03/2013	6	08:50	09:35	Inshore	40	R
05/03/2013	5	10:20	11:05	Inshore	40	R
05/03/2013	11	10:45	11:30	Inshore	4	R
05/03/2013	2	11:55	12:40	Inshore	60	F,R
05/03/2013	10	12:15	13:00	Inshore	4	C
05/03/2013	1	12:55	13:40	Inshore	7	R
05/03/2013	9	13:45	14:30	Inshore	4	R
05/03/2013	13	14:45	15:30	Inshore	5	R
05/03/2013	8	14:45	15:30	Inshore	10	R
05/03/2013	14	15:45	16:30	Inshore	10	R
05/03/2013	7	15:45	16:30	Inshore	10	R
05/03/2013	15	16:45	17:30	Inshore	10	R
26/03/2013	1	17:30	18:30	Onshore	10	C
27/032013	2	05:50	06:50	Onshore	20	F
27/03/2013	1	06:00	07:00	Inshore	20	F
27/03/2013	12	09:00	09:45	Onshore	45	F/C
27/03/2013	11	10:45	11:30	Onshore	20	F
27/03/2013	10	11:50	12:35	Onshore	15	F
27/03/2013	140	12:45	13:00	Inshore	40	F
27/03/2013	9	13:15	14:00	Onshore	40	F

Herring gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
27/03/2013	8	14:15	15:00	Onshore	60	F
27/03/2013	5	15:00	15:45	Inshore	20	C
27/03/2013	7	15:15	16:00	Onshore	30	F

Table 7: Common gull - Wintering VP surveys results (September 2012 to March 2013)

Common gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
31/10/2012	3	06:15	07:15	Inshore	2	R
31/10/2012	13	13:45	14:30	Onshore	1	R
31/10/2012	15	15:45	16:30	Onshore	3	C
11/12/2012	3	15:30	16:30	Inshore	35	F/R
12/12/2012	2	06:45	07:30	Inshore	30	F
12/12/2012	6	08:00	08:45	Onshore	4	F/C
12/12/2012	11	12:30	13:15		4	F
12/12/2012	12	14:15	15:00	Inshore	2	F
02/01/2013	4	15:15	16:15	Inshore	20	R
02/01/2013	4	15:15	16:15	Inshore	80	R
02/01/2013	3	15:15	16:15	Inshore	20	R
03/01/2013	4	07:00	08:00	Inshore	200	R
03/01/2013	5	13:25	14:10	Inshore	43	R
05/02/2013	3	16:15	17:15	Inshore	10	C
06/02/2013	3	07:00	08:00	Inshore	10	F
06/02/2013	14	13:25	14:10	Inshore	6	C
18/02/2013	14	14:45	15:30	Inshore	300	R
18/02/2013	2	16:15	17:15	Inshore	5	R

Common gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
19/02/2013	4	11:50	12:35	Inshore	20	C
19/02/2013	5	12:55	13:40	Inshore	9	R
19/02/2013	6	14:20	15:05	Inshore	250	R
04/03/2013	4	16:45	17:45	Inshore	40	R
05/03/2013	5	10:20	11:05	Inshore	11	R
05/03/2013	13	14:45	15:30	Inshore	1	C
05/03/2013	14	15:45	16:30	Inshore	50	R
05/03/2013	15	16:45	17:30	Inshore	200	R
26/03/2013	1	17:30	18:30	Onshore	8	C
26/03/2013	2	17:30	18:30	Inshore	20	F
27/03/2013	1	06:00	07:00	Inshore	40	F
27/03/2013	12	09:00	09:45	Onshore	20	F/C
27/03/2013	15	09:00	09:45	Inshore	20	F
27/03/2013	14	10:00	10:45	Inshore	10	F
27/03/2013	13	11:00	11:45	Inshore	10	F
27/03/2013	140	12:45	13:00	Inshore	100	R
27/03/2013	9	13:15	14:00	Onshore	15	F
27/03/2013	4	14:00	14:45	Inshore	10	F
27/03/2013	6	16:15	17:00	Inshore	100	F

Table 8: Lesser black-backed gull - Wintering VP surveys results (September 2012 to March 2013)

Lesser black-backed gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
31/10/2012	10	11:30	12:15	Inshore	2	C
31/10/2012	11	10:20	11:10	Inshore	1	C

Lesser black-backed gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
27/11/2012	2	15:30	16:30	Inshore	10	R
28/11/2012	3	14:30	15:15	Inshore	12	R
28/11/2012	5	15:30	16:15	offshore	2	R
29/11/2012	3	07:00	08:00	Inshore	5	R
12/12/2012	10	11:05	11:50	Inshore	4	F
02/01/2013	4	15:15	16:15	Inshore	4	R
03/01/2013	4	07:00	08:00	onshore	4	R
03/01/2013	1	11:00	11:45	Inshore	4	C
06/02/2013	7	16:15	17:00	Inshore	4	C
18/02/2013	15	14:45	15:30	Inshore	10	R
19/02/2013	5	12:55	13:40	Inshore	3	R
19/02/2013	6	14:20	15:05	Inshore	20	R
27/03/2013	1	06:00	07:00	Inshore	10	F
27/03/2013	15	09:00	09:45	Inshore	4	F
27/03/2013	13	11:00	11:45	Inshore	10	F
27/03/2013	140	12:45	13:00	Inshore	40	F
27/03/2013	5	15:00	15:45	Inshore	4	C
27/03/2013	6	16:15	17:00	Inshore	2	F

Table 9: Little gull - Wintering VP surveys results (September 2012 to March 2013)

Little gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
27/032013	2	05:50	06:50	Onshore	3	F along coast
27/03/2013	140	12:45	13:00	Inshore	1	F
27/03/2013	9	13:15	14:00	Onshore	2	F
27/03/2013	4	14:00	14:45	Inshore	4	F

Little gull - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
27/03/2013	8	14:15	15:00	Onshore	8	F
27/03/2013	6	16:15	17:00	Inshore	5	F

Table 10: Kittiwake - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
04/03/2013	4	16:45	17:45	Inshore	20	R
05/03/2013	3	06:25	07:25	Inshore	8	R
26/03/2013	1	17:30	18:30	Onshore	3	C
26/03/2013	2	17:30	18:30	Inshore	20	R
27/03/2013	2	05:50	06:50	Onshore	15	F/R
27/03/2013	1	06:00	07:00	Inshore	40	F
27/03/2013	140	12:45	13:00	Inshore	140	R

Table 11: Mixed gulls - Wintering VP surveys results (September 2012 to March 2013)

Mixed gulls - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/12/2012	10	11:05	11:50	Inshore	200	F
22/01/2013	2	07:15	08:00	Inshore	300	R/F/C, BH, HG, GBBG
22/01/2013	11	11:05	11:50	Inshore	50	F
05/02/2013	3	16:15	17:15	Inshore	800	R
06/02/2013	4	07:00	08:00	Inshore	2	C/R/F
06/02/2013	5	08:10	08:55	Inshore	50	C/R, Flock of BH, GB and HG
06/02/2013	2	09:25	10:10	Inshore	400	F, flock of CM, BH, HG
06/02/2013	1	10:25	11:10	Inshore	30	C/F/R. Flock of BH, HG, GB, and CM

Mixed gulls - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
06/02/2013	15	14:45	15:30	Inshore	40	C/R
06/02/2013	6	16:05	16:50	Inshore	200	F/C

Table 12: Gannet - Wintering VP surveys results (September 2012 to March 2013)

Gannet - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
19/12/2012	2	13:15	14:00	Inshore	1	C
06/02/2013	12	10:00	10:45	Inshore	4	C
19/02/2013	11	13:00	13:45	Inshore	1	C
05/03/2013	6	08:50	09:35	Inshore	1	C
05/03/2013	7	15:45	16:30	Inshore	3	C
27/03/2013	1	06:00	07:00	Inshore	20	C
27/03/2013	15	09:00	09:45	Inshore	2	C
27/03/2013	14	10:00	10:45	Inshore	2	C
27/03/2013	11	10:45	11:30	Inshore	8	C - S to N
27/03/2013	13	11:00	11:45	Inshore	1	C
27/03/2013	10	11:50	12:35	Inshore	3	C - S to N
27/03/2013	140	12:45	13:00	Inshore	3	C
27/03/2013	9	13:15	14:00	Inshore	6	C
27/03/2013	4	14:00	14:45	Inshore	10	C
27/03/2013	5	15:00	15:45	Inshore	10	C
27/03/2013	7	15:15	16:00	Inshore	37	C - S to N
27/03/2013	6	16:15	17:00	Inshore	10	C

Table 13: Barnacle goose - Wintering VP surveys results (September 2012 to March 2013)

Barnacle goose - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
31/10/2012	3	06:15	07:15	Inshore	60	C to S
31/10/2012	2	06:15	07:15	Inshore	92	C- N to S
12/12/2012	2	06:45	07:30	Inshore	40	C
12/12/2012	3	06:45	07:30	Inshore	40	C
12/12/2012	15	09:15	10:00	onshore	1	C- N to S
13/12/2012	2	12:00	12:45	onshore	300	C
03/01/2013	4	07:00	08:00	Inshore	150	C
03/01/2013	3	07:00	08:00	Inshore	250	C- N-S
03/01/2013	10	11:00	11:45	Inshore	40	R
19/02/2013	1	07:00	08:00	Inshore	40	C
19/02/2013	2	07:00	08:00	Inshore	90	C

Table 14: Brent goose - Wintering VP surveys results (September 2012 to March 2013)

Brent goose - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
31/10/2012	10	11:30	12:15	Inshore	1	C
31/10/2012	11	10:20	11:10	Inshore	2	C
27/11/2012	1	12:10	12:55		1	C
28/11/2012	7	08:30	09:15	Inshore	1	C
28/11/2012	9	10:35	11:20	Inshore	1	C
28/11/2012	3	14:30	15:15	offshore	2	C
28/11/2012	6	08:30	09:15	Inshore	2	C
28/11/2012	14	11:00	11:45		15	C
28/11/2012	15	10:00	10:45	Inshore	2	C
29/11/2012	3	07:00	08:00		2	C
12/12/2012	3	06:45	07:30	Inshore	10	C

Brent goose - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
19/12/2012	5	10:55	11:40	Inshore	4	C
19/12/2012	11	11:00	11:45	Inshore	10	C
19/12/2012	9	14:00	14:45	Inshore	60	C
03/01/2013	4	07:00	08:00	Inshore	20	C
03/01/2013	11	12:30	13:15	Inshore	1	C
21/01/2013	1	16:00	16:45	Inshore	7	C
22/01/2013	2	07:15	08:00	Inshore	8	C
22/01/2013	12	09:25	10:10	Inshore	25	C
22/01/2013	11	11:05	11:50	Inshore	37	C
22/01/2013	9	13:40	14:25	Inshore	18	C
22/01/2013	7	15:40	16:25	Inshore	36	C
22/01/2013	1	07:25	08:10	Inshore	8	C
22/01/2013	3	09:45	10:30	Inshore	25	C
22/01/2013	13	11:00	11:45	both	44	C- N to S
22/01/2013	14	12:00	12:45	Inshore	110	C- N to S
22/01/2013	15	13:00	13:45	Inshore	36	C- N to S
22/01/2013	6	15:30	16:15	both	31	C- N to S
06/02/2013	12	10:00	10:45	Inshore	4	F
06/02/2013	8	15:15	16:00	Inshore	70	R
19/02/2013	9	10:15	11:00	Inshore	20	C
05/03/2013	14	15:45	16:30	Inshore	1	C

Table 15: Teal - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
31/10/2012	1	12:40	13:25	Inshore	4	C

Table 16: Common scoter - Wintering VP surveys results (September 2012 to March 2013)

Common scoter - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
27/11/2012	1	12:10	12:55		20	C
27/11/2012	14	10:00	10:45	Inshore	50	R
28/11/2012	7	08:30	09:15	Inshore	9	C
28/11/2012	3	14:30	15:15	offshore	20	C
28/11/2012	4	07:00	07:45	Inshore	4	C
28/11/2012	13	11:50	12:35	Inshore	10	R
28/11/2012	15	10:00	10:45	Inshore	40	R
12/12/2012	15	09:15	10:00	Inshore	11	C
13/12/2012	3	11:00	11:45	Inshore	6	R
18/12/2012	14	14:00	14:45	Inshore	6	R
19/12/2012	13	14:40	15:25	Inshore	30	R
03/01/2013	8	08:30	09:15	Inshore	2	F
03/01/2013	1	11:00	11:45	Inshore	1	C
03/01/2013	5	13:25	14:10	Inshore	16	C
04/01/2013	15	09:15	10:00	Inshore	10	R
05/03/2013	15	16:45	17:30	Inshore	2	C
27/03/2013	14	10:00	10:45	Inshore	1	R
27/11/2012	1	12:10	12:55	Inshore	20	C
27/11/2012	14	10:00	10:45	Inshore	50	R
28/11/2012	7	08:30	09:15	Inshore	9	C

Table 17: Wigeon - Wintering VP surveys results (September 2012 to March 2013)

Wigeon - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
27/11/2012	10	12:10	12:55		20	C
27/11/2012	10	11:35	12:10		50	C

Wigeon - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
27/11/2012	12	09:05	09:40	Inshore	300	R
28/11/2012	10	12:10	12:55	Inshore	8	R
28/11/2012	8	09:30	10:15	Inshore	7	R
12/12/2012	6	08:00	08:45	Inshore	9	R
12/12/2012	14	10:30	11:15	Inshore	60	F/R
12/12/2012	10	11:05	11:50	Inshore	20	R
12/12/2012	13	11:30	12:15	Inshore	30	R
12/12/2012	11	12:30	13:15		20	R
19/12/2012	2	13:15	14:00	Inshore	30	C
03/01/2013	11	12:30	13:15	Inshore	60	R
03/01/2013	12	14:30	15:15	Inshore	200	R
03/01/2013	7	15:25	16:10	Inshore	150	R
22/01/2013	12	09:25	10:10	Inshore	16	C
22/01/2013	3	09:45	10:30	Inshore	10	C
22/01/2013	14	12:00	12:45	Inshore	50	R
22/01/2013	15	13:00	13:45	Inshore	15	F/R
22/01/2013	6	15:30	16:15	Inshore	36	F/C
19/02/2013	3	10:45	11:30	Inshore	320	R
19/02/2013	5	12:55	13:40	Inshore	160	R
19/02/2013	6	14:20	15:05	Inshore	270	R
19/02/2013	12	14:45	15:30	Inshore	60	F
19/02/2013	7	15:15	16:00	Inshore	270	R

Table 18: Shoveler - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
19/02/2013	11	13:00	13:45	Inshore	3	R

Table 19: Shelduck - Wintering VP surveys results (September 2012 to March 2013)

Shelduck - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
28/11/2012	3	14:30	15:15	offshore	5	C
28/11/2012	15	10:00	10:45	Inshore	2	C
12/12/2012	10	11:05	11:50	Inshore	10	C
19/12/2012	11	11:00	11:45	Inshore	1	C
03/01/2013	11	12:30	13:15	Inshore	4	R
03/01/2013	12	14:30	15:15	Inshore	6	R
04/01/2013	15	09:15	10:00	Inshore	5	R
22/01/2013	10	12:20	13:05	Inshore	3	C
22/01/2013	9	13:40	14:25	Inshore	4	C
22/01/2013	7	15:40	16:25	Inshore	8	C
22/01/2013	3	09:45	10:30	Inshore	3	C
22/01/2013	15	13:00	13:45	Inshore	1	R
22/01/2013	6	15:30	16:15	Inshore	13	C
06/02/2013	4	07:00	08:00	Inshore	2	C
06/02/2013	5	08:10	08:55	Inshore	1	C
06/02/2013	1	10:25	11:10	Inshore	2	C
19/02/2013	1	07:00	08:00	Inshore	1	C
19/02/2013	11	13:00	13:45	Inshore	4	R
04/03/2013	4	16:45	17:45	Inshore	2	C
05/03/2013	4	06:30	07:30	Inshore	2	C

Table 20: Tufted duck - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
28/11/2012	14	11:00	11:45	Inshore	15	C

Table 21: Pintail - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
18/12/2012	15	13:40	14:25	Inshore	2	R/F
03/01/2013	5	13:25	14:10	Inshore	12	C
03/01/2013	12	14:30	15:15	Inshore	40	R
22/01/2013	12	09:25	10:10	both	6	C
19/02/2013	3	10:45	11:30	Inshore	9	R
19/02/2013	6	14:20	15:05	Inshore	110	R
19/02/2013	7	15:15	16:00	Inshore	110	R

Table 22: Goldeneye - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
28/11/2012	15	10:00	10:45	Inshore	2	C
12/12/2012	7	08:00	08:45	Inshore	1	R

Table 23: Mallard - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/12/2012	10	11:05	11:50	Inshore	60	R
12/12/2012	11	12:30	13:15	Inshore	10	R
18/12/2012	15	13:40	14:25	Inshore	2	R/C
19/12/2012	12	09:30	10:15	Inshore	30	R
19/12/2012	13	14:40	15:25	Inshore	2	C
03/01/2013	1	11:00	11:45	Inshore	1	C
03/01/2013	11	12:30	13:15	Inshore	2	R
03/01/2013	12	14:30	15:15	Inshore	6	R
22/01/2013	10	12:20	13:05	Inshore	2	C

Table 24: Whooper Swan - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
03/01/2013	13	09:00	09:45	Inshore	3	C

Table 25: Curlew - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
28/11/2012	10	12:10	12:55	Inshore	1	C
22/01/2013	10	12:20	13:05	Inshore	2	C

Table 26: Redshank - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
05/03/2013	3	06:25	07:25	Inshore	3	C
05/03/2013	6	08:50	09:35	Inshore	1	C
27/03/2013	10	11:50	12:35	Onshore	3	C

Table 27: Oystercatcher - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
05/03/2013	11	10:45	11:30	Inshore	1	C
26/03/2013	2	17:30	18:30	Inshore	2	C

Table 28: Avocet - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
05/03/2013	14	15:45	16:30	Inshore	1	C

Table 29: Lapwing - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
03/01/2013	13	09:00	09:45	Inshore	3	C
22/01/2013	2	07:15	08:00	Inshore	1	C
22/01/2013	6	15:30	16:15	onshore	1	R

Table 30: Dunlin - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
22/01/2013	8	14:45	15:30	inshore	4	C
22/01/2013	13	11:00	11:45	Inshore	2	F/R

Table 31: Turnstone - Wintering VP surveys results (September 2012 to March 2013)

Turnstone - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
30/10/2012	3	16:00	17:00	Inshore	1	F
31/10/2012	11	10:20	11:10	Inshore	1	C
31/10/2012	8	13:15	14:00	Onshore	10	F
31/10/2012	9	12:00	12:45	Inshore	1	C
31/10/2012	7	14:30	15:15	Onshore	2	C
27/11/2012	7	14:35	15:20	Onshore	4	F
27/11/2012	9	12:45	13:30	Onshore	1	C
27/11/2012	10	11:35	12:10	Onshore	10	F
27/11/2012	11	10:20	11:10	Onshore	10	F
28/11/2012	11	31:10:00	13:55	Onshore	10	C/F
28/11/2012	12	14:30	15:15	Onshore	3	C
12/12/2012	9	09:45	10:30	Inshore	2	C
12/12/2012	10	11:05	11:50	Onshore	2	F


Turnstone - Wintering VP surveys results (September 2012 to March 2013)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/12/2012	11	12:30	13:15	Onshore	10	F
19/12/2012	12	09:30	10:15	Inshore	1	F
19/12/2012	9	14:00	14:45	Onshore	1	F
19/12/2012	8	15:15	16:00	Inshore	4	F
03/01/2013	8	08:30	09:15	Inshore	2	C
03/01/2013	1	11:00	11:45	Inshore	3	C
03/01/2013	11	12:30	13:15	Inshore	6	C
03/01/2013	7	15:25	16:10	Inshore	5	C
06/02/2013	10	12:45	13:30	Inshore	1	C
19/02/2013	7	15:15	16:00	Onshore	2	C
05/03/2013	5	10:20	11:05	Inshore	2	C
05/03/2013	8	14:45	15:30	Onshore	1	F

Table 32: Razorbill - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
19/12/2012	5	10:55	11:40	Inshore	1	C

Table 33: Guillemot - Wintering VP surveys results (September 2012 to March 2013)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
27/03/2013	9	13:15	14:00	Inshore	1	F/C

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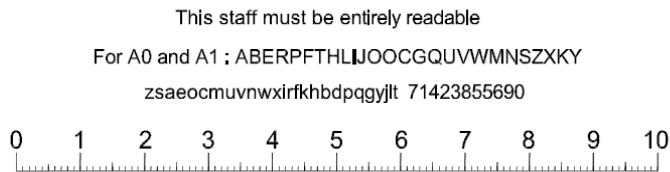
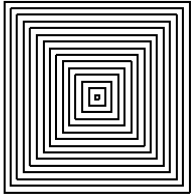
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EDF Energy

Sizewell C Nuclear Power Station

Red-throated Diver Survey Report 2013-2014



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Sizewell C Nuclear Power Station

Red-throated Diver Survey Report 2013-2014

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- B- 2013/14 VP Survey Results
- C- Inventory of Incidental Seabird Species Recorded During 2013/14 VP Surveys

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Figure 2: Distance from the Coast of Red-throated Diver Observations

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1 Executive Summary

The Outer Thames Special Protection Area (SPA) is designated for red-throated diver (*Gavia stellata*). Construction of the proposed nuclear facility, Sizewell C, could potentially affect red-throated divers using the SPA through the construction and use of proposed marine or near-shore infrastructure. The purpose of this report is to present the results of on-shore based surveys for wintering red-throated diver off the Suffolk Coast in the vicinity of the proposed Sizewell C Nuclear Power Station to help inform the assessment process.

The surveys were undertaken by Hyder Consulting (UK) Limited between October 2013 and March 2014 (inclusive). Previously surveys were undertaken by Hyder Consulting (UK) in October 2012 to March 2013 (inclusive) and by AMEC Environment & Infrastructures UK Ltd ('AMEC') in October 2011 to April 2012 (inclusive). This report outlines the findings from the survey period 2013/2014. The previous surveys undertaken by Hyder Consulting (UK) (2012/13) are referred to as a comparison and to evaluate trends during these two winter survey periods.

Natural England have indicated that wintering cormorants (*Phalacrocorax carbo*) may get added to the SPA citation in the future, so numbers of cormorant, together with other wintering seabirds (waders, wildfowl and gulls) were also noted during these surveys.

The data from surveys undertaken during the 2013/14 winter period revealed the presence of large numbers of red-throated divers along the Suffolk coast in close proximity to Sizewell. The highest numbers were noted offshore at Dunwich (Vantage Points 13-15) and Orfordness (VPs 10-12). The greatest number of birds recorded during any one survey was 1,976, equating to 30.56% of the cited Outer Thames Estuary SPA population (6466 individuals Joint Nature Conservation Committee (JNCC) 2011). In comparison, 1,261 individuals were observed on one day during the 2012/13 survey period, which equates to 19.5% of the cited Outer Thames Estuary SPA population.

A high degree of variation was observed, both spatially and temporally, in the number of birds that were recorded throughout the survey period in 2012/13 and 2013/14. Statistical analysis of red throated diver sightings indicated a significant difference in observations across the survey years, across the months during which surveys were carried out, and among survey areas (Orfordness, Dunwich and the core survey area close to the proposed Sizewell C Power Station).

The VPs at the northern and southern ends of the study area, at Dunwich and Orfordness recorded the largest numbers of red-throated divers, which suggests concentrations of divers in these areas. This trend was also found during the 2012/13 survey period. The reasons for this are unclear but will most likely reflect the availability of prey resources, or optimal foraging habitat.

Dusk and dawn VP surveys did not record any significant nocturnal behaviour patterns; however, large numbers of red-throated divers were observed commuting at dawn on a number of occasions.

2 Introduction

EDF Energy/NNB GenCo (hereafter referred to as NNB) is to submit an application for a Development Consent Order (DCO) to construct and operate a new nuclear power station,

Sizewell C, near the town of Leiston in Suffolk. The proposal site lies within an area of high landscape and ecological sensitivity, within an Area of Outstanding Natural Beauty (AONB) and adjacent to the Minsmere to Walberswick Heaths and Marshes Special Area of Conservation (SAC), the Sandlings Special Protection Area (SPA) and the Outer Thames Estuary SPA. A small part lies within the Sizewell Marshes Site of Special Scientific Interest (SSSI).

A considerable amount of ecological survey work has been carried out within and around the proposal site since 2007. This applies both to the main site and the preferred sites for associated development. Ornithological survey effort in 2013/14 has focused on sea-birds, notably red-throated diver (*Gavia stellata*) and other species such as cormorant. This report summarises the red-throated diver survey work undertaken in 2013/14.

Red-throated diver are an amber listed species of conservation concern in the UK (Eaton *et al*, 2009); listed in Annex I of the Birds Directive; and a qualifying feature of the Outer Thames Estuary SPA, which is regarded as the most important site for wintering red-throated divers in the UK (Natural England 2010). This SPA supports 38 % of the total UK wintering population (6466 individuals (JNCC 2011) and no alternative sites are known to protect a similar or equivalent number of this species.

Red-throated divers can be seen offshore from Suffolk in all months of the year, but the peak period is usually from late-November to February (Piotrowski, 2003). Numbers vary greatly between years, but the offshore waters between Orfordness and Lowestoft are known to support high abundances of wintering red-throated divers (Piotrowski, 2003). It is difficult to predict the reasons behind the variations in abundance, but they are likely to be related to factors including weather conditions and the availability and distribution of prey species.

Natural England has indicated that the following species could potentially be added to the Outer Thames Estuary SPA designation:

- Little tern (*Sternula albifrons*) a summer breeding visitor.
- Common tern (*Sterna hirundo*) a summer breeding visitor.
- Cormorant (*Phalacrocorax carbo*) present all year round.

Cormorants were also recorded throughout the red-throated diver surveys as incidental sightings (note that common tern and little tern are summer visitors and therefore will not have been picked up during the winter red-throated diver surveys).

The purpose of this report is to present the results of surveys for wintering red-throated diver off the Suffolk Coast in the vicinity of the proposed Sizewell C Nuclear Power Station ('the proposed development'). The surveys were undertaken by Hyder Consulting (UK) Limited between October 2013 and March 2014 (inclusive).

3 Methodology

In order to ensure a robust evidence base is available to inform the assessment of the potential effects of the proposals on red-throated divers within the Outer Thames Estuary SPA, baseline information on the abundance and distribution of red-throated divers within the inshore waters in the vicinity of Sizewell has been collected. Due to the high variation in wintering red-throated diver abundance, it is considered necessary to gather such information over more than a single season and therefore data has been collected over three years. These survey data will be used to augment published data on red-throated diver numbers and distribution when undertaking the assessment.

As discussed above, surveys for wintering red-throated divers were undertaken by AMEC during the winter of 2011/12. Survey work undertaken by Hyder Consulting during the winters of 2012/13 and 2013/14 and has included a repeat of the AMEC methodology, but with the addition of three VPs to the north of Minsmere, as far as Dunwich, in order to capture the route of likely boat movements during the construction phase of SZC.

The survey locations extended from Dunwich in the north to Orfordness in the south in order to capture the full extent of the likely potential affected environment inside of Dunwich/Sizewell Beach.

Figure A indicates the potential indicative route for shipping inshore of the Dunwich and Sizewell Banks.

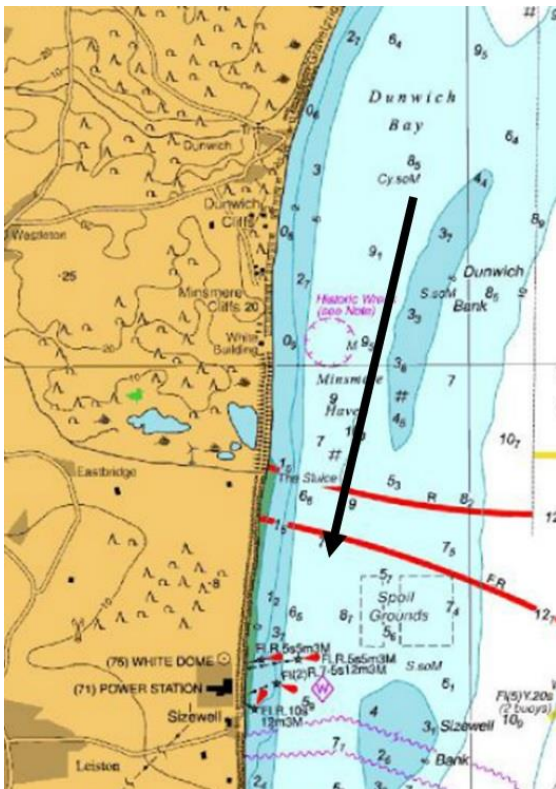


Figure A: Indicative potential shipping route

3.1 2013/14 Surveys

The surveys undertaken in 2013/14 followed the same methodology as the 2012/13 surveys which included both day time VP and dawn and dusk surveys as agreed with Natural England ([Personal Communication between Hyder Consulting 2013 and Alison Collins])

At each VP, red-throated diver activity was recorded across a 45-minute period. Surveys were repeated on a fortnightly basis during the period between October 2013 and March 2014 (inclusive). To reduce the likelihood of double-recording, two surveyors worked simultaneously from opposite ends of the coast undertaking observations at different VP locations. Surveyors were in regular contact by mobile phone to notify each other if, and when, substantial movements of divers occurred, in order to reduce the likelihood of these being counted twice from different VP locations. Although a small degree of double-counting of individual divers is likely to have occurred, which may explain some of the population variations experienced between different years, this is considered likely to be minor, especially when compared to other factors influencing diver numbers, such as weather and the distribution of prey species, for example.

It should be noted that although the focus of the survey effort was the collection of information relating to red-throated divers, other seabirds identified were also recorded, this included a focus on those species identified in the HRA Evidence Plan Framework (EDF 2014). This is discussed further in Section 3.2 of this report.

The survey schedule for each fortnightly visit was as follows:

- Day 1 - 2 x VP surveys (undertaken by two surveyors) between dusk and 45 minutes thereafter
- Day 2 - 15 x VP surveys (undertaken by two surveyors) commencing 45 minutes before dawn at the same two VPs as the dusk surveys, after which the remaining 13 VPs were surveyed throughout the day.

The dusk and dawn surveys were carried out at different VP locations throughout the season to vary the survey times at the different VP locations.

The VP locations (VPs 1-15) and their view-sheds are shown on Figure 1 (Sheets 1 to 5).

3.2 Survey Limitations

It is acknowledged that there are a number of limitations to the shore-based VP survey methodology. This includes the following:

- Red-throated divers could only be identified with a high level of certainty (with the use of a telescope) up to a maximum of approximately 2 - 3km offshore. Birds that were seen at a greater distance were more difficult to identify with any confidence, but in good visibility it was possible to confidently identify red-throated divers up to 3km offshore. In poorer light conditions 2km was regarded as the maximum observation distance
- At higher wind speeds the height of the waves increased and this made observations of divers on the water more difficult. At wave heights above 1m, divers were generally not visible on the sea surface and were only observed when in flight. On seven occasions during the surveys wave heights of 1m or greater were recorded (see Appendix B).

- At times, offshore haze or mist reduced visibility, limiting the effective distance offshore that could be observed. However, visibility was always sufficient to allow at least a 1km distance offshore to be observed. On five occasions during the surveys visibility was obscured beyond 1km. The weather conditions that were experienced during each survey are documented in Appendix B.
- Visibility during the dusk and dawn surveys was generally reduced, due to lower light levels during these times. In addition, at dawn, and for the first hour thereafter, glare from the rising sun also reduced visibility.
- Red-throated divers were observed to spend considerable amounts of time foraging underwater, and as a consequence this made it harder to provide accurate population counts.
- It is considered that there may have been some element of double-counting, with individual divers being counted on more than one occasion during a survey visit. However, this was minimised by the use of two surveyors, and conducting each survey event within the same 24 hour period. On balance, it is considered that double-counting was likely to be minimal.
- Sea wall repairs were undertaken between VP 9 and VP 10 by the Environment Agency (EA) during the survey period, making it unsafe to access Orfordness during this time. Therefore, VPs 10-12 were not surveyed during both October visits (17th and 31st October 2013) and one December visit (5th December 2013).
- VPs located at Orfordness (VPs10-12) were not surveyed during the visit undertaken on 8th and 9th January 2014, as it was deemed unsafe to access this low-lying area during the tidal surge that was forecast at that time.

Despite the above limitations, surveys identified large numbers of red-throated divers and the survey methodology is therefore considered to be both appropriate and robust.

4 Results

The results below describe survey data collected in 2013/14. Total numbers of red-throated divers are compared to the total number cited as being supported by the Outer Thames Estuary SPA (JNCC, 2011). The following data are displayed:

- Total number of red-throated diver observations, per visit and peak counts, put into the context of the SPA.
- Total numbers of red-throated divers observed at each individual VP.
- Distance from the coast at which red-throated divers were observed.
- Other sea birds observed during red-throated diver surveys.
- Comparison of red throated diver survey data between 2012/13 and 2013/14.

4.1 Red-throated Diver

4.1.1 Peak Counts

The total number of birds observed per visit is displayed in Table 3.1, below.

In order to further reduce the risk of double counting, the total numbers displayed for each survey include data from one 24 hour period only. Data from the dusk count undertaken on the day prior to the majority of the survey is excluded from this total, as the same birds could potentially have been observed during dusk (day 1) and then again during the main survey period (day 2).

Table 3.1 Total number of red-throated divers observed during each survey visit (2013/14)

Survey visit	Dates of survey	Total number RTD observed across the whole survey area (i.e. all 15 VPs)
1*	17/10/2013	3
2*	31/10/2013	1
3	13/11/2013	1
4	26/11/2013	112
5*	05/12/2013	48
6	17/12/2013	1,976
7*	09/01/2014	44
8	23/01/2014	964
9	04/02/2014	42
10	20/02/2014	18
11	06/03/2014	781
12	19/03/2014	455

* Surveys at VPs 10-12 were not undertaken during these visits due to heightened health and safety risks at that time.

The survey results indicate that relatively few divers were observed during the period October to November 2013 and in February 2014. The low numbers in February may have been due to high waves obscuring visibility, as the waves during that time were some of the highest recorded during the surveys (refer to Appendix B). The greatest numbers of red-throated divers were recorded during December 2013 and January 2014.

The highest monthly total of 1,976 divers was observed on 17th December 2013. This equates to 30.56% of the cited Outer Thames Estuary SPA population (6,466 red-throated divers).

Red-throated divers were predominately observed commuting (75% of all observations), with birds making both longer flights and shorter foraging flights. Foraging birds were also observed during the surveys, although less frequently (25% of all observations). Divers can spend considerable time underwater; observations during the survey work suggest 30-40 seconds being typical. However as divers can move a considerable distance and surface unexpectedly, no systematic recording of the time spent underwater was undertaken.

4.1.2 Dusk and Dawn Counts

Surveys where red-throated divers were observed during both a dusk count and then the following dawn count occurred on two occasions. On the 22nd January 2014, 8 red throated divers were observed from VP 3. The following dawn count (23rd January 2014), 18 red throated divers were observed. In addition, on the 5th March 2014, 1 red-throated diver was observed from VP 6, the following dawn (6th March 2014), 1 red-throated diver was again observed, from VP6.

Divers are known to be active at dawn and dusk periods; of the red-throated divers observed during the dusk and dawn surveys 99% were commuting (total number of birds observed 372, in 47 separate observations), whilst 1% were foraging (total of 5 birds observed on 4 occasions). This suggests that red-throated divers are undertaking commuting movements during the dawn and dusk periods.

There were few occasions when red-throated diver were observed during the dusk VP and again during the subsequent dawn VP, this could suggest that limited nocturnal movements of red-throated divers occur.

4.1.3 Spatial Distribution

A total of 4,497 red-throated dives were observed during the course of the 2013/14 survey period, with a maximum of 700 red-throated divers being observed during any single observation (17th December 2013 from VP 15). Table 3.2 below details the peak counts of red throated diver observed during any one survey and the mean number of red-throated divers observed from each of the 15 VPs throughout the 2013/14 survey period.

These data indicate that the VPs where the largest numbers of red-throated diver observations were located at the extremities of the survey area, at Dunwich (VPs 13-15) and at Orfordness (VPs 10-12). The exceptions to this are the high numbers observed at VP 1 on 23rd January 2014 whereby a total of 259 red-throated divers were observed. This VP is located near Minsmere, in close proximity to the location for the proposed development. During this visit high numbers of red-throated divers were also observed at other VPs along the coast, with a total of 964 red-throated divers being observed, which was the second highest count during the survey period. In general, low numbers of red-throated divers were observed at VPs 2-4, which were located near to the current Sizewell B Power Station.

Table 3.2 Peak number of red-throated divers observed at each VP during the 2013/14 survey period

VP Number	Peak counts of red-throated diver observed in 2013/14	Mean number of RTD observed per survey visit 2013/14
1	200	42.83
2	6	6.92
3	14	7.92
4	8	8.83
5	55	7.83
6	50	8.67
7	24	23.00
8	43	13.42
9	24	9.58
10	100	31.63
11	200	83.88
12	120	51.50
13	60	18.25
14	80	28.67
15	700	87.50

4.1.4 Distance from the Coast

Red throated divers were observed out to a maximum of 3km offshore during the 2013/14 survey period (which is the limit of the shore based survey methodology that was used). This is the same as the maximum distance at which red-throated divers were observed during the 2012/13 survey period. Figure 2 displays the number of red-throated divers observed at various distance bands from the shore (0-500m, 501-1000m, 1001-2000m and >2000m) during each survey. Red-throated divers were predominantly observed between the 501-1000m distance band, with large numbers of divers occasionally observed in the 1001- 2000m distance band; for example, 700 birds were observed between 1001m and 2000m offshore in December 2013.

4.2 Other Seabirds

Although the focus of the survey work was to record the distribution and abundance of red-throated divers, other seabird, (gulls, water fowl, other divers, cormorants and waders) species were also recorded. This includes wintering cormorants that will be added to the SPA (as described in the introduction), as incidental observations. A total of 42 additional species were recorded using either the shore or inshore waters.

Observations of these secondary species are displayed in tables below:

- Table 3.3 additional species to be added to the SPA
- Table 3.4 seabirds, sea ducks and gulls
- Table 3.5 waterfowl

- Table 3.6 waders

These incidental records are presented in Table 3.3 and in Appendix D (Tables 1 – 42), with a brief commentary given below:

Table 3.3 Wintering cormorant, (this species will be added to the Outer Thames Estuary SPA designation) observed during the 2013/14 red-throated diver surveys

Common name	Scientific name	Peak count
Cormorant	<i>Phalacrocorax carbo</i>	150

Table 3.4 Wintering Seabirds, sea ducks and gulls observed during the 2013/14 red-throated diver surveys

Common Name	Scientific Name	Peak Counts
Black-headed gull	<i>Chroicocephalus ridibandus</i>	3000
Common gull	<i>Larus canus</i>	450
Common scoter	<i>Melanitta nigra</i>	250
Fulmar	<i>Fulmarus glacialis</i>	2
Gannet	<i>Morus bassanus</i>	16
Great black-backed gull	<i>Larus marinus</i>	57
Great skua	<i>Stercorarius skua</i>	1
Guillemot	<i>Uria aalge</i>	1
Herring gull	<i>Larus argentatus</i>	300
Kittiwake	<i>Rissa tridactyla</i>	100
Lesser black-backed gull	<i>Larus fuscus</i>	150
Long-tailed duck	<i>Clangula hyemalis</i>	2
Velvet scoter	<i>Melanitta fusca</i>	9

Table 3.5 Wintering waterfowl observed during the 2013/14 red-throated diver surveys

Common Name	Scientific Name	Peak Counts
Barnacle goose	<i>Branta leucopsis</i>	80
Brent goose	<i>Branta bernicula</i>	61
Canada goose	<i>Branta canadensis</i>	75
Gadwall	<i>Anas strepera</i>	14
Great crested grebe	<i>Podiceps cristatus</i>	10
Grey heron	<i>Ardea cinerea</i>	1
Greylag goose	<i>Anser anser</i>	5

Common Name	Scientific Name	Peak Counts
Goldeneye	<i>Bucephala clangula</i>	2
Goosander	<i>Mergus merganser</i>	1
Little egret	<i>Egretta garzetta</i>	1
Mallard	<i>Anas platyrhynchos</i>	5
Mute swan	<i>Cygnus olor</i>	3
Pintail	<i>Anas acuta</i>	50
Shelduck	<i>Tadorna tadorna</i>	7
Shoveler	<i>Anas clypeata</i>	6
Teal	<i>Anas crecca</i>	10
Tufted duck	<i>Aythya fuligula</i>	25
Wigeon	<i>Anas Penelope</i>	180

Table 3.6 Wintering wader species observed during the 2013/14 red-throated diver surveys

Common Name	Scientific Name	Peak Counts
Avocet	<i>Recurvirostra avosetta</i>	2
Curlew	<i>Numenius arquata</i>	5
Dunlin	<i>Calidris alpina</i>	50
Lapwing	<i>Vanellus vanellus</i>	7
Oystercatcher	<i>Haematopus ostralegus</i>	2
Redshank	<i>Tringa totanus</i>	6
Ringed plover	<i>Charadrius hiaticula</i>	20
Turnstone	<i>Arenaria interpres</i>	40

Cormorants were the most frequently observed non-gull species. A peak count of 150 cormorants was recorded, Cormorants roost on the Rig structures associated with the A and B stations and were observed leaving the roost at dawn and returning again at dusk. Foraging activity was widespread throughout the survey area. No other cormorant roosts were noted in the survey area (between Orfordness and Dunwich). None of the other potential SPA species additions were observed, being summer visitors.

The most common gull species recorded were black-headed gull (*Larus ridibundus*) being recorded throughout the 2013/14 winter survey period with a peak count of 3000 birds and a mean of 875.6 birds (this is the mean of all birds observed from all VPs per survey visit). Large numbers of other gull species were also recorded, including herring gull (*Larus argentatus*) (peak count of 300 birds and a mean of 337. 5), common gull (*Larus canus*) (peak count of 450 birds and a mean of 96.9 birds), lesser black-backed gull (*Larus fuscus*) (peak count 150 birds and a mean of 154 birds) and greater black-backed gull (*Larus marinus*) (peak count of 57 birds and a mean of 73.75 birds).

The cooling-water outflows create good foraging conditions for gull species, with large numbers of gulls (500 to 1,000 individuals) recorded foraging here during the winter months. It is postulated that this could be due to warm water creating a suitable environment for plant and micro-organism development and in turn attracting fish to these areas, or gulls being attracted to the fish returns from the cooling water systems. The location of the outfalls is considered to represent a significant foraging resource for wintering gulls other incidental bird species largely comprised rafts of wildfowl loafing on the sea or commuting from feeding areas along the coast. This included common scoter (*Melanitta nigra*), with a peak count of 250 birds observed (mean count of 200.16 birds).

4.2.1 Summary of results

A summary of the results is presented below:

- Statistical analysis of red throated diver sighting data in 2012-2014 indicated significant differences in observations across the two survey years, across the months that surveys were carried out and among survey areas (see Section 5).
- The highest numbers were noted at Dunwich (VPs13-15) and Orfordness (VPs10-12).
- The greatest number of birds recorded during any one survey was 1,976, which equates to 30.56% of the cited Outer Thames Estuary SPA population.
- A high degree of variation was observed, both spatially and temporally, in the number of birds that were recorded throughout the survey period.
- Dusk and dawn VP surveys did not conclusively suggest any significant nocturnal behaviour patterns; however, large numbers of red-throated divers were observed commuting at dawn.
- Red-throated diver were observed within the 500-1000m from shore distance band most frequently, although birds were also observed up to 3000m from the shore as well as less than 500m from the shore.

5 Discussion

This section presents a discussion of the survey results.

5.1 Comparison with Previous Years' Survey Data

As surveys have been undertaken in consecutive years a comparison of the data and a statistical comparison of trends observed across both years was undertaken to assess if trends observed were significant.

5.1.1 General comparison

During the surveys undertaken in 2012/13, the highest count of red-throated divers on a single survey was 1,261 birds (observed on 3rd March 2013), which represents 19.5% of the cited Outer Thames Estuary SPA population (JNCC, 2011). In comparison, the greatest numbers recorded during 2013/14 were 1,976 birds (observed on 17th December 2013), which equates to 30.56% of the cited SPA population.

The mean total number of sightings per visit was 374.75 (with a range of 1 to 1978 observed per survey visit) in 2013/14. In comparison, during 2012/13 this was 212.1 (with a range of 0 to 1261 observed per visit).

The temporal distribution of red-throated divers was similar in both the 2012/13 and the 2013/14 survey periods. The month of October revealed low numbers of red-throated divers in both years, with numbers increasing during November, peaking in the period December to January, and falling slightly from February to March (refer to Figure 3). This figure displays the total number of red-throated divers recorded each month, during each survey year.

Data collected during the 2012/13 survey period suggested that the southern and northern portion of the survey area, from Aldeburgh to Orfordness Lighthouse (VPs 10-12) and from Minsmere to Dunwich (VPs 13-15) respectively, supported the greatest number of red-throated divers. This geographic distribution was again observed during the 2013/14 surveys with greater numbers being recorded from Orfordness and Dunwich.

Relatively low numbers of divers were observed in close proximity to Sizewell (VPs 1-4) in both 2012/13 and 2013/14. However, an exception was January 2014, when larger numbers of red-throated diver were recorded from VP1 (total of 259 divers observed on the 23rd January 2014).

5.1.2 Statistical comparison

In order to statistically test for spatial and temporal differences in red throated diver sightings in 2013/14, we carried out a series of general linear model (GLM) analyses. The response variable was the number of red throated diver sightings for each VP (log transformed to normalise residuals) and month, year and location (Dunwich VPs 13-15, Orfordness lighthouse VPs 10-12, or core VPs 1-9) were included as fixed effects.

The analysis indicated the following:

- That there were significantly more sightings in 2013/14 than 2012/13 ($F=23.27$, $df=1,657$ $p<0.001$).

- There were significantly more birds observed in Orfordness/Dunwich (VPs 13-15 and 10-12 respectively) than the core of the survey area (VPs 14-11) ($F=11.23$, $df=2,657$ $p<0.001$).
- There was also a significant effect of month on the number of red throated divers observed, with more sightings in both December and March than other months ($F=23.14$ $df=5,657$ $p<0.001$).

5.1.3 Comparison with published data

In order to ascertain if our observations of red-throated divers were consistent with other survey work, in particular the seasonal and spatial variability observed, we undertook a brief comparison of our findings with available published data of the number of red throated divers observed along the Suffolk coast and their temporal distribution. It should be noted that this was not intended to be a comprehensive review, just a brief comparison.

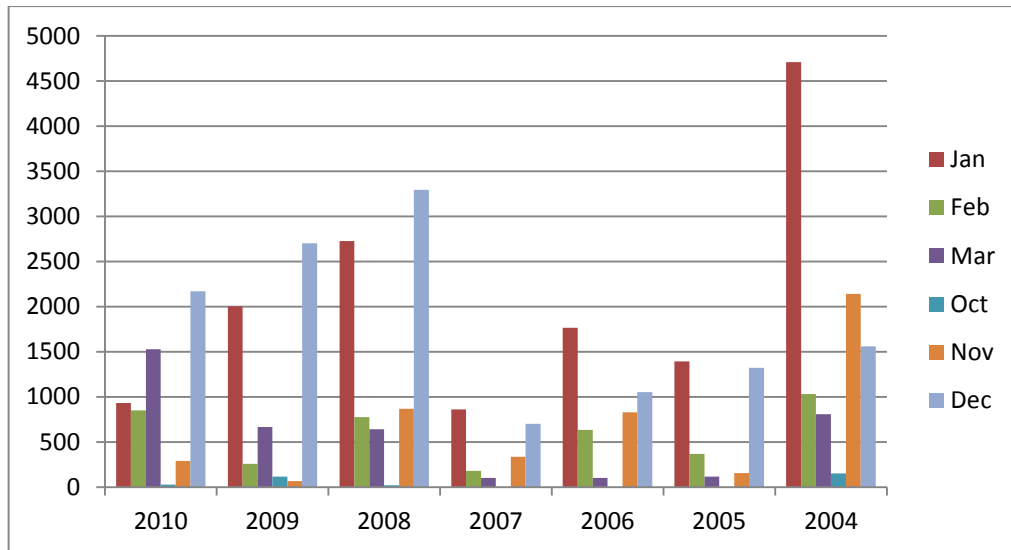
Studies to investigate numbers of inshore water birds using the Greater Thames estuary (between North Kent and Great Yarmouth) carried out by the JNCC over eight winter seasons between 1988/89 and 2006/07 (Webb et al. 2009), indicated that large numbers of divers were recorded, mainly in December and January/February of each year. Within the study area, birds were regularly recorded in flocks of 5-10 individuals, and frequently up to 20, although the largest aggregation recorded was 150 individuals. The study showed that there were large variations in total numbers over the survey period, with numbers of birds ranging from 425 (March 2004) to 10,884 individuals (January 2003), with a mean of peak counts of 6,618 individuals. This variability can be explained by the southern North Sea being the foraging ground for this species (Stienen et al.,2007), therefore this species has the potential to be located over a large area.

Piotrowski (2003) highlights that red-throated divers can be seen offshore from Suffolk in all months of the year, but that the peak period is from late November to February. Numbers occurring offshore of Suffolk during the winter months varies greatly between years but the offshore waters between Orfordness and Lowestoft are known to support large numbers of wintering red-throated divers (Piotrowski 2003).

The red-throated diver population off the Suffolk coast was estimated at 1,500 to 3,000 birds during the 1990s (Piotrowski 2003). Large numbers were then recorded in 2004 (over 8000), with much lower counts during the subsequent winters of 2005 to 2007 (Piotrowski 2003). Manson (2012 and 2011) reports the highest number of red-throated divers observed offshore in the county at approximately 2358 and 5669 respectively. The highest records within the county were recorded within the locality of Thorpness and red-throated divers were observed flying north and south of this point.

To highlight the annual variation in numbers of red-throated divers, AMEC reviewed the figures published in the Birds of Suffolk (Piotrowski 2003). Figure B shows the results of this review, and summarises the total number of red-throated divers recorded off the Suffolk coast during the winter months from 2004 to 2011.

Figure B Annual variations in numbers of Red-throated divers recorded off the Suffolk Coast



The figures have been obtained from Birds of Suffolk 2004-2010.

Figure B shows divers being more abundant in December and January rather than February and March as suggested by the AMEC and Hyder surveys. This difference could be due to a number of factors but the important point to note is that the winter period (October to April) is when red – throated divers are present in the greatest numbers off the Suffolk Coast and that numbers tend to be greatest during the period December to March.

The conclusion of this brief comparison is that the results of the Amec and Hyder survey work is consistent with other survey work for red-throated diver, which highlight the spatial and temporal variability observed.

6 Conclusions

It is considered that the red-throated diver results provide a robust record of the distribution of red-throated divers within 2km of the shore in vicinity of Sizewell. Comparisons of these data with published sources and other reports suggest that there is a good agreement between the numbers and distribution of red-throated divers, in particular the variability observed.

The survey work has identified large numbers of cormorants in close proximity to Sizewell C and as cormorants will be added to the outer Thames Estuary designation, further survey work is suggested to improve the knowledge of patterns of activity and distribution to further inform the assessment process.

7 References

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Appendix A

2013/14 VP Timings and Weather Conditions

Vantage Point 1

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
17/10/2013	14:50	15:35	0.75	Dry	Falling	High: 09:58 Low: 16:28	20	N	2	SW	3-4
31/10/2013	11:40	12:25	0.75	Overcast, rain and breezy	Falling	High: 07:59 Low: 14:12	30	Partly	3-4	SW	8
12/11/2013	12:45	13:30	0.75	Sunny, breezy, 11°C	Low	Low: 12:11	30	N	4	NW	2
26/11/2013	11:30	12:15	0.75	Dry, sunny, 6°C	Rising	Low: 10:24 High: 17:37	20	N	2	W	6-5
05/12/2013	13:15	14:00	0.75	Dry	Falling	High: 12:16 Low: 18:14	250	Y	7-8	W	6
17/12/2013	08:15	09:00	0.75	Dry, overcast, 5°C	Rising	Low: 04:31 High: 10:55	30	N	1	-	8
09/01/2014	13:15	14:00	0.75	Drizzle	Rising	Low: 11:03 High: 18:00	40-50	N	4-5	SW	7

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
23/01/2014	08:15	09:00	0.75	Dry, clear	Low	Low: 09:01	20	N	1-2	SW	3
04/02/2014	11:30	12:15	0.75	Dry, windy clear	Rising	Low:08:04 High:14:20	90	Y	6	S	4
20/02/2014	10:55	11:40	0.75	10.9°C, dry	Rising	Low: 07:52 High: 14:12	40	Y	5	S	8
06/03/2014	10:35	11:20	0.75	Overcast	Rising	Low: 08:04 High: 14:21	30	N	3	S	8
19/03/2014	09:50	10:35	0.75	Overcast, dry	Rising	Low: 06:17 High: 12:34	40	N	4-3	W - SW	8
		TOTAL	9								

Vantage Point 2

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
17/10/2013	16:45	17:30	0.75	Dry	Low	Low: 16:28 High: 22:58	20	N	2-1	SW	6-4
31/10/2013	09:45	10:30	0.75	Overcast, breezy, 14°C to 11°C	Falling	High: 07:59 Low: 14:12	40	Partly	4	SW	8
12/11/2013	13:40	14:25	0.75	Overcast, breezy	Rising	Low: 12:11 High: 19:06	30	N	4	NW	6
26/11/2013	13:25	14:10	0.75	Dry, 6°C	Rising	Low 10:24 High: 17:37	30	N	2	W	4
05/12/2013	07:30	08:15	0.75	Dry	Rising	Low: 06:00 High: 12:16	40	Y	4-5	W-SW	6
16/12/2013	15:00	15:45	0.75	Dry, overcast, 6°C	Low	High: 10:10 Low: 16:02	50	N	3	W	8
17/12/2013	07:15	08:00	0.75	Dry, overcast, 5°C	Rising	Low: 04:31 High: 10:55	30	N	1	-	8

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
09/01/2014	14:30	15:15	0.75	Dry, clear	Rising	Low: 11:03 High:18:00	40	N	3	SW	2
22/01/2014	15:30	16:30	0.75	Dry, haze at 1.5km, 8°C	Falling	High: 14:41 Low: 20:18	40	N	2	SW	4
23/01/2014	06:45	07:45	0.75	Drizzle, haze at 4km, 5°C	Falling	High: 02:51 Low: 09:01	30	N	2-3	SW	4
04/02/2014	12:50	13:35	0.75	Dry, windy	Rising	Low:08:04 High:14:20	80	Y	7	SE	4
20/02/2014	12:10	12:55	0.75	10.5°C to 10.2°, drizzle	Rising	Low: 07:52 High: 14:12	40	Y	5	S	8
06/3/2014	12:45	13:30	0.75	Clear with some cloud	Rising	Low: 08:04 High: 14:21	30	N	3	S	4-6
19/03/2014	08:00	08:45	0.75	Overcast, dry	Rising	Low: 06:17 High: 12:34	20	N	1-2	SW	8
		TOTAL	10.5								

Vantage Point 3

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
17/10/2013	07:00	07:45	0.75	Dry	Rising	Low: 03:54 High: 09:58	20	N	3	W/SW	1
31/10/2013	08:40	09:25	0.75	Overcast, breezy, 14°C, dry	Falling	High: 07:59 Low: 14:12	30	Partly	4	SW	8
12/11/2013	14:35	15:20	0.75	Overcast, breezy	Rising	Low: 12:11 High: 19:06	30	N	4	NW	7
26/11/2013	14:20	15:05	0.75	Dry, sunny, 6°C	Rising	Low 10:24 High: 17:37	20	N	2	W	4
05/12/2013	07:30	08:15	0.75	Windy, 5°C, dry	Rising	Low: 06:00 High: 12:16	60	Y	6	W	7
16/12/2013	15:00	15:45	0.75	Dry, overcast, 6°C	Low	High: 10:10 Low: 16:02	50	N	4	SW	6
17/12/2013	07:15	08:00	0.75	Dry, overcast, 5°C	Rising	Low: 04:31 High: 10:55	40	N	2	SW	4

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
09/01/2014	13:45	14:30	0.75	Dry, cold	Rising	Low: 11:03 High:18:00	60	Y	4-3	SW	7-1
22/01/2014	15:30	16:30	0.75	Dry, 8°C	Falling	High: 14:41 Low: 20:18	60	Y	3	SW	8-7
23/01/2014	06:45	07:45	0.75	Dry, overcast, 5°C	Falling	High: 02:51 Low: 09:01	25-30	N	3	SW	8-7
04/02/14	13:40	14:25	0.75	Shower, windy	High	Low:08:04 High:14:20	80	Y	7	SE	5-7
20/02/2014	13:20	14:05	0.75	9.9°C to 10.1°C, drizzle	High	High: 14:12	50	Y	6-5	S	8
06/03/2014	12:40	13:25	0.75	Sunny, 12°C	Rising	Low: 08:04 High: 14:21	40	N	3	S	4
19/03/2014	07:00	07:45	0.75	Overcast, dry	Rising	Low: 06:17 High: 12:34	20	N	4-3	W-SW	8
		TOTAL	10.5								

Vantage Point 4

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
17/10/2013	07:00	07:45	0.75	Dry	Rising	Low: 03:54 High: 09:58	40	N	2	SW	1
31/10/2013	15:15	16:00	0.75	Dry	Rising	Low:14:12 High: 20:58	10	N	2	SW	4
12/11/2013	15:45	16:30	0.75	Overcast, light starting to fade	Rising	Low: 12:11 High: 19:06	20	N	2	NW	4
13/11/2013	06:50	07:40	0.75	Clear, calm, bright	Low	High: 06:30 Low: 13:12	10	N	1	-	0
26/11/2013	07:00	07:45	0.75	Dry, 3.5°C	Falling	High: 04:01 Low: 10:41	100	N	2	SW	8
05/12/2013	08:45	09:30	0.75	Windy, overcast, 6°C	Rising	Low: 06:00 High: 12:16	50	Y	6	W	8
17/12/2013	15:30	16:15	0.75	Overcast, dry, 5°C	Low	High: 10:55 Low: 16:40	10	N	1	SW	7

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
09/01/2014	12:45	13:30	0.75	Windy, cold, overcast	Rising	Low: 11:03 High:18:00	70	Y	5	SW	8
23/01/2014	13:00	13:45	0.75	Dry, clear, 8°C	Rising	Low: 09:01 High: 15:25	20	N	2	SW	2
04/02/14	14:40	15:25	0.75	Dry, cold windy	Falling	Low:08:04 High:14:20	100	Y	7	SE	5
20/02/2014	14:30	15:15	0.75	10.4° to 10.2°C, drizzle to dry	High	High: 14:12	50	Y	4-3	S	8
06/03/2014	13:45	14:30	0.75	Clear with cloud	High	High: 14:21	20	N	2-1	S	2
18/03/2014	17:45	18:30	0.75	Overcast, dry	Low	Low: 17:47	30	N	2-3	NW	8
19/03/2014	05:50	06:35	0.75	Overcast, dry	Low	Low: 06:17	20	N	2-1	W	8
		TOTAL	10.5								

Vantage Point 5

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
17/10/2013	17:00	17:45	0.75	Dry	Falling	Low: 16:26 High: 22:58	20	N	2	SW	2
31/10/2013	14:00	14:45	0.75	Drizzle at start of survey, dry after 10 minutes	Low	Low:14:12	50	N	3	SW	6
12/11/2013	15:40	16:25	0.75	Dry	Rising	Low: 12:11 High: 19:06	30	N	0	-	5-4
13/11/2013	06:45	07:30	0.75	Dry, slight frost	Low	High: 06:30 Low: 13:12	30	N	0	-	0
26/11/2013	07:00	07:45	0.75	Dry, 3.5°C, overcast	Falling	High: 04:01 Low: 10:41	45	N	2	W	8
05/12/2013	09:55	10:40	0.75	Overcast, windy, 6°C	Rising	Low: 06:00 High: 12:16	50	Y	6	W	8
17/12/2013	15:30	16:15	0.75	Overcast, dry, 5°C	Low	High: 10:55 Low: 16:40	30	N	2	W	8

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
09/01/2014	11:30	12:15	0.75	Overcast, cold, dry	Low	Low: 11:03 High:18:00	60	Y	5	SW	8
23/01/2014	15:45	16:30	0.75	Dry, sunny, 8°C	High	High: 15:25 Low: 21:04	30	N	3	SW	5-1
04/02/2014	10:00	16:45	0.75	Dry, 7°C	Falling	Low:08:04 High:14:20	80	Y	6	SE	1
20/02/2014	07:15	08:00	0.75	9°C, misty	Low	Low: 07:15	75	Y	5	SE	8
06/03/2014	13:45	14:30	0.75	Sunny	High	High: 14:21	50	N	3	S	4
18/03/2014	17:40	18:25	0.75	Overcast, dry	Low	Low: 17:47	30	N	3	W	8
19/03/2014	05:45	06:30	0.75	Dry, overcast	Low	Low: 06:17	50	N	3	SW	8
		TOTAL	10.5								

Vantage Point 6

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
17/10/2013	15:45	16:30	0.75	Dry	Low tide	Low:16:26	40	N	2	SW	2
31/10/2013	12:30	13:15	0.75	Drizzle	Falling	High 07:59 Low 14:12	50	N	3	SW	6
31/10/2013	16:30	17:00	0.5	Dry	Rising	Low:14:12 High: 20:58	40	N	2-3	SW	8
01/11/2013	06:30	07:30	0.75	Drizzle	Rising	Low 02:26 High: 08:45	40	N	2-3	NW	8
12/11/2013	07:25	08:10	0.75	Dry	Falling	High: 05:26 Low: 12:11	40	N	1	S	8
26/11/2013	15:20	16:05	0.75	Dry, 6°C, sunny	Rising	Low: 10:24 High: 17:37	40	N	2	W	4
27/11/2013	07:00	07:45	0.75	Misty, 5°C	Falling	High: 05:00 Low: 11:38	30	N	2	W	8
05/12/2013	11:00	11:45	0.75	Windy, 6°C, dry	High	Low: 06:00 High: 12:16	60	Y	6	W	7

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
17/12/2013	14:30	15:15	0.75	Overcast, dry, 5°C	Low	High: 10:55 Low: 16:40	30	N	2	W	8
09/01/2014	10:20	11:05	0.75	Overcast, windy, dry	Low	Low: 11:03	80	Y	5	SW	8
23/01/2014	15:45	16:30	0.75	Dry, sunny, 8°C	High	High: 15:25 Low: 21:04	10	N	3	SW	2
03/02/2014	15:50	16:35	0.75	Windy, 7 °C	Falling	High: 13:24 Low: 19:12	80	Y	6	SE	1
04/02/2014	07:20	08:05	0.75	Dry, 6°C	Low	Low: 08:04	50	Y	1	SE	1
20/02/2014	07:15	08:00	0.75	9.5°C to 8.8°C, dry	Low	Low: 07:15	40	Y	5	S	8
05/03/2014	17:15	18:00	0.75	Sunny, little, hazy cloud, light wind	Falling	High: 13:40 Low: 19:29	15	N	2	S	6-5
06/03/2014	06:15	07:00	0.75	Hazy, cloudy	Rising	High: 01:51 Low: 08:04	15	N	2	S	5

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
19/03/2014	06:45	07:30	0.75	Dry, overcast	Rising	Low: 06:17 High: 12:34	50	N	3	SW	8
		TOTAL	12.50								

Vantage Point 7

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
17/10/2013	14:15	15:00	0.75	Dry	Falling	High: 09:58 low: 16:26	30	N	3	SW	6
31/10/2013	11:15	12:00	0.75	Heavy showers	Falling	High: 07:59 Low: 14:12	40	N	3	SW	8
31/10/2013	16:20	16:50	0.5	Dry, overcast, light fading, 10°C	Rising	Low:14:12 High: 20:58	30	N	3	SW	8
01/11/2013	06:35	07:30	0.75	Dry, overcast, breezy, 12°C	Rising	Low 02:26 High: 08:45	30	N	4-3	SW	8-7
12/11/2013	07:25	08:10	0.75	Overcast, dry, 8°C	Falling	High: 05:26 Low: 12:11	30	N	3	W	8
26/11/2013	08:00	08:45	0.75	Dry, clear	Falling	High: 04:01 Low: 10:41	40	N	2	E	0
05/12/2013	11:50	12:35	0.75	Windy, 6°C, overcast	High	High: 12:16	60	Y	7	W	8

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
17/12/2013	14:30	15:15	0.75	Overcast, dry, 5°C	Falling	High: 10:55 Low: 16:40	10	N	1	SW	7
09/01/2014	09:25	10:10	0.75	Overcast, dry	Low	High: 04:26 Low: 11:03	100	Y	5	SW	8
23/01/2014	14:45	15:30	0.75	Dry, 8°C	High	High: 15:25	40	N	4	SW	4
03/02/2014	15:50	16:35	0.75	Dry	Falling	High: 13:24 Low: 19:12	50	Y	5	SE	0-3
04/02/2014	7:20	8:05	0.75	Dry windy	Low	Low:08:04 High:14:20	30-40	N	3	SE	0
20/02/2014	15:50	16:35	0.75	10.3°C, dry	Falling	High: 14:12 Low: 19:54	40	Y	4-3	S	7-4
06/03/2014	06:15	07:00	0.75	Clear some cloud	Rising	High: 01:51 Low: 08:04	10	N	2	S	3
05/03/2014	17:10	17:55	0.75	Some cloud	Falling	High: 13:40 Low: 19:29	10	N	3	S	5-3

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
19/03/2014	14:25	15:10	0.75	Overcast, dry	Falling	High: 12:34 Low: 18:22	20	N	2	SW	8
		TOTAL	11.75								

Vantage Point 8

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
17/10/2013	12:45	13:30	0.75	Dry	Mid tide	High: 09:58 low: 16:26	40	N	3	SW	2
31/10/2013	10:00	10:45	0.75	Drizzle	Falling	High: 07:59 Low: 14:12	50	N	3	SW	7
12/11/2013	14:35	15:20	0.75	Dry	Rising	Low: 12:11 High: 19:06	30	N	2-1	NW	5-3
26/11/2013	15:15	16:00	0.75	Dry	Rising	Low: 10:41 High: 17:37	40	N	2	E	2
27/11/2013	07:00	07:45	0.75	Dry, overcast, slight mist	Falling	High: 05:00 Low: 11:38	10	N	1	E	2
05/12/2013	12:50	13:35	0.75	Overcast, windy	High	High: 12:16	60	Y	7	W	8
17/12/2013	13:15	14:00	0.75	Overcast, dry, 5°C	Falling	High: 10:55 Low: 16:40	30	N	2	W	8

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
08/01/2014	15:00	16:00	0.75	Dry, cold	Rising	Low: 10:01 High: 16:48	30	N	2	SW	6
09/01/2014	07:15	08:00	0.75	Dry, overcast	Falling	High: 04:26 Low: 11:03	100	Y	4-5	SW	8
23/01/2014	14:45	15:30	0.75	Dry, 8°C	High	High: 15:25	30	N	3	SW	3
04/02/2014	14:30	15:15	0.75	Dry, 7°C	High	Low:08:04 High:14:20	80	Y	6	SE	5
20/02/2014	14:40	15:35	0.75	9°C, drizzle to dry	High	High: 14:12	100-75	Y	5	SE	8
06/03/2014	13:45	14:30	0.75	Sunny, windy	High	High: 14:21	30	N	4-5	S-SE	5
19/03/2014	14:15	15:00	0.75	Dry, overcast	Falling	High: 12:34 Low: 18:22	40	N	3	SW	8
		TOTAL	10.5								

Vantage Point 9

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
17/10/2013	11:15	12:00	0.75	Dry	Falling	High: 09:58 low: 16:26	20	N	3	SW	1
31/10/2013	08:30	09:15	0.75	Drizzle	Falling	High: 07:59 Low: 14:12	20-40	N	4	SW	8
12/11/2013	13:25	14:05	0.75	Dry	Rising	Low: 12:11 High: 19:06	30	N	3-7	NW	6-7
26/11/2013	14:00	14:45	0.75	Dry	Rising	Low: 10:41 High: 17:37	30	N	2-3	E	1
05/12/2013	13:50	14:35	0.75	Windy, 5°C	Falling	High: 12:16 Low: 18:14	75	Y	8	SW	8
17/12/2013	13:30	14:15	0.75	Overcast, dry, 5°C	Falling	High: 10:55 Low: 16:40	20	N	1	SW	8
08/01/2014	15:15	16:00	0.75	Dry, overcast	Rising	Low: 10:01 High: 16:48	30	N	3	SW	6

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
09/01/2014	07:15	08:00	0.75	Windy, dry, overcast	Falling	High: 04:26 Low: 11:03	100	Y	5	SW	8
23/01/2014	13:25	14:10	0.75	Dry, 8°C	Rising	Low: 09:01 High: 15:25	30	N	3	SW	7
04/02/2014	13:20	14:05	0.75	Dry, 7°C	High	Low:08:04 High:14:20	80	Y	6	SE	6
20/02/2014	13:30	14:15	0.75	9°C, drizzle	High	High: 14:12	120	Y	6	SE	8
06/03/2014	12:30	13:15	0.75	Overcast, sunny spells	Rising	Low: 08:04 High: 14:21	40-50	N-Y	5	S	5
19/03/2014	13:00	13:45	0.75	dry, overcast	Falling	High: 12:34 Low: 18:22	60	Y	5	SW	8
		TOTAL	9.75								

Vantage Point 10

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
12/11/2013	12:05	12:50	0.75	Dry	Low	Low: 12:11	30	N	2	SE	4-6
26/11/2013	12:45	13:30	0.75	Dry	Rising	Low: 10:41 High: 17:37	20	N	2	E	6
17/12/2013	12:15	13:00	0.75	Overcast, 5°C, dry	Falling	High: 10:55 Low: 16:40	10	N	0-1	SW	6
23/01/2014	12:00	12:45	0.75	Heavy rain, 8°	Rising	Low: 09:01 High: 15:25	30	N	5	SW	8
04/02/2014	12:00	12:45	0.75	Dry, 7°	Rising	Low:08:04 High:14:20	70	Y	5	SE	4
20/02/2014	12:15	13:00	0.75	9°C, misty	Rising	Low: 07:52 High: 14:12	65	Y	6	SE	8
06/03/2014	11:15	12:00	0.75	Overcast	Rising	Low: 08:04 High: 14:21	15	N	3	S	7-6
19/03/2014	11:40	12:25	0.75	Dry, overcast	High	High: 12:34	75	Y	5	SW	8

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
		TOTAL	6								

Vantage Point 11

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
12/11/2013	10:50	11:35	0.75	Dry	Falling	High: 05:26 Low: 12:11	40	N	1-2	SE	8-4
26/11/2013	11:15	12:00	0.75	Dry	Low	Low: 10:41 High: 17:37	40	N	2-3	E	4
17/12/2013	11:00	11:45	0.75	Overcast, 5°C, dry	High	High: 10:55 Low: 16:40	10	N	1	SW	6
23/01/2014	10:50	11:35	0.75	Overcast, dry, 8°C	Rising	Low: 09:01 High: 15:25	40	N	4	SW	8
04/02/2014	10:35	11:20	0.75	Dry, 7°C	Rising	Low:08:04 High:14:20	70	Y	5	SE	0
20/02/2014	11:00	11:45	0.75	9°C, dry	Rising	Low: 07:52 High: 14:12	80	Y	7	SE	8
06/03/2014	10:05	10:50	0.75	Overcast, dry	Rising	Low: 08:04 High: 14:21	20	N	4	S	8

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
19/03/2014	10:25	11:10	0.75	Overcast, dry	Rising	Low: 06:16 High: 12:34	75	Y	5	SW	8
		TOTAL	6								

Vantage Point 12

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
12/11/2013	09:20	10:15	0.75	Drizzle at start, dry by end	Falling	High: 05:26 Low: 12:11	40	N	1	S	8
26/11/2013	09:30	10:15	0.75	Dry	Low	High: 04:01 Low: 10:24	20	N	2	SW	6
17/12/2013	09:30	10:15	0.75	Overcast, 5°C, dry	High	Low: 04:31 High: 10:55	10	N	1	SW	4
23/01/2014	09:20	10:05	0.75	Dry, sunny, 9°C	Low	Low: 09:01 High: 15:25	40	N	3	SW	5
4/02/2014	09:20	10:05	0.75	Dry, 7°C	Rising	Low:08:04 High:14:20	60	Y	5	SE	0
20/02/2014	09:15	10:00	0.75	8°C, overcast, misty	Rising	Low: 07:52 High: 14:12	80	Y	7	SE	8
06/03/2014	08:50	09:35	0.75	Overcast, windy	Rising	Low: 08:04 High: 14:21	15	N	3	SE	8

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
19/03/2014	09:00	09:45	0.75	Overcast, dry	Rising	Low: 06:16 High: 12:34	60	Partially	3	S	8
		TOTAL	6								

Vantage Point 13

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
17/10/2013	13:45	14:30	0.75	Dry	Falling	High: 09:58 low: 16:26	20	N	2	SW	6-5
31/10/2013	12:40	13:25	0.75	Dry, overcast, breezy	Falling	High: 07:59 Low: 14:12	40	Partly	3-4	S	8
12/11/2013	11:10	11:55	0.75	Overcast, bright, 10°C	Low	High: 05:26 Low: 12:11	30	N	3	NW	6-3
26/11/2013	10:30	11:15	0.75	Dry, 6°C, broken cloud	Low	Low: 10:24 High: 17:37	30	N	2	W	6
05/12/2013	11:15	12:00	0.75	Dry	High	Low: 06:00 High: 12:16	200	Y	7-8	W	2
17/12/2013	09:55	10:40	0.75	Overcast, 5°C, dry	High	Low: 04:31 High: 10:55	30	N	2	w	8
09/01/2014	12:15	13:00	0.75	Dry	Rising	Low: 11:03 High: 18:00	50	N	3-4	SW	4
23/01/2014	12:00	12:45	0.75	Heavy rain, 8°C	Rising	Low: 09:01	20	N	3-5	SW	8

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
						High: 15:25					
04/02/2014	10:40	11:25	0.75	Dry	Rising	Low:08:04 High:14:20	80	Y	6	SE	3
20/02/2014	09:30	10:15	0.75	10.1°C, dry	Rising	Low: 07:52 High: 14:12	50	Y	6	S	8
06/03/2014	10:30	11:15	0.75	Overcast	Rising	Low: 08:04 High: 14:21	30	N	2-3	S	8
19/03/2014	11:00	11:45	0.75	Overcast, dry	Rising	Low: 06:16 High: 12:34	40	N	3-4	W	8
		TOTAL	9								

Vantage Point 14

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
17/10/2013	12:45	13:30	0.75	Dry	Mid tide	High: 09:58 low: 16:26	20	N	2	SW	4
31/10/2013	13:35	14:20	0.75	Dry, overcast, light breeze	Low tide	Low: 14:12	40	partly	3	S	8
12/11/2013	10:15	11:00	0.75	Overcast, light breeze, dry	Falling	High: 05:26 Low: 12:11	30	N	3	N	8
26/11/2013	09:30	10:15	0.75	Dry, 5°C, broken cloud	Low	High: 04:01 Low: 10:24	30	N	2	W	7
05/12/2013	10:15	11:00	0.75	Dry	Rising	Low: 06:00 High: 12:16	100	Y	6-7	W-SW	6
06/12/2013	08:15	09:00	0.75	Dry	Rising	Low: 06:00 High: 12:16	40	N	3-4	SW	1
17/12/2013	11:00	11:45	0.75	Overcast, 5°C, dry	High	High: 10:55 Low: 16:40	30	N	2	W	8

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
09/01/2014	11:15	12:00	0.75	Drizzle, cloudy	Rising	Low: 11:03 High: 18:00	40	N	4	SW	6
23/01/2014	11:00	11:45	0.75	Dry, 8°	Rising	Low: 09:01 High: 15:25	20	N	2	SW	6
04/02/2014	09:45	10:30	0.75	Dry , windy	Rising	Low:08:04 High:14:20	80	Y	5	SE	3
20/02/2014	17:00	17:45	0.75	10°C to 8.5°C, dry	Falling	High: 14:12 Low: 19:54	30	Y	3	S	1
21/02/2014	06:30	07:15	0.75	3°C to 4°C, calm, dry	Falling	High: 02:25 Low: 08:30	25	N	1	SE	0
06/03/2014	09:25	10:10	0.75	Overcast	Rising	Low: 08:04 High: 14:21	10	N	3	S	7
19/03/2014	11:50	12:35	0.75	Overcast, dry	High	High: 12:34	40	N	4-5	W	8
		TOTAL	10.5								

Vantage Point 15

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
17/10/2013	11:40	12:25	0.75	Dry	Falling	High: 09:58 Low: 16:26	20	N	3-4	SW	3
18/10/2013	06:45	07:30	0.75	Dry	Rising	Low: 04:42 High: 10:47	10	N	1	SW	4
31/10/2013	14:55	15:40	0.75	Dry, overcast, light breeze	Rising	Low:14:12 High: 20:58	30	N	2-3	S	8
12/11/2013	09:10	09:55	0.75	Overcast, heavy rain at start, dry by end	falling	High: 05:26 Low: 12:11	30	N	2	W	8
26/11/2013	08:25	09:10	0.75	Dry, patchy cloud, 4.5°C	Falling	High: 04:01 Low: 10:24	30	N	3	W	7
05/12/2013	09:00	09:45	0.75	Dry	Rising	Low: 06:00 High: 12:16	40	Y	4-5	W	2
06/12/2013	08:15	09:00	0.75	2°C, dry, sunny	Rising	Low: 06:50 High: 13:08	125	Y	3	W	0

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
17/12/2013	12:00	12:45	0.75	Overcast, 5°C, dry	Falling	High: 10:55 Low: 16:40	20	N	2	W	8
09/01/2014	10:00	10:45	0.75	Dry	Low	High: 04:26 Low: 11:03	40	N	4	SW	4
23/01/2014	10:00	10:45	0.75	Dry, sunny, 9°C	Rising	Low: 09:01 High: 15:25	20	N	2	SW	2
04/02/2014	08:30	09:15	0.75	Dry, windy	Rising	Low:08:04 High:14:20	50	Y	2	SE	2
20/02/2014	17:00	17:45	0.75	8°C, calm, dry	Falling	High: 14:12 Low: 19:54	50	N	1	SE	1
21/02/2014	06:30	07:15	0.75	3.4°C to 4.1°C, calm, dry	Falling	High: 02:25 Low: 08:30	50	N	2	S	1
06/03/2014	08:25	09:10	0.75	Overcast	Low	Low: 08:04 High: 14:21	10	N	2	S	7

Date	Start	Finish	Duration of Survey (Hours)	Weather	High tide/low tide	Tide times	Wave height (cm)	Vis obscured by waves?	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (octas)
19/03/2014	13:00	13:45	0.75	Overcast, dry	Falling	High: 12:34 Low: 18:22	20	N	2	W	8
		TOTAL	11.25								

Appendix B

2013/14 VP Survey Results

The following table shows all of the red-throated diver observations made during the period October 2013 to the end of March 2014. If no red-throated divers were recorded from a VP on a particular date then this will have been omitted from the table.

Table 1: Red-throated diver - Wintering VP surveys results (October 2012 to March 2013)

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R, Swimming: S)
1	05/12/2013	13:30			1000	200	1	C to N
1	05/12/2013	13:45			700	200	1	F
1	17/12/2013	08:25			1200	400	74	C to f
1	17/12/2013	08:30			800	500	11	F
1	09/01/2014	13:30			500	100	2	F
1	23/01/2014	08:15			2500-3000	1000	22	C to S
1	23/01/2014	08:30			500	100	1	F
1	23/01/2014	08:40			500-1000	200	4	F
1	23/01/2014	08:45			1500-2000	500	15	C to S
1	23/01/2014	08:45			1500-2000	1000	200	C to S
1	23/01/2014	09:00			1000-1500	500	15	C to S
1	23/01/2014	09:00			1000-1500	500	2	C to S
1	04/02/2014	11:57			900	150	1	F
1	20/02/2014	11:08			1200	200	1	C
1	20/02/2014	11:37			1000	200	1	F
1	06/03/2014	10:35			300-1500		62	F
1	19/03/2014	09:50			300-2000		101	F / C
2	26/11/2013	13:40			500	100	1	C
2	05/12/2013	07:35	✓		1000	300	1	C to N
2	05/12/2013	08:00	✓		700	200	2	R / C to S
2	05/12/2013	08:10	✓		2000	300	1	C to N
2	16/12/2013	15:18		✓	850	200	1	C o N
2	16/12/2013	15:30		✓	600	100	1	C to S
2	22/01/2014	15:50		✓	500		1	F

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R, Swimming: S)
2	22/01/2014	15:50		✓	1000		1	C to S
2	23/01/2014	07:40	✓		2000-3000	500	6	C to S
2	23/01/2014	07:56	✓		2000	1000	2	C to N
2	06/03/2014	12:50			300-1500		24	F
2	06/03/2014	12:50			300-1500		28	C to N
2	19/03/2014	08:15			800-1200		10	C to N
2	19/03/2014	08:15			800-1200		4	C to S
3	05/12/2013	07:40	✓		800	250	13	C to S
3	05/12/2013	07:45	✓		600	200	1	R
3	17/12/2013	07:50	✓		1000	300	2	C to N
3	17/12/2013	08:00	✓		2000	400	1	C to S
3	22/01/2014	15:30		✓	1500	300	1	C to N
3	22/01/2014	15:32		✓	1500	300	1	C to N
3	22/01/2014	15:41		✓	1500	300	5	C to N
3	22/01/2014	15:45		✓	700	200	1	C to S
3	23/01/2014	07:23	✓		1600	300	1	C to N
3	23/01/2014	07:32	✓		1400	200	1	C to S
3	23/01/2014	07:34	✓		1800	400	2	C to S
3	23/01/2014	07:40	✓		2250	400	14	C to S
3	06/03/2014	12:44			900-1500		38	C to N
3	19/03/2014	07:15			600-1000		3	C to N
3	19/03/2014	07:15			600-1000		11	C to S
4	26/11/2013	07:30	✓		1000	200	4	C to S
4	05/12/2013	08:46			500	300	1	C / R
4	05/12/2013	08:50			700	200	2	C
4	05/12/2013	08:58			800	200	1	C
4	05/12/2013	09:05			1000	300	2	C
4	05/12/2013	09:13			600	200	1	C

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R, Swimming: S)
4	05/12/2013	09:21			1200	400	1	C
4	05/12/2013	09:22			500	100	1	C
4	17/12/2013	15:40		✓	500	100	2	F
4	23/01/2014	13:20			500-700	200	8	F
4	23/01/2014	13:25			1000	200	2	F
4	23/01/2014	13:30			1000	300	4	C to N
4	04/02/2014	15:17			1400	200	1	C
4	04/02/2014	15:19			1700	200	2	C
4	06/03/2014	13:45			300-1200		23	F
4	06/03/2014	13:45			300-1200		2	C to N
4	19/03/2014	05:50	✓		400-2000		49	C to S
5	13/11/2013	07:12	✓		70	20	1	C
5	26/11/2013	07:16	✓		1200	300	2	C / F
5	26/11/2013	07:23	✓		800	200	1	C
5	26/11/2013	07:26	✓		1000	250	2	C
5	26/11/2013	07:34	✓		750	150	2	C
5	05/12/2013	10:14			500	100	1	C
5	17/12/2013	15:45		✓	800	150	1	F
5	23/01/2014	15:45			1000	200	55	C o N
5	06/03/2014	13:50			600-1200		29	F / C
6	17/12/2013	14:30			700	350	8	F
6	17/12/2013	15:15			1200	400	8	C to S
6	09/01/2014	10:36			900	150	4	C
6	23/01/2014	16:00			500	100	4	F
6	23/01/2014	16:10			1000	200	4	F
6	23/01/2014	16:00			2000	200	50	C to N
6	23/01/2014	16:00			1000	200	10	C to N
6	04/02/2014	07:35	✓		2500	500	12	C to S

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R, Swimming: S)
6	05/03/2014	17:39		✓	2500	700	1	C
6	06/03/2014	06:43	✓		2000	400	1	C
6	06/03/2014	06:59			1000	300	2	C
7	17/12/2013	14:35			850	200	7	R / F
7	17/12/2013	14:40			1000	300	2	C to S
7	09/01/2014	?			1000	200	24	C
7	23/01/2014	14:50			300	100	1	F
7	23/01/2014	15:00			1000	200	2	F
7	23/01/2014	15:15			2000	200	4	C to N
7	23/01/2014	15:20			2000	300	3	C to N
7	23/01/2014	15:45			700	200	1	C to S
7	04/02/2014	07:32	✓		1500	500	1	C
7	04/02/2014	07:35	✓		1500	400	1	C
7	04/02/2014	07:41	✓		200	100	1	C / F
7	04/02/2014	07:56	✓		700	150	1	C / F
7	20/02/2014	15:57			700	200	2	C
7	06/03/2014	06:15	✓		600-2000		220	C to SE
7	06/03/2014	06:30	✓		600	50	1	F
7	19/03/2014	14:35			500-1200		2	F
7	19/03/2014	14:35			500-1200		3	C
8	17/10/2013	13:30			700	200	1	F
8	12/11/2013	15:15			700	200	1	C
8	17/12/2013	13:15			1400	600	43	C to S
8	17/12/2013	13:15			150-1500	300	18	F
8	09/01/2014	07:30			500	100	1	C / R
8	23/01/2014	14:50			1100-2000		11	C to N
8	23/01/2014	14:50			5000-1500		4	F
8	23/01/2014	14:55			600	200	2	C to S

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R, Swimming: S)
8	04/02/2014	14:36			400	200	1	F
8	04/02/2014	14:36			1800	400	7	C to N
8	20/02/2014	14:49			350	250	2	F
8	06/03/2014	13:45			500	150	57	F / R
8	06/03/2014	14:00			700	200	3	C
8	06/03/2014	14:24			1200	200	1	C
8	19/03/2014	14:15			250-1250		9	F / C
9	31/10/2013	09:00			500	200	1	C to S
9	26/11/2013	14:20			100	50	1	C to S
9	26/11/2013	14:45			2000	300	1	C to N
9	05/12/2013	14:27			600	200	2	C
9	17/12/2013	13:35			700-1500	300	21	R / F
9	17/12/2013	14:00			1500-200	300	24	C to S
9	17/12/2013	14:15			1000	300	1	C to N
9	08/01/2014	15:15		✓	300	100	1	C to S
9	08/01/2014	15:20		✓	1100	200	1	C to N
9	23/01/2014	13:25			250-2000		14	F / C
9	20/02/2014	13:42			100	100	4	F
9	20/02/2014	13:58			400	150	1	C to N
9	06/03/2014	12:34			300	50	1	F
9	06/03/2014	12:47			600	70	17	F
9	06/03/2014	12:49			1000	200	1	C
9	06/03/2014	13:05			700	30	1	C
9	19/03/2014	13:00			250-2000		23	F / C
10	26/11/2013	13:15			2000	300	4	C to N
10	17/12/2013	12:30			1500-2000	300	82	R / F
10	17/12/2013	12:35			300-1000	200	12	R / F
10	17/12/2013	12:30			700-1000	300	100	C to N

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R, Swimming: S)
10	17/12/2013	?			1000-2000	400	10	C to N
10	04/02/2014	12:37			600	200	1	C to N
10	20/02/2014	12:40			700	300	3	F
10	06/03/2014	11:20			400	50	3	F
10	06/03/2014	11:25			500	60	5	C
10	06/03/2014	11:27			700	70	2	C
10	06/03/2014	11:38			500	60	3	R / F
10	06/03/2014	11:40			600	50	5	R / F
10	06/03/2014	11:50			500	30	6	R / F
10	06/03/2014	12:00			700	70	1	C
10	19/03/2014	11:45			400-1500		16	F
11	12/11/2013	11:07			1750	250	2	C
11	26/11/2013	11:20			2000	300	4	C to N
11	26/11/2013	11:27			1000	300	3	C to S
11	26/11/2013	11:30			500	200	3	F / C
11	26/11/2013	11:45			1000	300	3	C to N
11	26/11/2013	11:45			300	100	2	F
11	26/11/2013	12:00			1000	300	2	C to N
11	17/12/2013	11:30			500-1000	200	40	F / R
11	17/12/2013	11:30			2000	300	20	F / R
11	17/12/2013	11:30			300	100	9	F / R
11	17/12/2013	11:00			500-1000	200	200	C to N
11	17/12/2013	11:00			1000-2000	400	69	C to N
11	23/01/2014	10:50			1600-2000		200	C to S
11	23/01/2014	10:50			900-2000		40	F / C
11	04/02/2014	10:49			1200	300	1	C to S
11	04/02/2014	11:01			400	200	2	C to S
11	20/02/2014	11:33			550	100	1	C to S

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R, Swimming: S)
11	06/03/2014	10:12			600	70	1	C
11	06/03/2014	10:16			600	70	3	C
11	06/03/2014	10:17			500	20	2	F
11	06/03/2014	10:20			800	100	2	C
11	06/03/2014	10:21			700	50	4	F
11	06/03/2014	10:23			1000	100	6	C
11	06/03/2014	10:26			800	70	3	C
11	06/03/2014	10:30			1000	200	4	C / F
11	06/03/2014	10:31			800	75	2	C
11	06/03/2014	10:39			700	50	1	C
11	06/03/2014	10:40			500	50	1	
11	06/03/2014	10:45			1200	200	5	C
11	06/03/2014	10:45			1000	100	2	F
11	06/03/2014	10:50			1800	80	3	C
11	19/03/2014	10:25			200-1500		31	F / C
12	26/11/2013	09:35			1000	200	2	C to S
12	26/11/2013	09:45			300	50	1	C to S
12	26/11/2013	10:00			700	200	4	C to S
12	26/11/2013	10:10			500	100	9	C to S
12	26/11/2013	10:15			1000	100	4	C to S
12	26/11/2013	11:11			2000	300	2	C to S
12	17/12/2013	09:30			1000	200	120	C to N
12	17/12/2013	09:30			2000	400	20	C to N
12	17/12/2013	09:45			2000	300	20	F
12	17/12/2013	09:45			1000	200	40	F
12	17/12/2013	09:45			700	100	10	F
12	23/01/2014	09:20			2500	1000	80	C to S
12	23/01/2014	09:20			150-2000		26	F / C

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R, Swimming: S)
12	06/03/2014	08:52			1000	200	1	C
12	06/03/2014	09:02			700	100	1	C
12	06/03/2014	09:12			800	100	1	C
12	06/03/2014	09:15			300	75	4	F
12	06/03/2014	09:17			1000	200	4	C
12	06/03/2014	09:18			900	150	2	C
12	06/03/2014	09:20			800	100	4	C
12	06/03/2014	09:27			500	50	1	F
12	06/03/2014	09:32			700	70	2	F
12	19/03/2014	09:00			350-2000		54	F / C
13	17/10/2013	14:00			2000	500	1	C to N
13	26/11/2013	10:49			600	200	1	F
13	26/11/2013	11:00			800	200	2	C
13	26/11/2013	11:08			800	200	1	C
13	05/12/2013	11:30			700	200	10	F / R
13	05/12/2013	11:50			1000	300	1	C to N
13	17/12/2013	09:55			50-1500		60	F
13	17/12/2013	10:15			1000	250	25	C to S
13	09/01/2014	12:30			500	100	1	F
13	09/01/2014	12:40			1000	400	2	C / swimming
13	23/01/2014	12:20			500-700	100	5	F
13	23/01/2014	12:30			1000	200	2	C to N
13	04/02/2014	10:46			600	100	1	C
13	04/02/2014	11:09			1500	200	2	F
13	20/02/2014	09:31			1000	200	1	R / F
13	20/02/2014	09:48			1500	200	1	F
13	20/02/2014	10:05			800	200	1	F
13	06/03/2014	10:35			250-1500		46	F

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R, Swimming: S)
13	06/03/2014	10:35			250-1500		22	C
13	19/03/2014	11:10			350-1200		21	F
13	19/03/2014	11:10			350-1200		13	C
14	26/11/2013	09:36			600	200	3	C
14	26/11/2013	09:42			900	300	1	C
14	26/11/2013	09:43			800	200	5	C
14	26/11/2013	09:57			500	100	1	C / R
14	26/11/2013	10:11			1000	250	6	F
14	05/12/2013	10:20			1000	300	1	C to S
14	05/12/2013	10:50			100	50	1	C to S
14	06/12/2013	08:30			1500	400	9	C to N
14	06/12/2013	08:40			200	100	1	F / R
14	17/12/2013	11:00			80-1500		80	F / C
14	17/12/2013	11:19			900	200	16	C to N
14	09/01/2014	11:30			500	300	3	F
14	09/01/2014	12:00			200	100	1	C / swim
14	23/01/2014	11:15			500-1000	500	17	F
14	23/01/2014	11:15			1000-2000	700	26	C to S
14	23/01/2014	11:40			700	200	2	C to N
14	04/02/2014	09:57			800	100	1	C
14	04/02/2014	10:10			750	150	1	C
14	04/02/2014	10:20			700	100	4	F
14	21/02/2014	06:51	✓		600	200	1	C to S
14	21/02/2014	06:55	✓		1800	400	2	C to S
14	21/02/2014	07:02	✓		2500	500	4	C to S
14	21/02/2014	07:12	✓		400	100	4	C to S
14	21/02/2014	07:14	✓		2000	500	1	C to S
14	06/03/2014	09:30			300-2000		67	F

VP	Date	Time	Dawn survey	Dusk survey	Estimated distance from shore (m)	Estimated distance +/- error (m)	Number of RTD	Activity description (Foraging: F, Commuting: C, Resting: R, Swimming: S)
14	06/03/2014	09:30			300-2000		30	C
14	19/03/2014	11:50			400-1500		8	F
14	19/03/2014	11:50			400-1500		48	C
15	17/10/2013	12:12			700	150	1	C to S
15	12/11/2013	09:52			2500	500	6	C to SE
15	26/11/2013	08:30			250-2000	250	35	
15	05/12/2013	09:30			1000	200	2	C to N
15	05/12/2013	09:40			500	100	1	C to S
15	06/12/2013	08:30			900	200	5	C
15	17/12/2013	12:00			100-1000		120	F to N
15	17/12/2013	12:05			800-1600		700	F / C
15	09/01/2014	10:10			500	100	1	F
15	09/01/2014	10:20			1000	200	3	F
15	09/01/2014	10:40			700	200	2	C
15	23/01/2014	10:05			500	100	7	F
15	23/01/2014	10:05			1000	200	26	C to S
15	23/01/2014	10:20			500	100	2	C to N
15	23/01/2014	10:25			500	200	12	F
15	23/01/2014	10:25			2000-3000	1000	40	C to S
15	23/01/2014	10:25			700-1000	500	15	C to S
15	04/02/2014	09:14			2000	700	1	C
15	21/02/2014	07:05	✓		2000	400	1	C / R
15	06/03/2014	08:35			500-2000		21	F / C
15	19/03/2014	13:00			300-1200		41	F
15	19/03/2014	13:00			300-1200		8	C

Appendix C

Inventory of Incidental Seabird Species Recorded During 2013/14 VP Surveys

The following tables list the other bird species recorded incidentally whilst undertaking the RTD surveys:

Table number	Bird species	Table number	Bird species
1	Avocet	22	Herring gull
2	Black-headed gull	23	Kittiwake
3	Brent goose	24	Lapwing
4	Barnacle goose	25	Lesser black-backed gull
5	Cormorant	26	Long-tailed duck
6	Canadian goose	27	Little gull
7	Common gull	28	Mallard
8	Curlew	29	Mute swan
9	Common scoter	30	Great skua
10	Dunlin	31	Oystercatcher
11	Little egret	32	Pintail
12	Fulmar	33	Redshank
13	Gadwall	34	Ringed plover
14	Great black-backed gull	35	Shelduck
15	Goosander	36	Shoveler
16	Greylag goose	37	Shorelark
17	Great crested grebe	38	Teal
18	Goldeneye	39	Turnstone
19	Guillemot	40	Tufted duck
20	Gannet	41	Velvet scoter
21	Heron	42	Wigeon

Table 1: Avocet - Wintering VP surveys results (October 2013 to March 2014)

Avocet – Wintering VP survey results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
19/03/2014	1	09:50	10:35	Inshore	2	C
19/03/2014	3	07:00	07:45	Inshore	1	C to S

Table 2: Black-headed gull - Wintering VP surveys results (October 2013 to March 2014)

Black-headed gull - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
17/10/2013	2	16:45	17:30	Inshore	15	F
17/10/2013	3	07:00	07:45		7	
17/10/2013	4	07:00	07:45	Inshore	40	C
17/10/2013	5	17:00	17:45	Inshore	200	R
17/10/2013	6	15:45	16:30		20	
17/10/2013	7	14:15	15:00	Onshore	10	C
17/10/2013	8	12:45	13:30	Inshore	10	R
17/10/2013	9	11:15	12:00	Inshore	10	C
17/10/2013	13	13:45	14:30	Inshore	1	R
17/10/2013	14	12:45	13:30	Onshore	3	F / R
18/10/2013	15	06:45	07:30	Inshore	3000	R
31/10/2013	2	09:45	10:30	Inshore	8	C / F
31/10/2013	3	08:40	09:25	Inshore	1	R
31/10/2013	4	15:15	16:00	Inshore	50	R
31/10/2013	5	14:00	14:45	Inshore	2	C
31/10/2013	6	12:30	13:15	Onshore	4	C
31/10/2013	7	16:20	16:50	Inshore	74	C / R
31/10/2013	15	14:55	15:40	Inshore/onshore	12	C / R

Black-headed gull - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
01/11/2013	7	06:35	07:30	Inshore/onshore	14	C / F
01/11/2013	6	06:30	07:30	Inshore	50	C
12/11/2013	1	12:45	13:30	Inshore	3	C
12/11/2013	2	13:40	12:25	Inshore	20	F
12/11/2013	3	14:35	15:20	Inshore	20	F / R
12/11/2013	4	15:45	16:30	Inshore	~100	R
12/11/2013	5	15:40	16:25	Inshore	100	R
12/11/2013	7	07:25	08:10	Inshore	6	R
12/11/2013	8	14:35	15:20	Inshore	18	R
12/11/2013	9	13:25	14:05	Onshore	2	C
12/11/2013	15	09:10	09:55	Inshore	1	C
13/11/2013	4	06:50	07:40	Inshore	~30	C / R
13/11/2013	5	06:45	07:30	Inshore	60	C / R
26/11/2013	2	13:25	14:10	Inshore	c200	F
26/11/2013	3	14:20	15:05	Inshore/onshore	40	F
26/11/2013	4	07:00	07:45	Inshore	150	C / R
26/11/2013	5	07:00	07:45	Inshore	c100	C / F
26/11/2013	6	15:20	16:05	Inshore	c80	C / F / R
26/11/2013	7	08:00	08:45		2	C
26/11/2013	8	15:15	16:00	Inshore	500	R
26/11/2013	13	10:30	11:15	Inshore	10	F
26/11/2013	14	09:30	10:15	Inshore	45	C / F
26/11/2013	15	08:25	09:10	Inshore	50	C / F
27/11/2013	6	07:00	07:45	Inshore/onshore	150	C / F / R
05/12/2013	2	07:30	08:15		60	F
05/12/2013	3	07:30	08:15	Inshore/onshore	150	F / R
05/12/2013	4	08:45	09:30	Inshore	10	F
05/12/2013	7	11:50	12:35		10	F / R

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Black-headed gull - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
05/12/2013	8	12:50	13:35	Onshore	30	F
05/12/2013	9	13:50	14:35	Onshore	25	F / R
05/12/2013	13	11:15	12:00	Inshore	20	C
05/12/2013	14	10:15	11:00	Inshore	10	C
06/12/2013	14	08:15	09:00	Inshore	10	C
06/12/2013	15	08:15	09:00	Inshore/onshore	10	F
16/12/2013	2	15:00	15:45	Inshore	60	F
16/12/2013	3	15:15	16:00	Inshore	20	R / C
17/12/2013	1	08:15	09:00	Inshore	15	F / R / C
17/12/2013	3	07:15	08:00	Onshore	100	R
17/12/2013	4	15:50	16:15	Inshore	20	R
17/12/2013	7	14:30	15:15	Inshore	12	R
17/12/2013	10	12:15	13:00	Inshore	4	C
17/12/2013	15	12:00	12:45	Onshore	10	F / C
08/01/2014	8	15:00	16:00	Inshore	500	R
08/01/2014	9	15:15	16:00	Both	25	C / F
09/01/2014	8	07:15	08:00	Inshore	200	F
09/01/2014	1	13:15	14:00	Inshore	10	C
09/01/2014	2	14:30	13:15	Inshore	100	F
09/01/2014	6	10:20	11:05	Inshore/onshore	20	R / C
09/01/2014	9	07:15	08:00	Inshore	50	C
09/01/2014	10	12:15	13:00	Inshore	10	F
09/01/2014	14	10:15	11:00	Inshore	10	F
09/01/2014	15	10:00	10:45	Inshore	20	F
22/01/2014	2	15:30	16:30	Inshore	100	F
22/01/2014	3	15:30	16:30	Inshore	150	R / F
23/01/2014	1	08:15	09:00	Inshore	20	R
23/01/2014	2	06:45	07:45	Inshore	500	F / R

Black-headed gull - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
23/01/2014	3	06:45	07:45	Inshore	120	C / F / R
23/01/2014	6	15:45	16:30		100	R
23/01/2014	6	14:45	15:30	Onshore	10	R
23/01/2014	9	13:25	14:10	onshore/Inshore	25	F
23/01/2014	14	11:00	11:45		4	C
23/01/2014	15	10:00	10:45	Inshore	20	C
03/02/2014	6	15:50	16:35	Inshore	10	C
04/02/2014	1	11:30	12:15	Inshore	10	C
04/02/2014	4	14:40	15:25	Inshore	50	C
04/02/2014	8	14:30	15:15	Onshore	30	F
04/02/2014	9	13:20	14:05	Onshore	35	F
04/02/2014	13	10:40	11:25	Inshore	10	C / R
04/02/2014	14	09:45	10:30	Inshore	7	C
04/02/2014	15	08:30	09:15	Inshore	30	C
20/02/2014	3	13:20	14:05	Inshore	2	C
20/02/2014	4	14:30	15:15	Inshore	2	C
20/02/2014	5	07:15	08:00	onshore/Inshore	10	F / C
20/02/2014	7	15:50	16:35	onshore/Inshore	20	C
20/02/2014	8	14:40	15:35	Onshore	35	F
20/02/2014	9	13:30	14:15	Onshore	30	F
20/02/2014	13	09:30	10:15	Inshore	2	C
20/02/2014	14	17:00	17:45	Inshore	700	R / C
20/02/2014	15	17:00	17:45	Inshore	450	R / C
21/02/2014	14	06:30	07:15	Inshore	300	F / C
21/02/2014	15	06:30	07:15	Inshore	300	C
05/03/2014	6	17:15	18:00	Inshore	142	R / C
05/03/2014	7	17:10	17:55	Inshore	200	R
06/03/2014	1	10:35	11:20	Inshore	10	F

Black-headed gull - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
06/03/2014	2	12:45	13:30	Inshore	10	F / C
06/03/2014	3	12:40	13:25	Inshore	25	F / R
06/03/2014	6	06:15	07:00	Inshore	40	C
06/03/2014	7	06:15	07:00	Inshore	25	C to S
06/03/2014	6	13:45	14:30	Inshore	12	C
06/03/2014	9	12:30	13:15	Inshore	5	C
06/03/2014	10	11:15	12:00	Inshore	5	C
06/03/2014	13	10:30	11:15	Inshore	10	C
06/03/2014	14	09:25	10:10	Inshore	10	C
06/03/2014	15	08:25	09:10	Inshore	10	C to N
18/03/2014	4	17:45	18:30	Inshore	60	R / C
18/03/2014	5	17:40	18:25	Inshore	70	F / R / C
19/03/2014	1	09:50	10:35	Inshore	8	R
19/03/2014	2	08:00	08:45	Inshore	10	C
19/03/2014	3	07:00	07:45	Inshore	60	C / R
19/03/2014	4	05:50	06:35	Inshore	70	C
19/03/2014	5	05:45	06:30	Inshore	125	F / C
19/03/2014	6	06:45	07:30	Inshore	80	F / C
19/03/2014	7	14:25	15:10	Inshore	15	C / R
19/03/2014	8	14:15	15:00	Inshore / onshore	45	F
19/03/2014	9	13:00	13:45	Inshore / onshore	80	R / F
19/03/2014	13	11:00	11:45	Inshore	30	C
19/03/2014	14	11:50	12:35		30	C
19/03/2014	15	13:00	13:45		10	C

Table 3: Brent goose – Wintering VP survey results (October 2013 to March 2014)

Brent goose – Wintering VP survey results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
17/10/2013	13	13:45	14:30	Inshore	7	C to S
31/10/2014	3	08:40	09:25	Inshore/onshore	27	C
31/10/2014	5	14:00	14:45	Inshore	1	C
31/10/2014	7	11:15	12:00	Inshore	6	C
31/10/2014	14	13:35	14:20	Inshore	4	C
12/11/2013	6	07:25	08:10	Inshore	4	C
12/11/2013	7	07:25	08:10	Inshore	21	C
12/11/2013	9	13:25	14:05	Inshore	8	C
13/11/2013	4	06:50	07:40	Inshore	12	C
26/11/2013	11	11:15	12:00		1	
26/11/2013	12	09:30	10:15	Inshore	10	C
17/12/2013	9	13:30	14:15	Inshore	5	C
08/01/2014	8	15:00	15:45	Inshore	4	C
09/01/2014	15	10:00	10:45	Inshore	4	C
04/02/2014	12	09:20	10:05	Inshore	2	C to S
20/02/2014	1	10:55	11:40	Inshore	37	C
20/02/2014	2	12:10	12:55	Inshore	1	C
20/02/2014	13	09:30	10:15	Inshore	61	C

Table 4: Barnacle goose - Wintering VP surveys results (October 2013 to March 2014)

Barnacle goose - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
18/10/2013	15	06:45	07:30	Inshore	20	C
31/10/2013	9	08:30	09:15	Inshore	15	C
23/01/2014	1	08:15	09:00	Inshore	60	C
04/02/2014	6	07:20	08:05	Onshore	25	C
20/02/2014	7	15:50	16:35	Onshore	80	C
20/02/2014	11	11:00	11:45	Inshore	1	C to S

Table 5: Cormorant - Wintering VP surveys results (October 2013 to March 2014)

Cormorant - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
22/01/2013	2	15:30	16:30	Inshore	60	R
17/10/2013	1	13:45	14:30	Inshore	1	F
17/10/2013	2	16:45	17:30	Onshore	60	R / F
17/10/2013	3	07:00	07:45	Inshore	10	C / R
17/10/2013	4	07:00	07:45	Inshore	40	C / R
17/10/2013	5	17:00	17:45	Inshore	2	C
17/10/2013	6	15:45	16:30		2	C
17/10/2013	7	14:15	15:00	Onshore	2	C
17/10/2013	8	12:45	13:30	Inshore	20	R
17/10/2013	13	13:45	14:30	Inshore	1	C to S
17/10/2013	14	12:45	13:30	Inshore	1	C / F
17/10/2013	15	11:45	12:25	Inshore	1	F
18/10/2013	15	06:45	07:30	Inshore	10	C

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Cormorant - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
31/10/2013	2	09:45	10:30	Inshore	56	R / C / F
31/10/2013	3	08:40	09:25	Inshore	4	C
31/10/2013	4	15:15	16:00	Inshore	4	C
31/10/2013	5	14:00	14:45	Inshore	10	C
31/10/2013	7	11:15	12:00	Inshore	4	C
31/10/2013	7	06:35	07:30	Inshore	11	C / F
31/10/2013	8	10:10	10:45	Inshore	10	F
01/11/2013	6	06:30	07:30	Inshore	10	C
01/11/2013	15	14:55	15:40	Inshore	1	C
12/11/2013	1	12:45	13:30	Inshore	3	C
12/11/2013	3	14:35	15:20	Inshore	17	C
12/11/2013	4	15:45	16:30	Inshore	5	C
12/11/2013	5	15:40	16:25	Inshore	2	C
12/11/2013	6	07:25	08:10	Inshore	2	C
12/11/2013	7	07:25	08:10	Inshore	9	C
12/11/2013	10	12:05	12:50	Inshore	6	F
12/11/2013	12	09:20	10:05	Inshore	6	C
12/11/2013	14	10:15	11:00	Inshore	1	F
13/11/2013	4	06:50	07:40	Inshore	20	C
13/11/2013	5	06:45	07:30	Inshore	6	C
26/11/2013	1	11:30	12:15	Inshore	10	F
26/11/2013	2	13:25	14:10	Inshore	34	F / R
26/11/2013	3	14:20	15:05	Inshore	40	F
26/11/2013	4	07:00	07:45	Inshore	150	C
26/11/2013	5	07:00	07:45	Inshore	40	C / F
26/11/2013	6	15:20	16:05	Inshore	25	C / F / R

Cormorant - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
26/11/2013	9	14:00	14:45	Inshore	10	F
26/11/2013	10	12:45	13:30	Inshore	10	F
26/11/2013	11	11:15	12:00		1	
26/11/2013	12	09:30	10:15	Inshore	10	F / C
26/11/2013	13	10:30	11:15	Inshore	15	F
26/11/2013	14	09:30	10:15	Inshore	13	C / F
26/11/2013	15	08:25	09:10	Inshore	25	C / F
27/11/2013	6	07:00	07:45	Inshore	80	C
27/11/2013	7	07:00	07:45	Inshore	100	C to S
05/12/2013	2	07:30	08:15		10	F / C
05/12/2013	3	07:30	08:15	Inshore	30	C
05/12/2013	4	08:45	09:30	Inshore	30	F / C
05/12/2013	5	09:55	10:40	Inshore	15	C / F
05/12/2013	6	11:00	11:45	Inshore	8	C
05/12/2013	7	11:50	12:35		3	R / F
05/12/2013	8	12:50	13:35	Inshore	15	C
05/12/2013	14	10:15	11:00	Inshore	4	F
05/12/2013	15	09:00	09:45	Inshore	4	F
06/12/2013	14	08:15	09:00	Inshore	4	C
06/12/2013	15	08:15	09:00	Inshore	10	C
16/12/2013	2	15:00	15:45	Inshore	80	R
16/12/2013	3	15:15	16:00	Inshore	10	C
17/12/2013	1	08:15	09:00	Inshore	20	F / C / R
17/12/2013	2	07:15	08:00	Inshore	100	F / C / R
17/12/2013	3	07:15	08:00	Onshore	70	R
17/12/2013	4	15:50	16:15	Inshore	4	C

Cormorant - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
17/12/2013	5	15:30	16:15	Inshore	5	C
17/12/2013	6	14:30	15:15	Inshore	3	C
17/12/2013	7	14:30	15:15	Inshore	4	C
17/12/2013	8	13:15	14:00	Inshore	8	C
17/12/2013	9	13:30	14:15	Inshore	20	F
17/12/2013	10	12:15	13:00	Inshore	30	F
17/12/2013	11	11:00	11:45	Inshore	20	F
17/12/2013	12	09:30	10:15	Inshore	20	F / C
17/12/2013	13	09:55	10:40	Inshore	20	F / C
17/12/2013	14	11:00	11:45	Inshore	6	F / C
17/12/2013	15	12:00	12:45	Inshore	5	F / C
08/01/2014	8	15:00	16:00	Inshore	4	C
08/01/2014	9	15:15	16:00	Inshore	10	C
09/01/2014	1	13:15	14:00	Inshore	4	F
09/01/2014	3	13:45	14:30	Inshore	20	F / C
09/01/2014	4	12:45	13:30	Inshore	6	C
09/01/2014	6	10:20	11:05	Inshore	4	C
09/01/2014	4	09:25	10:10	Inshore	4	C
09/01/2014	9	07:15	08:00	Inshore	2	C
09/01/2014	13	12:15	13:00	Inshore	2	F
09/01/2014	14	10:15	11:00	Inshore	4	F
22/01/2014	3	15:30	16:30	Inshore	10	C / R
23/01/2014	1	08:15	09:00	Inshore	10	F
23/01/2014	2	06:45	07:45	Inshore	60	R
23/01/2014	3	06:45	07:45	Inshore	25	C
23/01/2014	4	13:00	13:45	Inshore	6	F

Cormorant - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
23/01/2014	5	15:45	16:30	Inshore	20	C / F
23/01/2014	6	15:45	16:30		30	C to N
23/01/2014	7	14:25	15:30		10	C
23/01/2014	6	14:45	15:30		25	C / F
23/01/2014	9	13:25	14:10	Inshore	30	F / C
23/01/2014	10	12:00	12:45	Inshore	20	F / C
23/01/2014	11	10:50	11:35	Inshore	35	R / F
23/01/2014	12	09:20	10:05	Inshore	16	C / F
23/01/2014	13	12:00	12:45	Inshore	4	F
23/01/2014	14	11:00	11:45		2	F
03/02/2014	1	11:30	12:15	Inshore	2	C
03/02/2014	2	12:50	13:35	Inshore	45	C
04/02/2014	3	13:40	14:25	Inshore	10	C
04/02/2014	4	14:40	15:25	Inshore	10	F / C / R
04/02/2014	5	16:00	16:45	Inshore	15	C
04/02/2014	6	07:20	08:05	Inshore	25	C / F
04/02/2014	7	07:20	08:05	Inshore	9	C
04/02/2014	8	14:30	15:15	Inshore	10	C / F
04/02/2014	9	13:20	14:05	Inshore	6	F
04/02/2014	10	12:00	12:45	Inshore	10	C / F
04/02/2014	11	10:35	11:20	Inshore	12	C / F
04/02/2014	12	09:20	10:05	Inshore	15	F
04/02/2014	13	10:40	11:25	Inshore	6	C / F
04/02/2014	14	09:45	10:30	Inshore	4	C / F
04/02/2014	15	08:30	09:15	Inshore	4	C
20/02/2014	1	10:55	11:40	Inshore	1	C

Cormorant - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
20/02/2014	2	12:10	12:55	Inshore	86	C / R
20/02/2014	3	13:20	14:05	Inshore	41	R / C
20/02/2014	4	14:30	15:15	Inshore	6	C
20/02/2014	5	07:15	08:00	Inshore	15	F / C
20/02/2014	6	07:15	08:00	Inshore	16	C
20/02/2014	7	15:50	16:35	Inshore	1	C
20/02/2014	9	13:30	14:15	Inshore	2	C
20/02/2014	10	12:15	13:00		5	F
20/02/2014	11	11:00	11:45	Inshore	5	C
20/02/2014	12	09:15	10:00	Inshore	15	F / C
20/02/2014	13	09:30	10:15	Inshore	4	C
21/02/2014	14	06:30	07:15	Inshore	3	C
21/02/2014	15	06:30	07:15	Inshore	2	C
06/03/2014	1	10:35	11:20	Inshore	4	F
06/03/2014	2	12:45	13:30	Inshore	90	F / R
06/03/2014	3	12:40	13:25	Inshore	30	F / R
06/03/2014	4	13:45	14:30	Inshore	20	F / C
06/03/2014	5	13:50	14:35	Inshore	15	C
06/03/2014	6	06:15	07:00	Inshore	4	C
06/03/2014	7	06:15	07:00	Inshore	11	C
06/03/2014	6	13:45	14:30	Inshore	1	F
06/03/2014	9	12:30	13:15	Inshore	12	C
06/03/2014	10	11:15	12:00	Inshore	1	C
06/03/2014	11	10:05	10:50	Inshore	3	C
06/03/2014	12	08:50	09:35	Inshore	2	C
06/03/2014	13	10:30	11:15	Inshore	3	F

Cormorant - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
06/03/2014	14	09:25	10:10	Inshore	6	C / F
06/03/2014	15	08:25	09:10	Inshore	6	C / F
18/03/2014	4	17:45	18:30	Inshore	4	C to N
19/03/2014	1	09:50	10:35	Inshore	2	C
19/03/2014	2	08:00	08:45	Inshore	50	R
19/03/2014	3	07:00	07:45	Inshore	40	C / R / F
19/03/2014	4	05:50	06:35	Inshore	60	C / F
19/03/2014	5	05:45	06:30	Inshore	15	F / C
19/03/2014	6	06:45	07:30	Inshore	10	F / C
19/03/2014	8	14:15	15:00	Inshore	1	F
19/03/2014	10	11:40	12:25	Inshore	6	C
19/03/2014	11	10:25	11:10	Inshore	15	F / C
19/03/2014	12	09:00	09:45	Inshore	3	F / C

Table 6: Canada goose - Wintering VP surveys results (October 2013 to March 2014)

Canada goose - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
17/10/2013	2	16:45	17:30	Onshore	2	C to N
17/10/2013	2	16:45	17:30	Inshore	14	C to N
09/01/2014	15	10:00	10:45	Inshore	10	C
21/02/2014	14	06:30	07:15	Inshore	1	C
21/02/2014	15	06:30	07:15	Inshore	75	C
06/03/2014	6	06:15	07:00	Onshore	5	C
19/03/2014	7	14:25	15:10	Inshore	12	C

Table 7: Common gull - Wintering VP surveys results (October 2013 to March 2014)

Common gull - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
31/10/2013	2	09:45	10:30	Inshore	9	C / F
31/10/2013	13	12:40	13:25	Inshore	2	C
12/11/2013	2	13:40	12:25	Inshore	20	F
12/11/2013	4	15:45	16:30	Inshore	20	R
12/11/2013	13	11:10	11:55	Inshore	2	C
13/11/2013	4	06:50	07:40	Inshore	20	C / F
05/12/2013	2	07:30	08:15		70	F
05/12/2013	7	11:50	12:35		2	R
05/12/2013	8	12:50	13:35	Onshore	15	R
06/12/2013	15	08:15	09:00	Inshore/onshore	15	F
16/12/2013	2	15:00	15:45	Inshore	80	F
17/12/2013	1	08:15	09:00	Inshore	25	F / C / R

Common gull - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
17/12/2013	2	07:15	08:00	Inshore	60	F / C / R
08/01/2014	8	15:00	16:00	Inshore	20	R
09/01/2014	3	13:45	14:30	Inshore	15	F
20/02/2014	1	10:55	11:40	Inshore	1	C
20/02/2014	5	07:15	08:00	Inshore/onshore	10	F / C
20/02/2014	7	15:50	16:35	Onshore	1	R
20/02/2014	14	17:00	17:45	Inshore	200	R / C
05/03/2014	6	17:15	18:00	Inshore	4	R
05/03/2014	7	17:10	17:55	Inshore	450	R
06/03/2014	13	10:30	11:15	Inshore	2	C
18/03/2014	4	17:45	18:30	Inshore	15	R
19/03/2014	2	08:00	08:45	Inshore	20	R / C
19/03/2014	5	05:45	06:30	Inshore	25	F / C
19/03/2014	6	06:45	07:30	Inshore	50	F / C
19/03/2014	12	09:00	09:45	Inshore	10	F / C

Table 8: Curlew - Wintering VP surveys results (October 2013 to March 2014)

Curlew - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
18/10/2013	15	06:45	07:30	Inshore	1	C
31/10/2013	14	13:35	14:20	Inshore	2	C
26/11/2013	15	08:25	09:10	Onshore	1	
20/02/2014	6	07:15	08:00	Inshore	2	C
06/03/2014	14	09:25	10:10	Inshore	5	C to S

Table 9: Common scoter - Wintering VP surveys results (October 2013 to March 2014)

Common scoter - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
17/10/2013	8	12:45	13:30	Inshore	20	R
17/10/2013	9	11:15	12:00	Inshore	40	R
17/10/2013	15	11:45	12:25	Inshore	6	F
18/10/2013	15	06:45	07:30	Inshore	20	C
31/10/2013	6	12:30	13:15	Inshore	6	C
31/10/2013	7	11:15	12:00	Inshore	20	C
31/10/2013	9	08:30	09:15	Inshore	20	R
01/11/2013	6	06:30	07:30	Inshore	15	C
12/11/2013	1	12:45	13:30	Inshore	20	C
12/11/2013	3	14:35	15:20	Inshore	80	C
12/11/2013	7	07:25	08:10	Inshore	~15	R

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Common scoter - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/11/2013	8	14:35	15:20	Inshore	200	R / F
12/11/2013	9	13:25	14:05	Inshore	26	F
12/11/2013	10	12:05	12:50	Inshore	20	C
12/11/2013	12	09:20	10:05	Inshore	8	C
12/11/2013	13	11:10	11:55	Inshore	~50	C
12/11/2013	14	10:15	11:00	Inshore	30	C
12/11/2013	15	09:10	09:55	Inshore	4	C
26/11/2013	4	07:00	07:45	Inshore	10	C
26/11/2013	9	14:00	14:45	Inshore	15	R
26/11/2013	10	12:45	13:30	Inshore	30	C
26/11/2013	11	11:15	12:00		1	
05/12/2013	2	07:30	08:15	Inshore	20	
05/12/2013	9	13:50	14:35	Inshore	30	C / F
05/12/2013	14	10:15	11:00	Inshore	2	C
16/12/2013	2	15:00	15:45	Inshore	1	C
17/12/2013	1	08:15	09:00	Inshore	15	C
17/12/2013	2	11:00	11:45	Inshore	100	R
17/12/2013	5	15:30	16:15	Inshore	50	C
17/12/2013	6	14:30	15:15	Inshore	5	R
17/12/2013	8	13:15	14:00	Inshore	60	R
17/12/2013	9	13:30	14:15	Inshore	10	C
17/12/2013	10	12:15	13:00	Inshore	100	R
17/12/2013	12	09:30	10:15	Inshore	10	R
17/12/2013	14	11:00	11:45	Inshore	35	C
08/01/2014	8	15:00	16:00	offshore	250	R
08/01/2014	9	15:15	16:00	Inshore	60	R

Common scoter - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
09/01/2014	15	10:00	10:45	Inshore	20	C
23/01/2014	1	08:15	09:00	Inshore	20	C
23/01/2014	4	13:00	13:45	Inshore	50	C
23/01/2014	6	14:45	15:30	Onshore	30	F
23/01/2014	9	13:25	14:10		50	F
23/01/2014	10	12:00	12:45	Inshore	55	F / R
23/01/2014	11	10:50	11:35	Inshore	120	R
23/01/2014	12	09:20	10:05	Inshore	80	R / F
23/01/2014	13	12:00	12:45	Inshore	50	C
23/01/2014	15	10:00	10:45	Inshore	200	F / C
04/02/2014	6	07:20	08:05	Inshore	20	C
04/02/2014	12	09:20	10:05	Inshore	26	F
20/02/2014	8	14:40	15:35	Inshore	8	R
05/03/2014	7	17:10	17:55	Inshore	10	R
06/03/2014	1	10:35	11:20	Inshore	5	C to S
06/03/2014	7	06:15	07:00	Inshore	6	C to S
06/03/2014	14	09:25	10:10	Inshore	3	C to S
06/03/2014	15	08:25	09:10	Inshore	15	C to S / R
19/03/2014	4	05:50	06:35	Inshore	14	C to S
19/03/2014	5	05:45	06:30	Inshore	12	C
19/03/2014	6	06:45	07:30	Inshore	20	R / C
19/03/2014	7	14:25	15:10	Inshore	30	R
19/03/2014	9	13:00	13:45	Inshore	60	R
19/03/2014	10	11:40	12:25	Inshore	45	R
19/03/2014	11	10:25	11:10	Inshore	35	R
19/03/2014	12	09:00	09:45	Inshore	4	R

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Table 10: Dunlin - Wintering VP surveys results (October 2013 to March 2014)

Dunlin - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
05/12/2013	9	13:50	14:35	Onshore	50	F
23/01/2014	12	09:20	10:05	Inshore	12	C
19/03/2014	1	09:50	10:35	Inshore	5	C

Table 11: Little egret - Wintering VP surveys results (October 2013 to March 2014)

Little egret - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
18/10/2013	15	06:45	07:30	Inshore	1	C
12/11/2014	6	07:25	08:10	Inshore	1	C

Table 12: Fulmar - Wintering VP surveys results (October 2013 to March 2014)

Fulmar - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
06/03/2014	14	09:25	10:10	Inshore	1	C to S
18/03/2014	4	17:45	18:30	Inshore	2	C to S
19/03/2014	12	09:00	09:45	Inshore	2	C to N

Table 13: Gadwall - Wintering VP surveys results (October 2013 to March 2014)

Gadwall - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/11/2013	2	13:40	12:25	Inshore	14	R
06/03/2014	4	13:45	14:30	Inshore	2	C to N

Table 14: Great black-backed gull - Wintering VP surveys results (October 2013 to March 2014)

Great black-backed gull - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
17/10/2013	1	13:45	14:30	Inshore	1	R
17/10/2013	2	16:45	17:30	Inshore	3	R
17/10/2013	5	17:00	17:45	Inshore	20	R
17/10/2013	6	15:45	16:30		4	R
17/10/2013	7	14:15	15:00	Onshore	2	R
17/10/2013	8	12:45	13:30	Inshore	10	R
17/10/2013	13	13:45	14:30	Inshore	1	C
17/10/2013	15	11:45	12:25	Inshore	1	R
31/10/2013	1	11:40	12:25		1	R
31/10/2013	2	09:45	10:30	Inshore	11	C / R
31/10/2013	3	08:40	09:25	Inshore	4	C / R
31/10/2013	5	14:00	14:45	Inshore	3	R
31/10/2013	6	12:30	13:15	Inshore	2	R
31/10/2013	7	11:15	12:00	Inshore	4	C
31/10/2013	7	16:20	16:50	Inshore	1	R
31/10/2013	8	10:10	10:45	Inshore	4	R

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Great black-backed gull - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
31/10/2013	14	13:35	14:20	Inshore	1	C
31/10/2013	15	14:55	15:40	Inshore	30	
01/11/2013	7	06:35	07:30	Inshore	1	R
12/11/2013	2	13:40	12:25	Inshore	10	F
12/11/2013	3	14:35:00	15:20	Inshore	10	R
12/11/2013	4	15:45	16:30	Inshore	28	C
12/11/2013	5	15:40	16:25	Inshore	4	R
12/11/2013	6	07:25	08:10	Inshore	1	R
12/11/2013	7	07:25	08:10	Inshore	4	R
12/11/2013	8	14:35	15:20	Inshore	4	R
12/11/2013	12	09:20	10:05	Inshore	4	C
12/11/2013	13	11:10	11:55	Inshore	4	R
12/11/2013	14	10:15	11:00	Inshore	3	F
12/11/2013	15	09:10	09:55	Inshore	15	C
13/11/2013	4	06:50	07:40	Inshore	~20	C
26/11/2013	1	11:30	12:15	Inshore	1	F
26/11/2013	2	13:25	14:10	Inshore	3	F
26/11/2013	3	14:20	15:05	Inshore/onshore	2	F
26/11/2013	4	07:00	07:45	Inshore	2	C
26/11/2013	8	15:15	16:00	Inshore	1	R
26/11/2013	10	12:45	13:30	Inshore	10	R
05/12/2013	3	07:30	08:15	Inshore	10	F / R
05/12/2013	4	08:45	09:30	Inshore	4	F
05/12/2013	5	09:55	10:40	Inshore	2	F
05/12/2013	6	11:00	11:45	Inshore	5	F
05/12/2013	8	12:50	13:35	Onshore	10	R

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Great black-backed gull - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
05/12/2013	14	10:15	11:00	Inshore	10	R
16/12/2013	3	15:15	16:00	Inshore	2	R
17/12/2013	1	08:15	09:00	Inshore	10	F / C / R
17/12/2013	2	07:15	08:00	Inshore	20	F / C / R
17/12/2013	3	07:15	08:00	Onshore	20	R
17/12/2013	4	15:50	16:15	Inshore	1	C
17/12/2013	7	14:30	15:15	Inshore	4	R
17/12/2013	12	09:30	10:15	Inshore	1	R
17/12/2013	13	09:55	10:40	Inshore	10	F / C
17/12/2013	15	12:00	12:45	Inshore	10	F
08/01/2014	8	15:00	16:00	Inshore	4	R
09/01/2014	1	13:15	14:00	Inshore	1	R
09/01/2014	3	13:45	14:30	Inshore	4	F
09/01/2014	7	09:25	10:10	Inshore	3	C
09/01/2014	15	10:00	10:45	Inshore	1	R
22/01/2014	2	15:30	16:30	Inshore	40	F
23/01/2014	1	08:15	09:00	Inshore	20	R
23/01/2014	2	06:45	07:45	Inshore	30	R
23/01/2014	4	13:00	13:45	Inshore	1	R
23/01/2014	13	12:00	12:45	Inshore	2	R
23/01/2014	14	11:00	11:45	Inshore	2	R
04/02/2014	1	11:30	12:15	Inshore	1	R
04/02/2014	2	12:50	13:35	Inshore	6	R
04/02/2014	8	14:30	15:15	Onshore	2	F
04/02/2014	13	10:40	11:25	Inshore	2	R
20/02/2014	1	10:55	11:40	Inshore	7	C / F

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Great black-backed gull - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
20/02/2014	2	12:10	12:55	Inshore	57	C / F
20/02/2014	3	13:20	14:05	Inshore	18	C / R
20/02/2014	4	14:30	15:15	Inshore	14	C
20/02/2014	6	07:15	08:00	Inshore	5	C
20/02/2014	7	15:50	16:35	Inshore	2	C
20/02/2014	8	14:40	15:35	Onshore	3	C
20/02/2014	13	09:30	10:15	Inshore	16	C
20/02/2014	14	17:00	17:45	Inshore	30	C
21/02/2014	15	06:30	07:15	Inshore	4	C
05/03/2014	6	17:15	18:00	Inshore	2	C
05/03/2014	7	17:10	17:55	Inshore	10	R
06/03/2014	2	12:45	13:30	Inshore	30	F / R
06/03/2014	4	13:45	14:30	Inshore	5	C / R
06/03/2014	6	06:15	07:00	Inshore	15	C
06/03/2014	11	10:05	10:50	Inshore	2	R
06/03/2014	12	08:50	09:35	Inshore	4	C
06/03/2014	13	10:30	11:15	Inshore	20	C / R
06/03/2014	14	09:25	10:10	Inshore	30	C / R
06/03/2014	15	08:25	09:10	Inshore	35	R / F
18/03/2014	4	17:45	18:30	Inshore	20	R / C
18/03/2014	5	17:40	18:25	Inshore	3	R
19/03/2014	1	09:50	10:35	Inshore	10	R / C
19/03/2014	3	07:00	07:45	inshore	30	R
19/03/2014	4	05:50	06:35	Inshore	20	R / C
19/03/2014	7	14:25	15:10	Inshore	5	R
19/03/2014	8	14:15	15:00	Onshore	6	F

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Great black-backed gull - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
19/03/2014	9	13:00	13:45	Inshore	4	R
19/03/2014	13	11:00	11:45	Inshore	15	R / C
19/03/2014	14	11:50	12:35		10	R / C
19/03/2014	15	13:00	13:45	Inshore	5	C

Table 15: Goosander - Wintering VP surveys results (October 2013 to March 2014)

Goosander - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/11/2013	8	14:35	15:20	Inshore	1	R / swim
12/11/2013	13	11:10	11:55	Inshore/onshore	1	C

Table 16: Greylag goose - Wintering VP surveys results (October 2013 to March 2014)

Greylag goose- Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
06/03/2014	6	06:15	07:00	Onshore	5	C

Table 17: Great crested grebe - Wintering VP surveys results (October 2013 to March 2014)

Great crested grebe - Wintering VP surveys results (September 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/11/2013	1	12:45	13:30	Inshore	1	C
12/11/2013	14	10:15	11:00	Inshore	2	C / R
12/11/2013	15	09:10	09:55	Inshore	5	C / R
17/12/2013	6	14:30	15:15	Inshore	1	F
17/12/2013	13	09:55	10:40	Inshore	10	F
17/12/2013	14	11:00	11:45	Inshore	4	F
17/12/2013	4	15:50	16:15	Inshore	1	F
17/12/2013	10	12:15	13:00	Inshore	4	F
17/12/2013	12	09:30	10:15	Inshore	4	R
08/01/2014	9	15:15	16:00	Inshore	4	F
09/01/2014	1	13:15	14:00	Inshore	3	F
09/01/2014	3	13:45	14:30	Inshore	1	F
09/01/2014	14	10:15	11:00	Inshore	5	F
09/01/2014	15	10:00	10:45	Inshore	1	F
23/01/2014	1	08:15	09:00	Inshore	2	F
23/01/2014	3	06:45	07:45	Inshore	1	F
23/01/2014	4	13:00	13:45	Inshore	2	F
23/01/2014	13	12:00	12:45	Inshore	2	F
23/01/2014	14	11:00	11:45		4	F
23/01/2014	15	10:00	10:45	Inshore	4	F
04/02/2014	15	08:30	09:15	Inshore	1	F
21/02/2014	14	06:30	07:15	Inshore	1	F

Table 18: Goldeneye - Wintering VP surveys results (October 2013 to March 2014)

Goldeneye - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/11/2013	2	13:40	12:25	Inshore	2	commuting

Table 19: Guillemot - Wintering VP surveys results (October 2013 to March 2014)

Guillemot - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/11/2013	1	12:45	13:30	Inshore	1	C
12/11/2013	15	09:10	09:55	Inshore	1	C

Table 20: Gannet - Wintering VP surveys results (October 2013 to March 2014)

Gannet - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
31/10/2013	1	11:40	12:25		2	C
31/10/2013	13	12:40	13:25	Inshore	5	C
31/10/2013	14	13:35	14:20	Inshore	~7	C
31/10/2013	15	14:55	15:40	Inshore	2	C
01/11/2013	7	06:35	07:30	Inshore	4	C
12/11/2013	1	12:45	13:30	Inshore	3	F
12/11/2013	3	14:35:00	15:20	Inshore	3	C / F

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Gannet - Wintering VP surveys results (October 2013 to March 2014)

Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/11/2013	7	07:25	08:10	Inshore	7	F
12/11/2013	11	10:50	11:35	Inshore	10	C
12/11/2013	12	09:20	10:05	Inshore	4	C
12/11/2013	13	11:10	11:55	Inshore	8	F
12/11/2013	14	10:15	11:00	Inshore	7	F
12/11/2013	15	09:10	09:55	Inshore	3	F
05/12/2013	13	11:15	12:00	Inshore	5	C
05/12/2013	15	09:00	09:45	Inshore	2	C
06/03/2014	5	13:50	14:35	Inshore	16	C to N
06/03/2014	13	10:30	11:15	Inshore	2	C to N
06/03/2014	14	09:25	10:10	Inshore	2	C to N
06/03/2014	15	08:25	09:10	Inshore		
19/03/2014	1	09:50	10:35	Inshore	8	C
19/03/2014	2	08:00	08:45	Inshore	4	C to N
19/03/2014	3	07:00	07:45	Inshore	7	C / R / F
19/03/2014	4	05:50	06:35	Inshore	1	C to N
19/03/2014	7	14:25	15:10	Inshore	3	C
19/03/2014	8	14:15	15:00	Inshore	11	C to N
19/03/2014	10	11:40	12:25	Inshore	11	C to N
19/03/2014	12	09:00	09:45	Inshore	8	C to N
19/03/2014	13	11:00	11:45	Inshore	7	C
19/03/2014	14	15:50	12:35		7	C
19/03/2014	15	13:00	13:45	Inshore	3	C

Table 21: Heron - Wintering VP surveys results (October 2013 to March 2014)

Heron - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
31/10/2013	5	14:00	14:45	Onshore	1	C

Table 22: Herring gull - Wintering VP surveys results (October 2013 to March 2014)

Herring gull - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
08/01/2013	9	15:15	16:00	Both	30	C / F
09/01/2013	10	07:15	08:00	Inshore	10	F
22/01/2013	2	15:30	16:30	Inshore	100	R
17/10/2013	2	16:45	17:30	Inshore	40	C / F / R
17/10/2013	3	07:00	07:45		20	
17/10/2013	4	07:00	07:45	Inshore	20	C
17/10/2013	6	15:45	16:30		4	R
17/10/2013	7	14:15	15:00	Onshore	4	F
17/10/2013	8	12:45	13:30	Inshore	20	R
17/10/2013	9	11:15	12:00	Inshore	20	C
17/10/2013	13	13:45	14:30	Onshore	8	C
17/10/2013	14	12:45	13:30	Inshore	10	F
17/10/2013	15	11:45	12:25		3	C
18/10/2013	15	06:45	07:30	Inshore	20	R
31/10/2013	1	11:40	12:25		3	C
31/10/2013	2	09:45	10:30	Inshore	13	C / F
31/10/2013	3	08:40	09:25	Inshore/onshore	13	C
31/10/2013	4	15:15	16:00	Inshore	4	C

Herring gull - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
31/10/2013	5	14:00	14:45	Inshore	2	C
31/10/2013	6	12:30	13:15	Onshore	4	C
31/10/2013	7	11:15	12:00	Inshore	4	C
31/10/2013	7	16:20	16:50	Inshore	3	C
31/10/2013	8	10:10	10:45	Inshore	4	R
31/10/2013	9	08:30	09:15	Inshore	4	C
31/10/2013	13	12:40	13:25	Inshore	4	C
31/10/2013	14	13:35	14:20	Inshore	3	C
31/10/2013	15	14:55	15:40	Inshore	7	C
01/11/2013	7	06:35	07:30	Inshore	11	C / F
01/11/2013	6	06:30	07:30	Inshore	5	C
12/11/2013	1	12:45	13:30	Inshore	6	C / R
12/11/2013	2	13:40	12:25	Inshore	40	F
12/11/2013	3	14:35:00	15:20	Inshore	40	R
12/11/2013	4	15:45	16:30	Inshore	80	R
12/11/2013	5	15:40	16:25	Inshore	50	R / C
12/11/2013	6	07:25	08:10	Onshore	12	C
12/11/2013	7	07:25	08:10	Inshore	11	F
12/11/2013	8	14:35	15:20	Inshore/onshore	52	R / C
12/11/2013	9	13:25	14:05	Inshore	12	C
12/11/2013	10	12:05	12:50	Onshore	4	C
12/11/2013	11	10:50	11:35	Inshore	14	C
12/11/2013	12	09:20	10:05	Onshore	7	C
12/11/2013	13	11:10	11:55	Inshore	8	C
12/11/2013	14	10:15	11:00	Inshore	8	C
12/11/2013	15	09:10	09:55	Inshore	25	C / F
13/11/2013	4	06:50	07:40	Inshore	~60	C / F
13/11/2013	5	06:45	07:30	Inshore	50	C

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Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
26/11/2013	1	11:30	12:15	Inshore	5	F
26/11/2013	2	13:25	14:10	Inshore	c100	F
26/11/2013	3	14:20	15:05	Inshore/onshore	60	F
26/11/2013	5	07:00	07:45	Inshore	120	C / F
26/11/2013	6	15:20	16:05	Inshore	c120	C / F / R
26/11/2013	8	15:15	16:00	Inshore	15	R
26/11/2013	9	14:00	14:45	Inshore	20	R
26/11/2013	10	12:45	13:30	Inshore	2	R
26/11/2013	11	11:15	12:00		1	
26/11/2013	12	09:30	10:15	Inshore	10	F / R
26/11/2013	13	10:30	11:15	Inshore	10	F
26/11/2013	14	09:30	10:15	Inshore	30	C / F
26/11/2013	15	08:25	09:10	Inshore	40	C / F
27/11/2013	6	07:00	07:45	Inshore/onshore	100	C / F / R
27/11/2013	7	07:00	07:45	Onshore	20	R
05/12/2013	2	07:30	08:15		70	F
05/12/2013	3	07:30	08:15	Inshore/onshore	80	F / R
05/12/2013	4	08:45	09:30	Inshore	10	F
05/12/2013	5	09:55	10:40	Inshore	15	F
05/12/2013	7	11:50	12:35		5	R / F
05/12/2013	8	12:50	13:35	Onshore	20	R / F
05/12/2013	9	13:50	14:35	Onshore	20	R / F
05/12/2013	13	11:15	12:00	Inshore	10	C
05/12/2013	14	10:15	11:00	Inshore	10	C
05/12/2013	15	09:00	09:45	Inshore	10	C
06/12/2013	14	08:15	09:00	Inshore	10	C
06/12/2013	15	08:15	09:00	Inshore/onshore	15	F
16/12/2013	2	15:00	15:45	Inshore	50	F

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Herring gull - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
17/12/2013	1	08:15	09:00	Inshore	20	F / C / R
17/12/2013	2	07:15	08:00	Inshore	50	F / C / R
17/12/2013	3	07:15	08:00	Onshore	40	R
17/12/2013	5	15:30	16:15	Inshore	10	C
17/12/2013	6	14:30	15:15	Inshore	6	F
17/12/2013	8	13:15	14:00	Onshore	15	F
17/12/2013	9	13:30	14:15	Inshore	4	F
17/12/2013	10	12:15	13:00	Inshore	4	C
17/12/2013	13	09:55	10:40	Inshore	25	F / C
17/12/2013	14	11:00	11:45	Inshore	15	F
17/12/2013	15	12:00	12:45	Onshore	10	F / C
08/01/2014	8	15:00	16:00	Inshore	10	R
09/01/2014	1	13:15	14:00	Inshore	4	F
09/01/2014	2	14:30	15:15	Inshore	20	F
09/01/2014	3	13:45	14:30	Inshore	45	F
09/01/2014	20	12:45	13:30	Inshore	20	C
09/01/2014	5	11:30	12:15	Inshore	15	F / C
09/01/2014	6	10:20	11:05	Inshore	15	R / C
09/01/2014	9	07:15	08:00	Inshore	25	C
09/01/2014	13	12:15	13:00	Inshore	4	F
22/01/2014	3	15:30	16:30	Inshore	45	R / F
23/01/2014	2	06:45	07:45	Inshore	100	F
23/01/2014	3	06:45	07:45	Inshore	50	C / F /
23/01/2014	5	15:45	16:30	onshore/Inshore	55	C / R
23/01/2014	7	14:25	15:30		4	F
23/01/2014	6	14:45	15:30	onshore/Inshore	20	R
23/01/2014	9	13:25	14:10	onshore/Inshore	15	R
23/01/2014	11	10:50	11:35	Onshore	15	C

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Herring gull - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
23/01/2014	12	09:20	10:05	Inshore	30	C
03/02/2014	6	15:50	16:35	Inshore	15	R
03/02/2014	7	15:50	16:35	Inshore	80	C
04/02/2014	1	11:30	12:15	Inshore	7	C
04/02/2014	2	12:50	13:35	Inshore	17	C
04/02/2014	3	13:40	14:25	Inshore	7	C
04/02/2014	4	14:40	15:25	Inshore	35	C / R
04/02/2014	5	16:00	16:45	Inshore	10	F / C
04/02/2014	6	07:20	08:05	Inshore	20	F / C
04/02/2014	7	07:20	08:05	Inshore	5	C
04/02/2014	8	14:30	15:15	Onshore	20	F
04/02/2014	9	13:20	14:05	Onshore	25	F
04/02/2014	10	12:00	12:45	Inshore	10	C / F
04/02/2014	12	09:20	10:05	Inshore	2	F
04/02/2014	13	10:40	11:25	Inshore	3	C
04/02/2014	14	09:45	10:30	Inshore	10	C
04/02/2014	15	08:30	09:15	Inshore	10	C
20/02/2014	1	10:55	11:40	Inshore	16	C
20/02/2014	2	12:10	12:55	Inshore	16	C / F
20/02/2014	3	13:20	14:05	Inshore/onshore	30	R / C
20/02/2014	4	14:30	15:15	Inshore/onshore	9	C
20/02/2014	5	07:15	08:00	Inshore	15	F / C
20/02/2014	6	07:15	08:00	Inshore/onshore	8	C
20/02/2014	7	15:50	16:35	Inshore	5	C
20/02/2014	8	14:40	15:35	Onshore	20	F
20/02/2014	9	13:30	14:15	Inshore/onshore	40	F
20/02/2014	10	12:15	13:00		6	C
20/02/2014	11	11:00	11:45	Inshore	10	F

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Herring gull - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
20/02/2014	13	09:30	10:15	Inshore	18	C
20/02/2014	15	17:00	17:45	Inshore	100	R / C
21/02/2014	14	06:30	07:15	Inshore	50	C
21/02/2014	15	06:30	07:15	Inshore	16	C
05/03/2014	6	17:15	18:00	Inshore	5	C
06/03/2014	2	12:45	13:30	Inshore	50	F / R
06/03/2014	3	12:40	13:25	Inshore	20	F / R
06/03/2014	4	13:45	14:30	Inshore	5	C / R
06/03/2014	6	06:15	07:00	Inshore	20	C
06/03/2014	6	13:45	14:30	Inshore/onshore	30	C / R
06/03/2014	9	12:30	13:15	Inshore/onshore	4	C / R
06/03/2014	10	11:15	12:00	Inshore	7	C
06/03/2014	11	10:05	10:50	Inshore	4	C
06/03/2014	12	08:50	09:35	Inshore	20	C
06/03/2014	13	10:30	11:15	Inshore	15	C
06/03/2014	14	09:25	10:10	Inshore	5	C
18/03/2014	5	17:40	18:25	Inshore	10	F / R / C
18/03/2014	4	17:45	18:30	Inshore	180	R / C
19/03/2014	10	09:50	10:35	Inshore	10	C / R
19/03/2014	2	08:00	08:45	Inshore	50	F / C
19/03/2014	3	07:00	07:45	Inshore	150	C / R
19/03/2014	4	05:50	06:35	Inshore	300	R / C
19/03/2014	5	05:45	06:30	Inshore	40	F / C
19/03/2014	6	06:45	07:30	Inshore	20	F / C
19/03/2014	7	14:25	15:10	Inshore	15	C
19/03/2014	8	14:15	15:00	Inshore / Onshore	25	F
19/03/2014	9	13:00	13:45	Inshore / Onshore	20	R / F
19/03/2014	11	10:25	11:10	Inshore	40	F

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Herring gull - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
19/03/2014	12	09:00	09:45	Inshore	25	F / C
19/03/2014	13	11:00	11:45	Inshore	40	C
19/03/2014	14	11:50	12:35		15	C
19/03/2014	15	13:00	13:45	Inshore	30	C

Table 23: Kittiwake - Wintering VP surveys results (October 2013 to March 2014)

Kittiwake - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
06/03/2014	2	12:45	13:30	Inshore	40	F / R
06/03/2014	3	12:40	13:25	Inshore	60	F /
06/03/2014	5	13:50	14:35	Inshore	25	C / F
18/03/2014	4	17:45	18:30	Inshore	25	C to N
18/03/2014	5	17:40	18:25	Inshore	6	C to N
19/03/2014	2	08:00	08:45	Inshore	40	R / C
19/03/2014	3	07:00	07:45	Inshore	100	R / C
19/03/2014	4	05:50	06:35	Inshore	60	C
19/03/2014	5	05:45	06:30	Inshore	5	F / C

Table 24: Lapwing - Wintering VP surveys results (October 2013 to March 2014)

Lapwing - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
26/11/2013	1	11:30	12:15	Onshore	1	
17/12/2013	15	12:00	12:45	Onshore	7	F

Table 25: Lesser black-backed gull - Wintering VP surveys results (October 2013 to March 2014)

Lesser black-backed gull - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
17/10/2013	2	16:45	17:30	Inshore	2	R
17/10/2013	3	07:00	07:45		2	
17/10/2013	5	17:00	17:45	Inshore	10	R
26/11/2013	1	11:30	12:15	Inshore	3	F
26/11/2013	2	13:25	14:10	Inshore	c100	F
26/11/2013	3	14:20	15:05	Inshore/onshore	25	F
26/11/2013	5	07:00	07:45	Inshore	60	C / F
26/11/2013	6	15:20	16:05	Inshore	c80	C / F / R
26/11/2013	8	15:15	16:00	Inshore	2	R
26/11/2013	9	14:00	14:45	Inshore	4	C
26/11/2013	13	10:30	11:15	Inshore	6	F
26/11/2013	14	09:30	10:15	Inshore	10	C / F
05/12/2013	1	13:15	14:00	Inshore	10	C
05/12/2013	3	07:30	08:15	Inshore/onshore	50	F / R
05/12/2013	4	08:45	09:30	Inshore	10	F
05/12/2013	6	11:00	11:45	Inshore	10	F

Lesser black-backed gull - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
05/12/2013	9	13:50	14:35	Inshore/onshore	30	F / R
05/12/2013	14	10:15	11:00	Inshore	10	C
06/12/2013	14	08:15	09:00	Inshore	10	C
06/12/2013	2	15:00	15:45	Inshore	60	F
17/12/2013	1	08:15	09:00	Inshore	25	F / C / R
17/12/2013	2	07:15	08:00	Inshore	50	F / C / R
17/12/2013	13	09:55	10:40	Inshore	25	F / C
09/01/2014	3	13:45	14:30	Inshore	20	F
09/01/2014	4	12:45	13:30	Inshore	15	C
09/01/2014	5	11:30	12:15	Inshore	10	F / C
09/01/2014	7	09:25	10:10	Inshore	10	C
22/01/2014	3	15:30	16:30	Inshore	30	R / F
23/01/2014	3	06:45	07:45	Inshore	30	C / R
23/01/2014	7	14:25	15:30		4	R
23/01/2014	6	14:45	15:30	Onshore	12	R
23/01/2014	10	12:00	12:45	Inshore	30	F / C
23/01/2014	11	10:50	11:35	Inshore/onshore	44	R / F
03/02/2014	7	15:50	16:35	Inshore	12	C
04/02/2014	2	12:50	13:35	Inshore	20	C
04/02/2014	3	13:40	14:25	Inshore	4	C
04/02/2014	8	14:30	15:15	Onshore	10	F
04/02/2014	11	10:35	11:20	Inshore	5	C / F
04/02/2014	14	09:45	10:30	Inshore	2	C
04/02/2014	15	08:30	09:15	Inshore	5	C
20/02/2014	5	07:15	08:00	Inshore/onshore	10	F / C
20/02/2014	6	07:15	08:00	Inshore	4	C
20/02/2014	11	11:00	11:45	Inshore/onshore	25	F

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Lesser black-backed gull - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
20/02/2014	12	09:15	10:00	Inshore	20	F / C
20/02/2014	15	17:00	17:45	Inshore	100	R / C
05/03/2014	6	17:15	18:00	Inshore	5	C
05/03/2014	7	17:10	17:55	Inshore	30	R
06/03/2014	1	10:35	11:20	Inshore	15	F
06/03/2014	2	12:45	13:30	Inshore	70	F / R
06/03/2014	3	12:40	13:25	Inshore	15	F / R
06/03/2014	4	13:45	14:30	Inshore	10	C / R
06/03/2014	5	13:50	14:35	Inshore	40	C
06/03/2014	7	06:15	07:00	Inshore	40	C to S / F
06/03/2014	12	08:50	09:35	Inshore	7	C
06/03/2014	13	10:30	11:15	Inshore	15	C
06/03/2014	14	09:25	10:10	Inshore	30	C
06/03/2014	15	08:25	09:10	Inshore	70	R / F
18/03/2014	4	17:45	18:30	Inshore	40	R / C
19/03/2014	1	09:50	10:35	Inshore	20	C
19/03/2014	2	08:00	08:45	Inshore	90	F / C
19/03/2014	3	07:00	07:45	inshore	140	C / R
19/03/2014	4	05:50	06:35	Inshore	150	C / R
19/03/2014	5	05:45	06:30	Inshore	15	F / C
19/03/2014	8	14:15	15:00	Inshore / onshore	10	F
19/03/2014	9	13:00	13:45	Inshore / onshore	30	R / F
19/03/2014	10	11:40	12:25	Inshore	60	F / C
19/03/2014	11	10:25	11:10	Inshore	60	F / C
19/03/2014	12	09:00	09:45	Inshore	25	F / C
19/03/2014	13	11:00	11:45	Inshore	10	C / R
19/03/2014	14	11:50	12:35		15	C

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Table 26: Long-tailed duck - Wintering VP surveys results (October 2013 to March 2014)

Long-tailed duck - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/11/2013	9	13:25	14:05	Inshore	2	Swim

Table 27: Little gull - Wintering VP surveys results (October 2013 to March 2014)

Little gull - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
26/11/2013	3	14:20	15:05	Inshore/onshore	4	F

Table 28: Mallard - Wintering VP surveys results (October 2013 to March 2014)

Mallard - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
17/10/2013	4	07:00	07:45	Inshore	4	C
06/03/2014	6	06:15	07:00	Onshore	5	C
06/03/2014	7	06:15	07:00	Inshore	2	C to S
19/03/2014	2	11:00	11:45	Inshore	2	C

Table 29: Mute swan - Wintering VP surveys results (October 2013 to March 2014)

Mute swan - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/11/2013	8	14:35	15:20	Inshore/onshore	1	C
12/11/2013	11	10:50	11:35	Inshore	3	C

Table 30: Great skua - Wintering VP surveys results (October 2013 to March 2014)

Great skua - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
05/12/2013	13	11:15	12:00	Inshore	1	C
05/12/2013	15	09:00	09:45	Inshore	1	C

Table 31: Oystercatcher - Wintering VP surveys results (October 2013 to March 2014)

Oystercatcher - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
06/03/2014	12	08:50	09:35	Inshore	2	C
19/03/2014	15	13:00	13:45	Inshore	1	C

Table 32: Pintail - Wintering VP surveys results (October 2013 to March 2014)

Pintail - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
08/01/2014	8	15:00	16:00	Inshore	50	R

Table 33: Redshank - Wintering VP surveys results (October 2013 to March 2014)

Redshank - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/11/2013	6	07:25	08:10	Inshore	6	C
26/11/2013	11	11:15	12:00		1	

Table 34: Ringed plover - Wintering VP surveys results (October 2013 to March 2014)

Ringed plover - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
17/10/2013	7	14:15	15:00	Onshore	20	C
17/10/2013	8	12:45	13:30	Inshore	20	C

Table 35: Shelduck - Wintering VP surveys results (October 2013 to March 2014)

Shelduck - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
31/10/2013	3	08:40	09:25		1	C
31/10/2013	9	08:30	09:15	Inshore	6	
31/10/2013	14	13:35	14:20	Inshore	4	C
12/11/2013	8	14:35	15:20	Inshore	2	C
17/12/2013	15	12:00	12:45	Inshore	3	C to S
09/01/2014	4	12:45	13:30	Inshore	3	C
09/01/2014	7	09:25	10:10	Inshore	2	C
04/02/2014	6	07:20	08:05	Inshore	7	C
20/02/2014	2	12:10	12:55	Inshore	5	C
21/02/2014	14	06:30	07:15	Inshore	1	C
19/03/2014	4	05:50	06:35	Inshore	3	C to S

Table 36: Shoveler - Wintering VP surveys results (October 2013 to March 2014)

Shoveler - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
05/12/2013	13	11:15	12:00	Inshore	6	C
06/03/2014	6	06:15	07:00	Inshore	1	C

Table 37: Shorelark - Wintering VP surveys results (October 2013 to March 2014)

Shorelark - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
05/12/2013	3	07:30	08:15	Inshore	25	
05/12/2013	8	12:50	13:35	Inshore	25	
23/01/2014	3	06:45	07:45	Inshore	25	

Table 38: Teal - Wintering VP surveys results (October 2013 to March 2014)

Teal - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/11/2013	1	12:45	13:30	Inshore	3	R
12/11/2013	13	11:10	11:55	Inshore	10	C

Table 39: Turnstone - Wintering VP surveys results (October 2013 to March 2014)

Turnstone - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
17/10/2013	7	14:15	15:00	Onshore	2	F
17/10/2013	8	12:45	13:30	Inshore	40	C
31/10/2013	7	11:15	12:00	Onshore	2	F
31/10/2013	9	08:30	09:15	Onshore	4	F
01/11/2013	7	06:35	07:30	Onshore	3	F
26/11/2013	8	15:15	16:00	Inshore	10	C
05/12/2013	9	13:50	14:35	Onshore	20	F

Turnstone - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
17/12/2013	3	07:15	08:00	Onshore	1	R
17/12/2013	10	12:15	13:00	Inshore	10	C
17/12/2013	20	11:00	11:45	Inshore	40	C
08/01/2014	9	15:15	16:00	Onshore	6	F
03/02/2014	7	15:50	16:35	Onshore	1	F
04/02/2014	6	07:20	08:05	Inshore	5	C
04/02/2014	9	13:20	14:05	Onshore	4	F
20/02/2014	9	13:30	14:15	Onshore	8	F
20/02/2014	15	17:00	17:45	Inshore	5	C
19/03/2014	8	14:15	15:00	Onshore	1	F

Table 40: Tufted duck - Wintering VP surveys results (October 2013 to March 2014)

Tufted duck - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
06/12/2013	15	08:15	09:00	Inshore	25	C

Table 41: Velvet scoter - Wintering VP surveys results (October 2013 to March 2014)

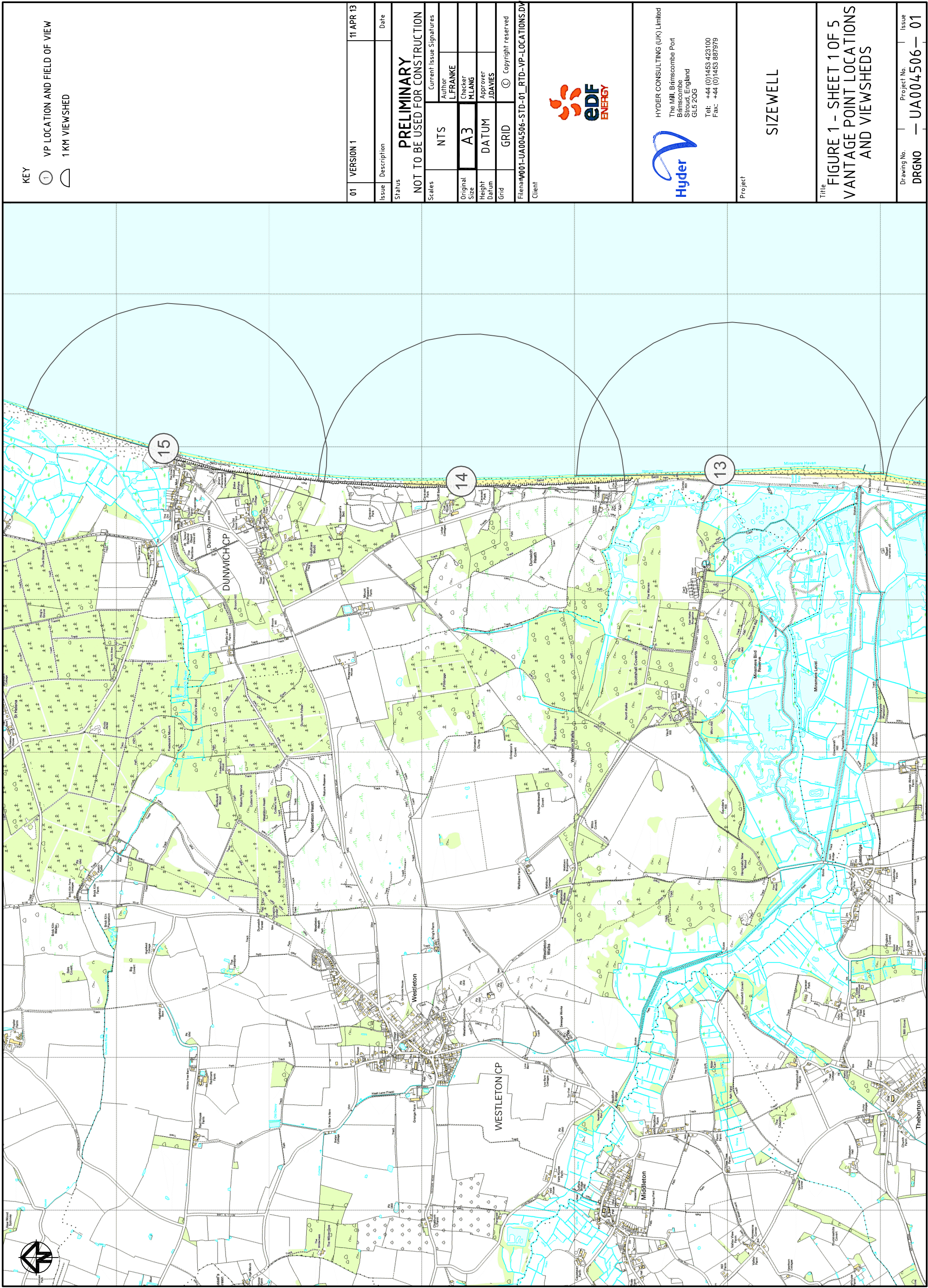
Velvet scoter - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
12/11/2013	1	12:45	13:30	Inshore	1	C
26/11/2013	9	14:00	14:45	Inshore	2	R

Table 42: Wigeon - Wintering VP surveys results (October 2013 to March 2014)

Wigeon - Wintering VP surveys results (October 2013 to March 2014)						
Date	VP	Survey start time	Survey end time	Onshore or inshore waters	Number of Birds	Activity description (Foraging: F, Commuting: C, Resting: R)
17/10/2013	3	07:00	07:45		10	C
31/10/2013	1	11:40	12:25		~15	R
31/10/2013	13	12:40	13:25	Inshore	8	R
01/11/2013	7	06:35	07:30		2	R
12/11/2013	6	07:25	08:10	Inshore	4	C
26/11/2013	1	11:30	12:15	Inshore	30	R
05/12/2013	15	09:00	09:45	Inshore	20	R
23/01/2014	12	09:20	10:05	Inshore	180	R / C

Figures

Figure 1: Vantage Point (VP) Locations and View-sheds



KEY
 ① VP LOCATION AND FIELD OF VIEW
 1 KM VIEWSHED

01	VERSION 1	11 APR 13
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Status
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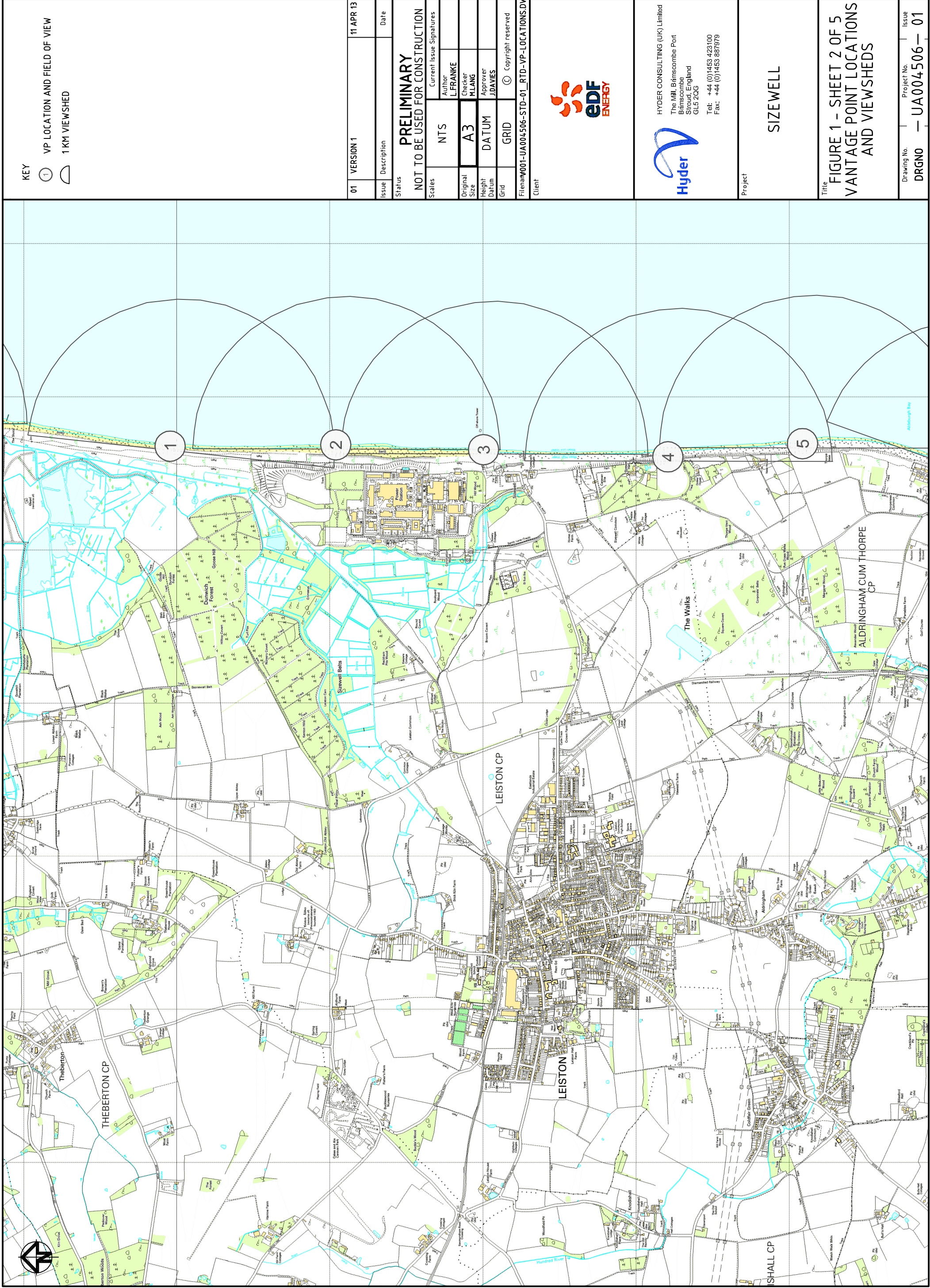
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 VANTAGE POINT LOCATIONS
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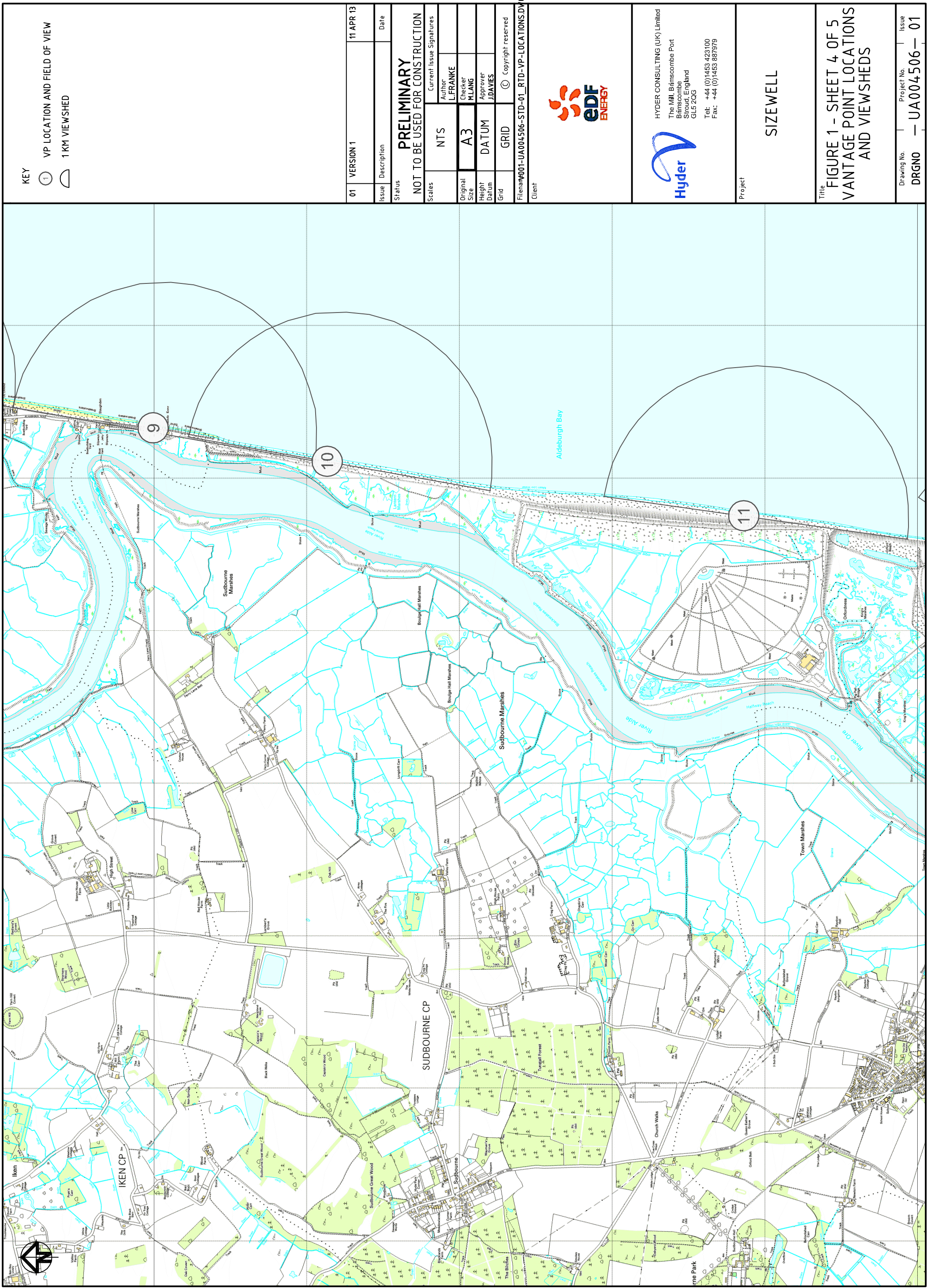
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Project No.	Issue



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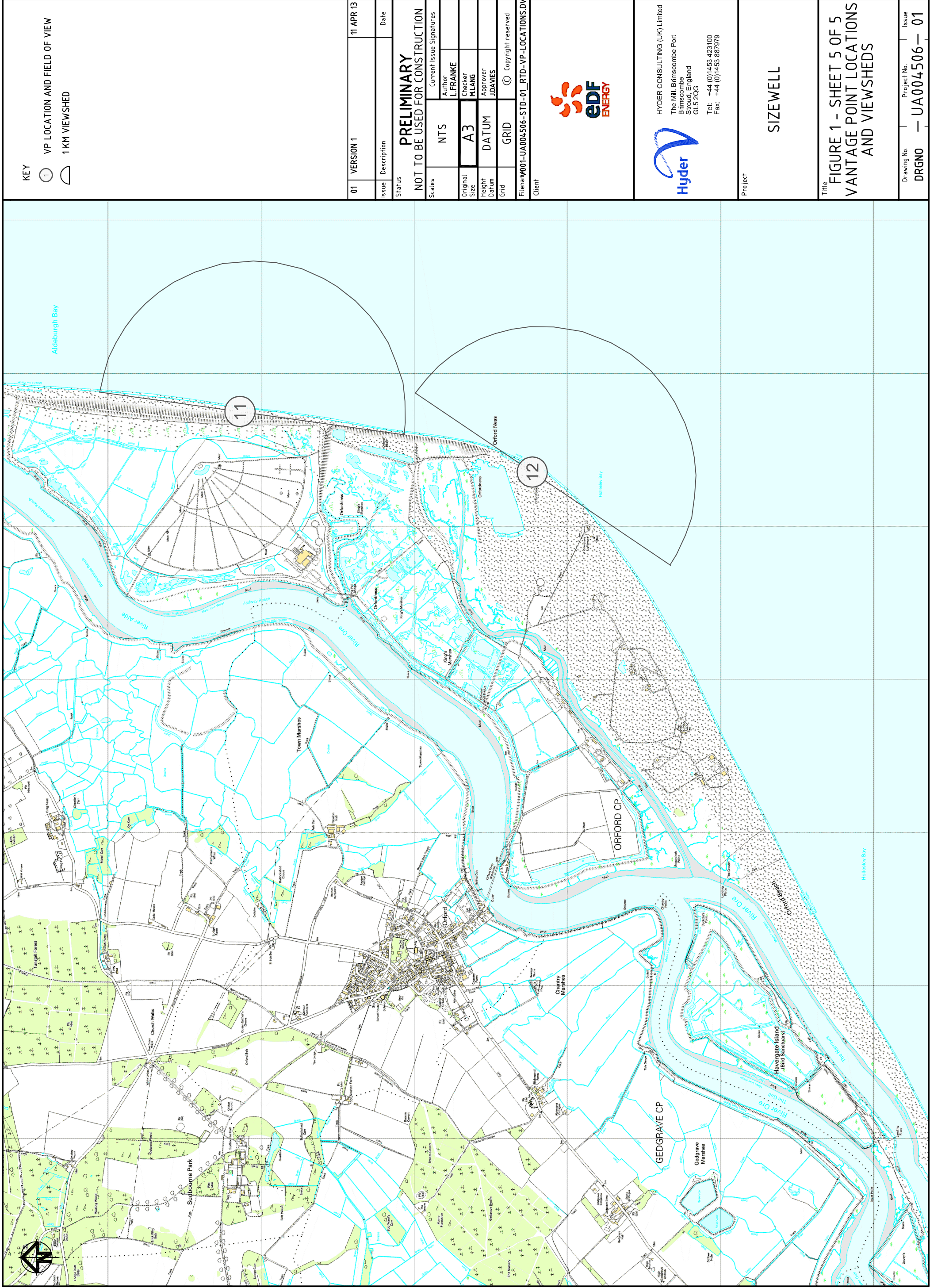
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FIGURE 1 - SHEET 4 OF 5
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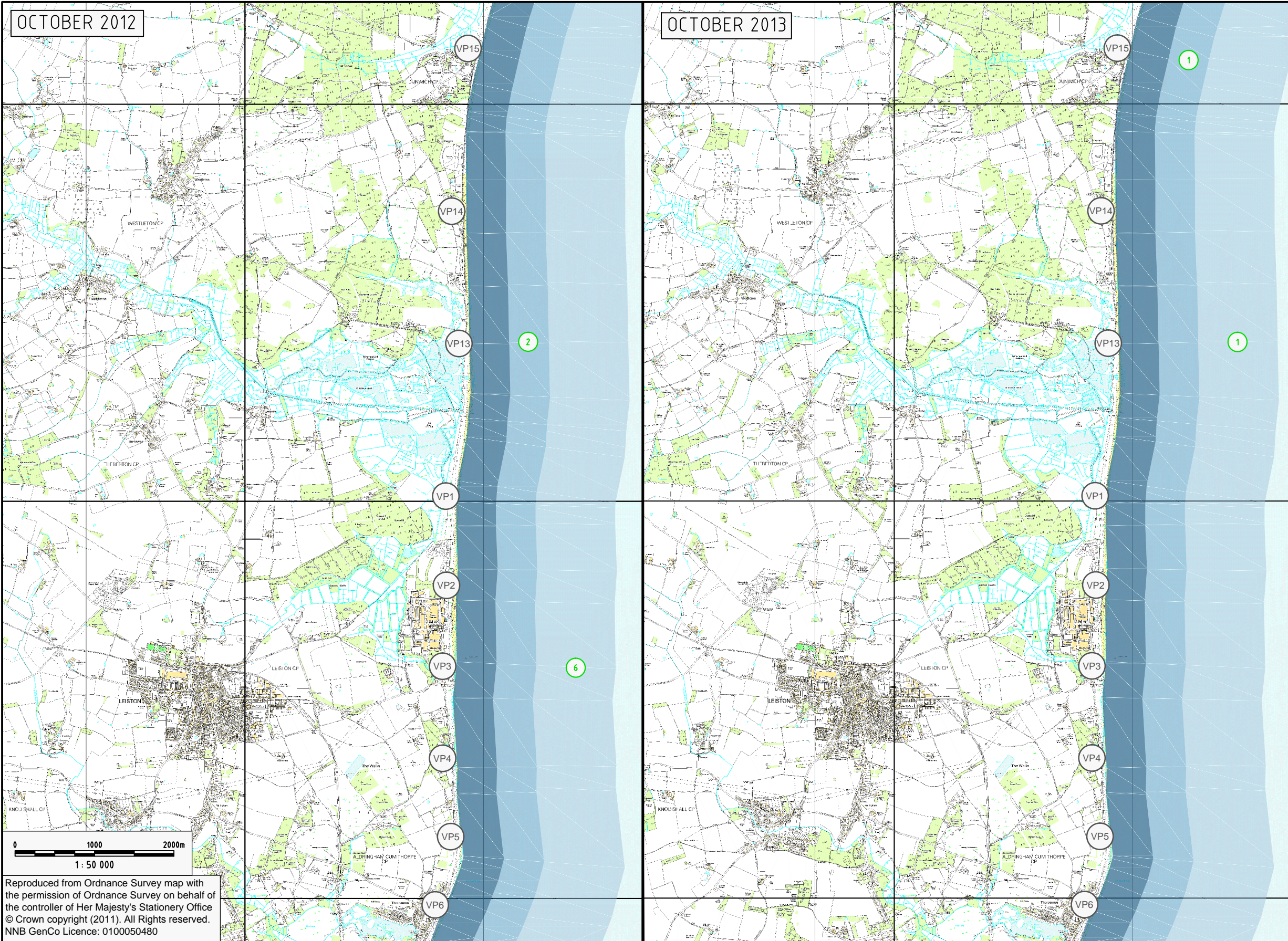
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FIGURE 1 - SHEET 5 OF 5
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Figure 2: Distance from the Coast of Red-throated Diver Observations

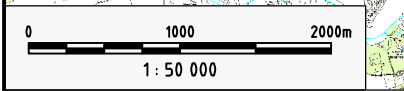


KEY

- VP1 VP LOCATION
- 1 NUMBER OF RED THROATED DIVER OBSERVED DURING FIRST MONTHLY SURVEY VISIT
- 2 NUMBER OF RED THROATED DIVER OBSERVED DURING SECOND MONTHLY SURVEY VISIT

DISTANCE BANDS FROM SHORELINE

- 0 - 500m
- 501 - 1000m
- 1001 - 2000m



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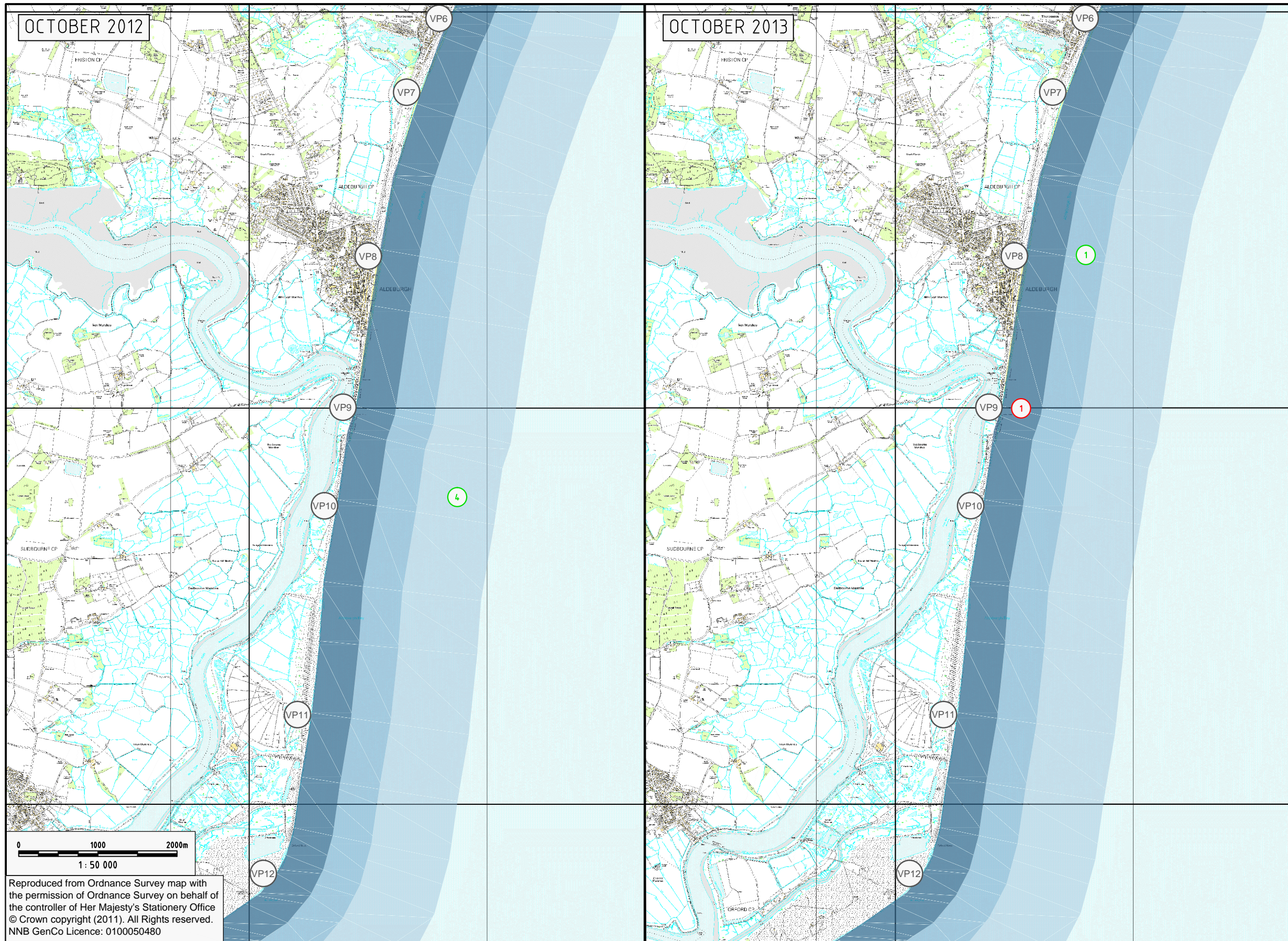
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FIGURE 2: APPROXIMATE DISTRIBUTION OF WINTERING RTD (SHEET 1 OF 12)

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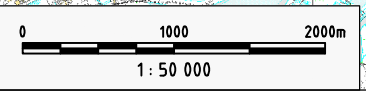


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- VP1 VP LOCATION
- 1 NUMBER OF RED THROATED DIVER OBSERVED DURING FIRST MONTHLY SURVEY VISIT
- 1 NUMBER OF RED THROATED DIVER OBSERVED DURING SECOND MONTHLY SURVEY VISIT

DISTANCE BANDS FROM SHORELINE

- 0 - 500m
- 501 - 1000m
- 1001 - 2000m



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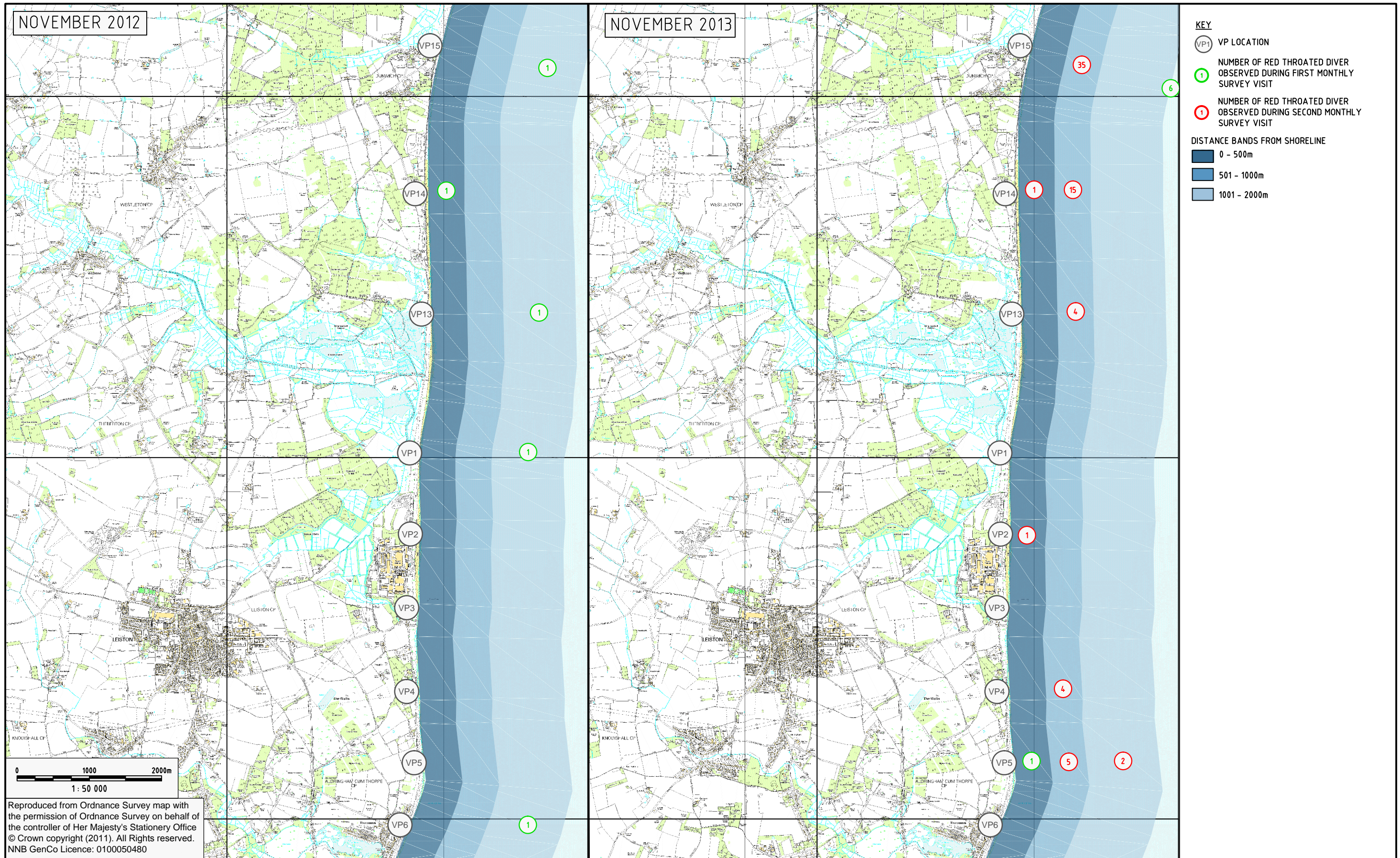
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FIGURE 2: APPROXIMATE DISTRIBUTION OF WINTERING RTD (SHEET 2 OF 12)

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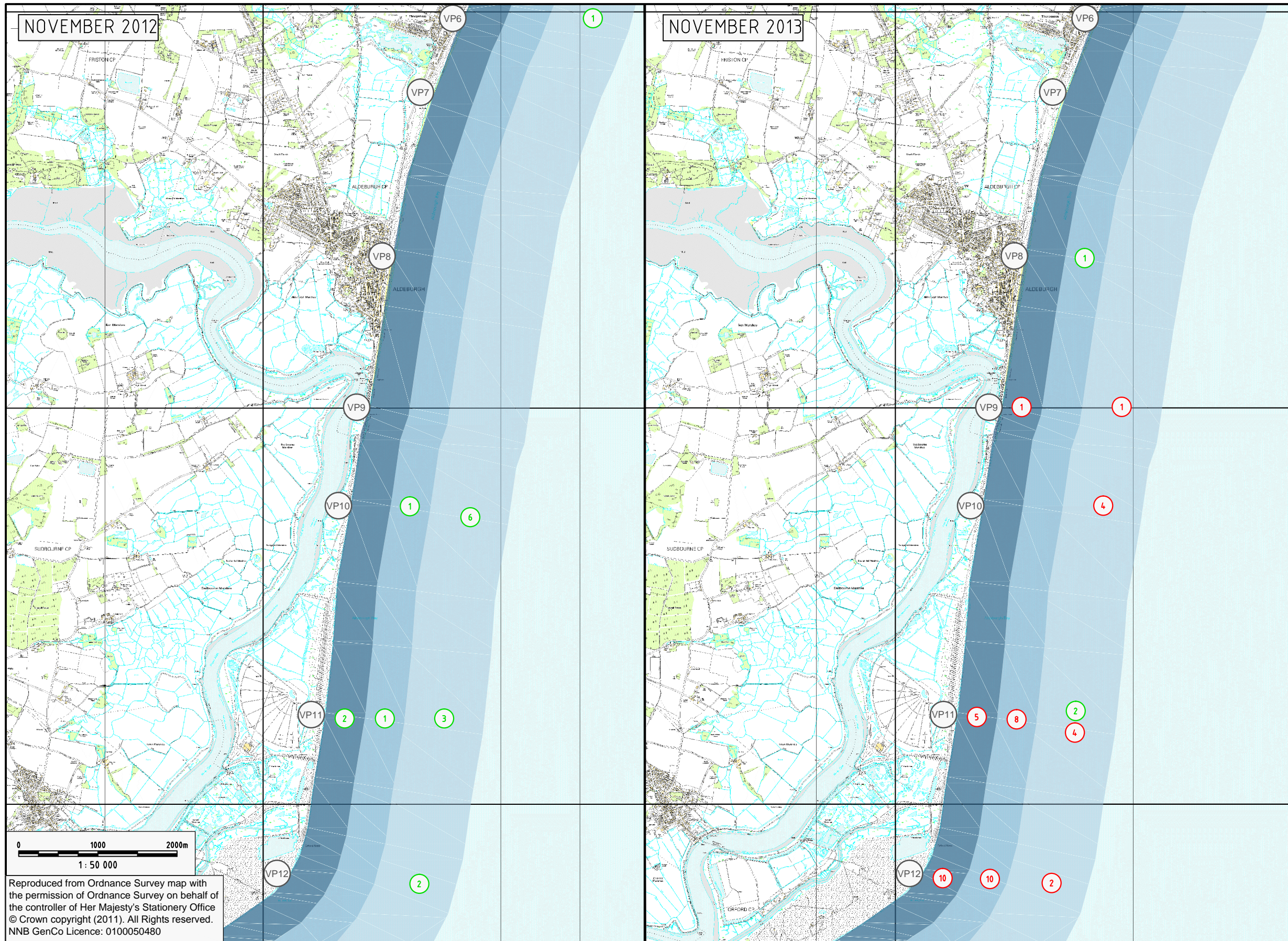
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Project	SIZEWELL
Title	FIGURE 2: APPROXIMATE DISTRIBUTION OF WINTERING RTD (SHEET 3 OF 12)

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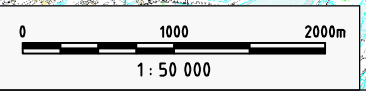


KEY

- VP1 VP LOCATION
- 1 NUMBER OF RED THROATED DIVER OBSERVED DURING FIRST MONTHLY SURVEY VISIT
- 2 NUMBER OF RED THROATED DIVER OBSERVED DURING SECOND MONTHLY SURVEY VISIT

DISTANCE BANDS FROM SHORELINE

- 0 - 500m
- 501 - 1000m
- 1001 - 2000m



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FIGURE 2: APPROXIMATE DISTRIBUTION OF WINTERING RTD (SHEET 4 OF 12)

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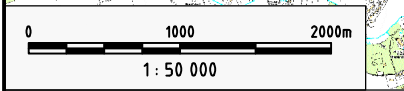


KEY

- VP1 VP LOCATION
- 1 NUMBER OF RED THROATED DIVER OBSERVED DURING FIRST MONTHLY SURVEY VISIT
- 1 NUMBER OF RED THROATED DIVER OBSERVED DURING SECOND MONTHLY SURVEY VISIT

DISTANCE BANDS FROM SHORELINE

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- 501 - 1000m
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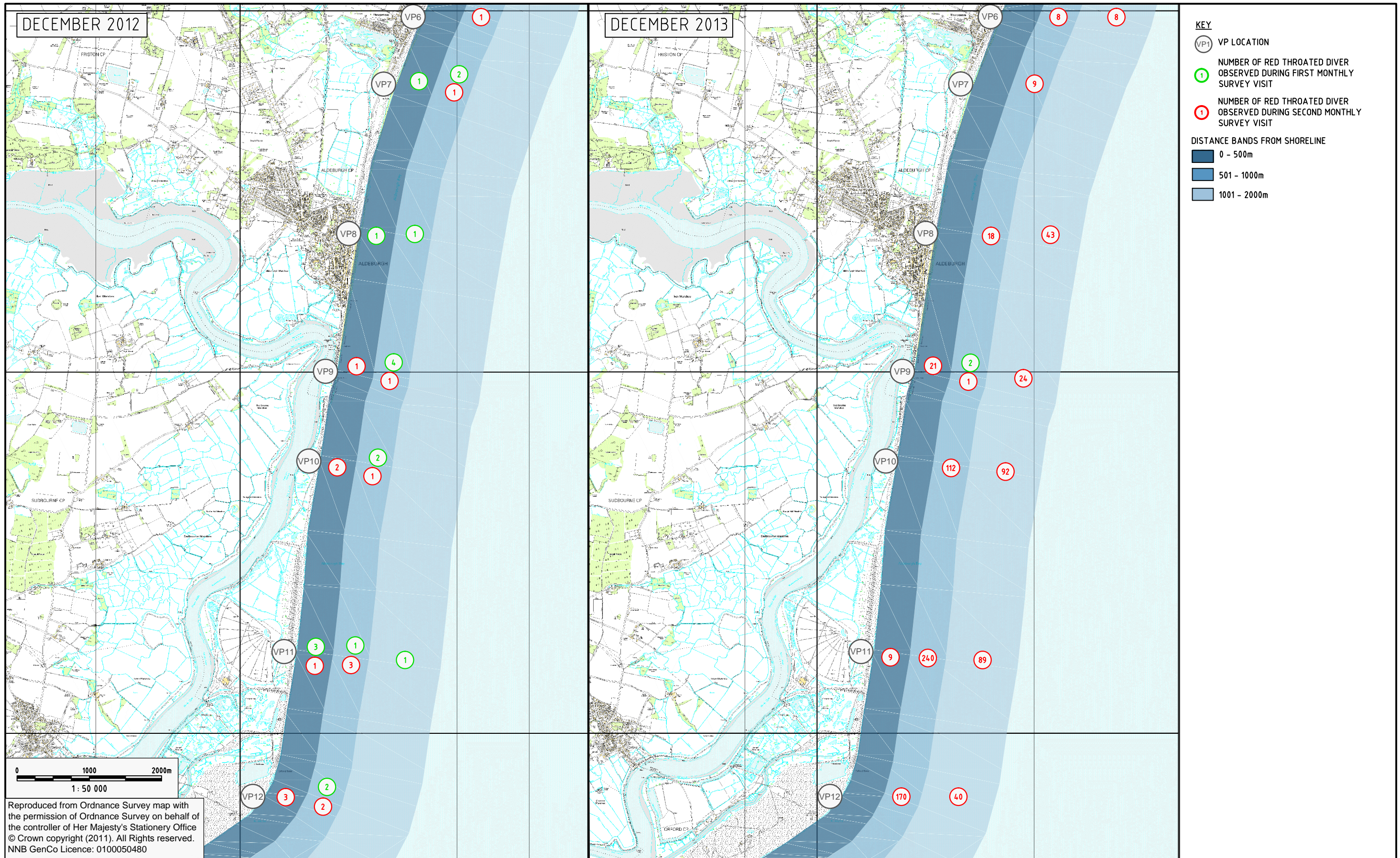
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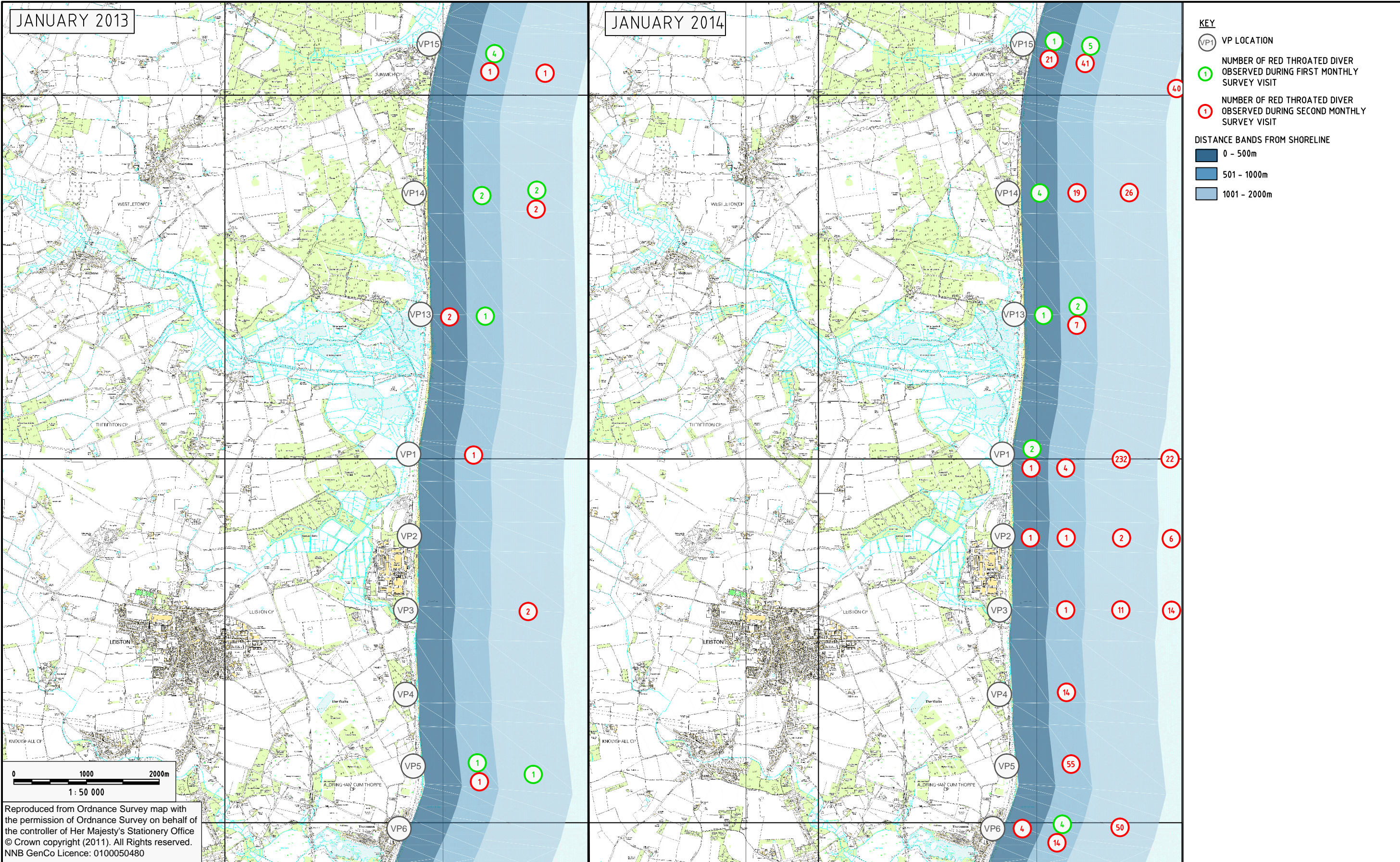
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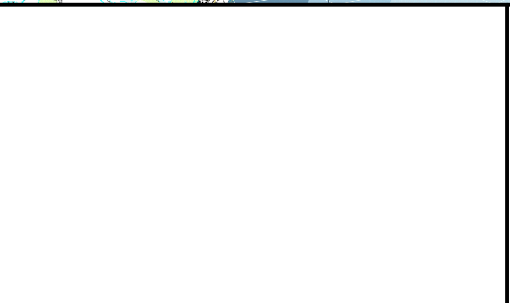


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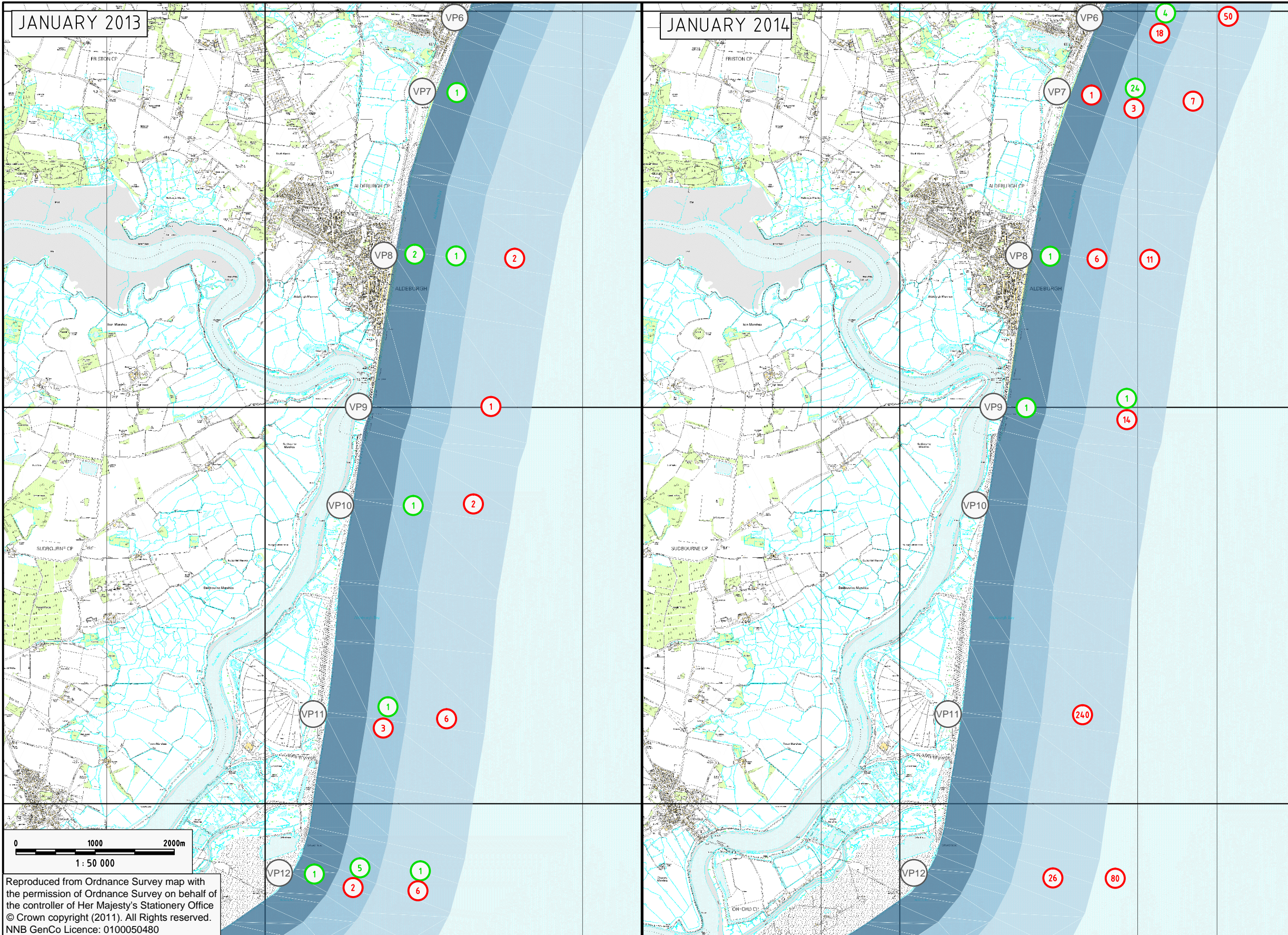


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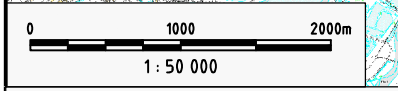


KEY

- VP1 VP LOCATION
- 1 NUMBER OF RED THROATED DIVER OBSERVED DURING FIRST MONTHLY SURVEY VISIT
- 1 NUMBER OF RED THROATED DIVER OBSERVED DURING SECOND MONTHLY SURVEY VISIT

DISTANCE BANDS FROM SHORELINE

- 0 - 500m
- 501 - 1000m
- 1001 - 2000m



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FIGURE 2: APPROXIMATE DISTRIBUTION OF WINTERING RTD (SHEET 8 OF 12)

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KEY

- VP1 VP LOCATION
- 1 NUMBER OF RED THROATED DIVER OBSERVED DURING FIRST MONTHLY SURVEY VISIT
- 2 NUMBER OF RED THROATED DIVER OBSERVED DURING SECOND MONTHLY SURVEY VISIT

DISTANCE BANDS FROM SHORELINE

- 0 - 500m
- 501 - 1000m
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0 1000 2000m
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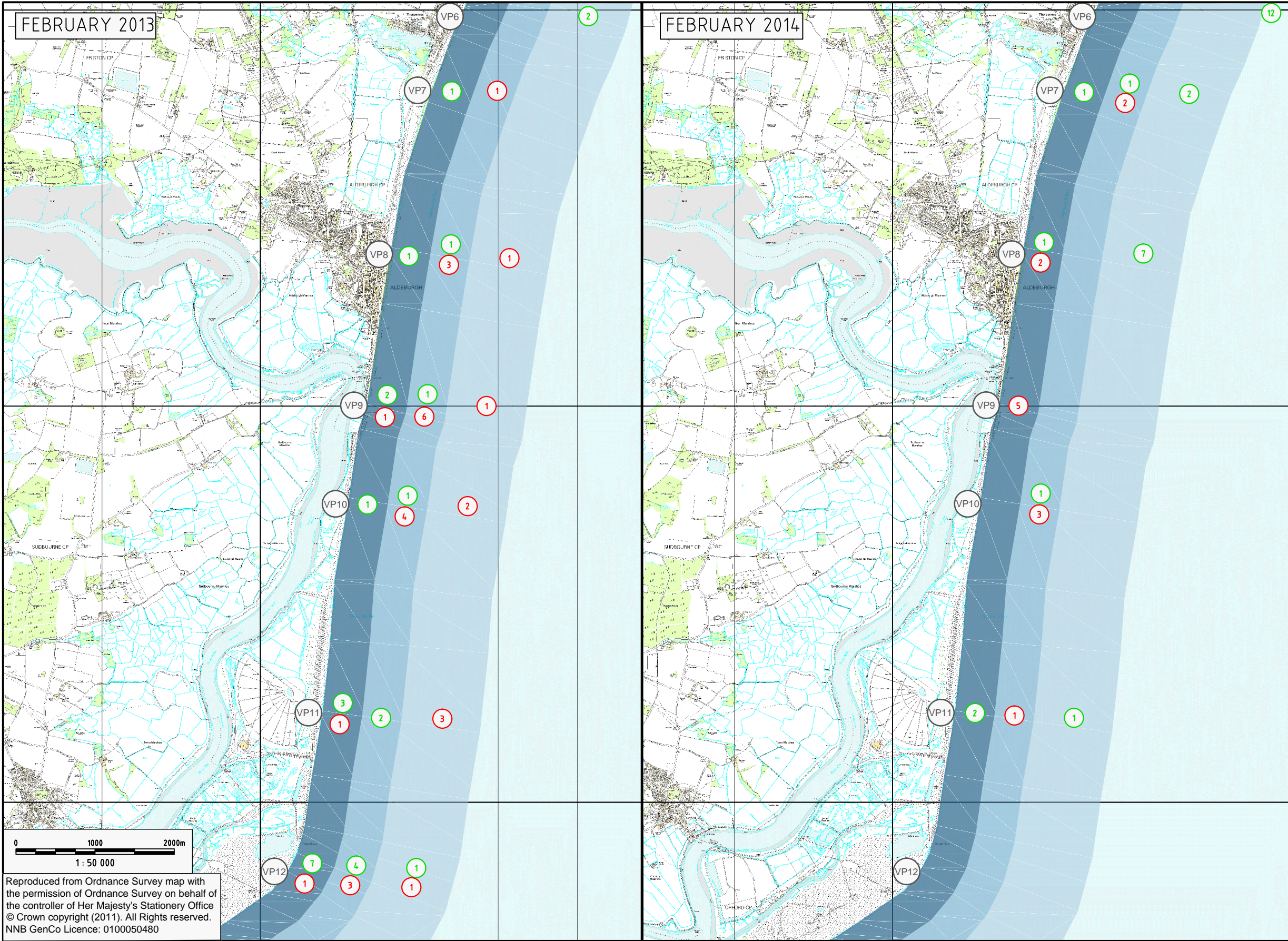
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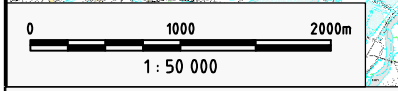


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- VP1 VP LOCATION
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- 2 NUMBER OF RED THROATED DIVER OBSERVED DURING SECOND MONTHLY SURVEY VISIT

DISTANCE BANDS FROM SHORELINE

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- 1001 - 2000m



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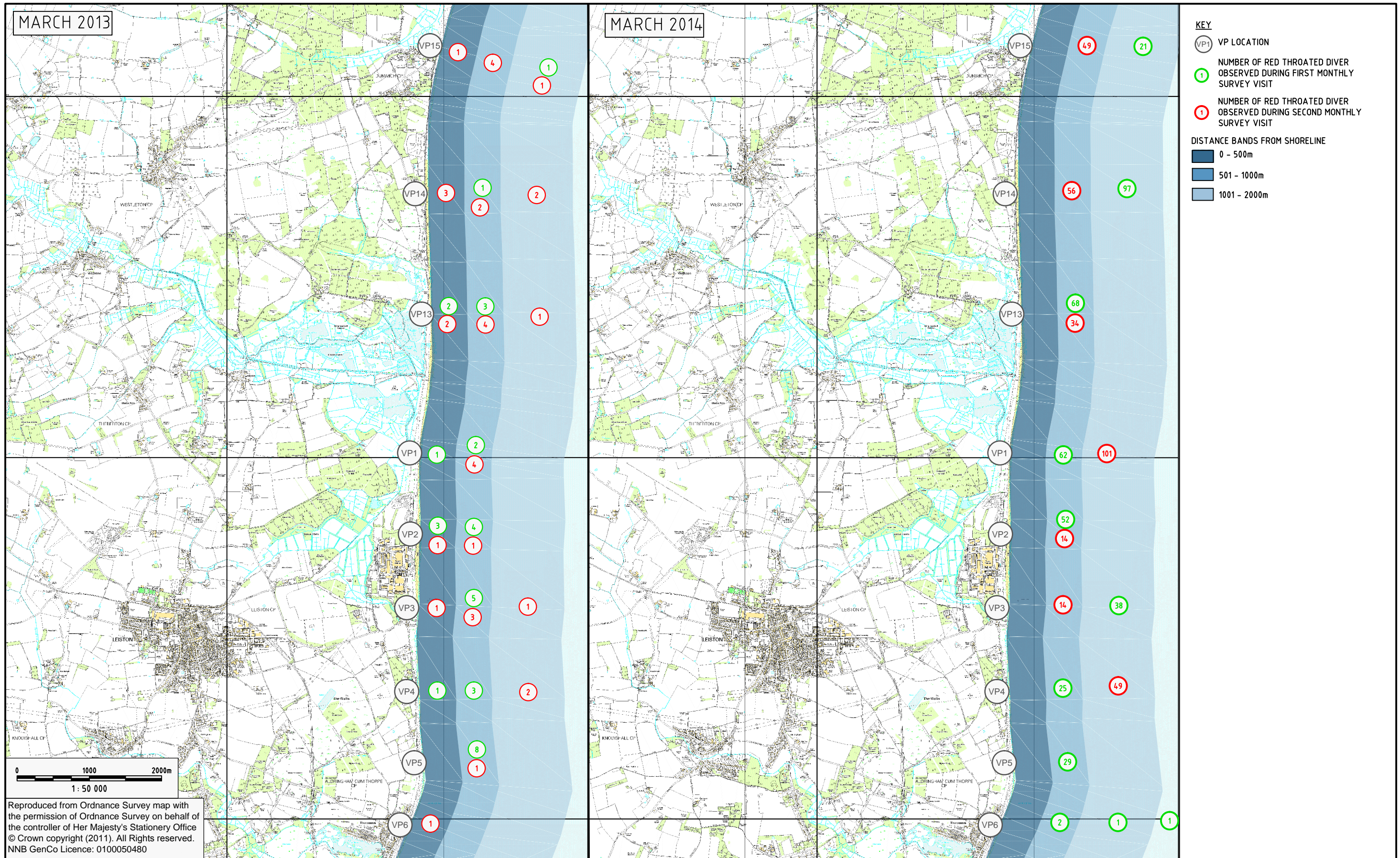
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FIGURE 2: APPROXIMATE DISTRIBUTION OF WINTERING RTD (SHEET 10 OF 12)



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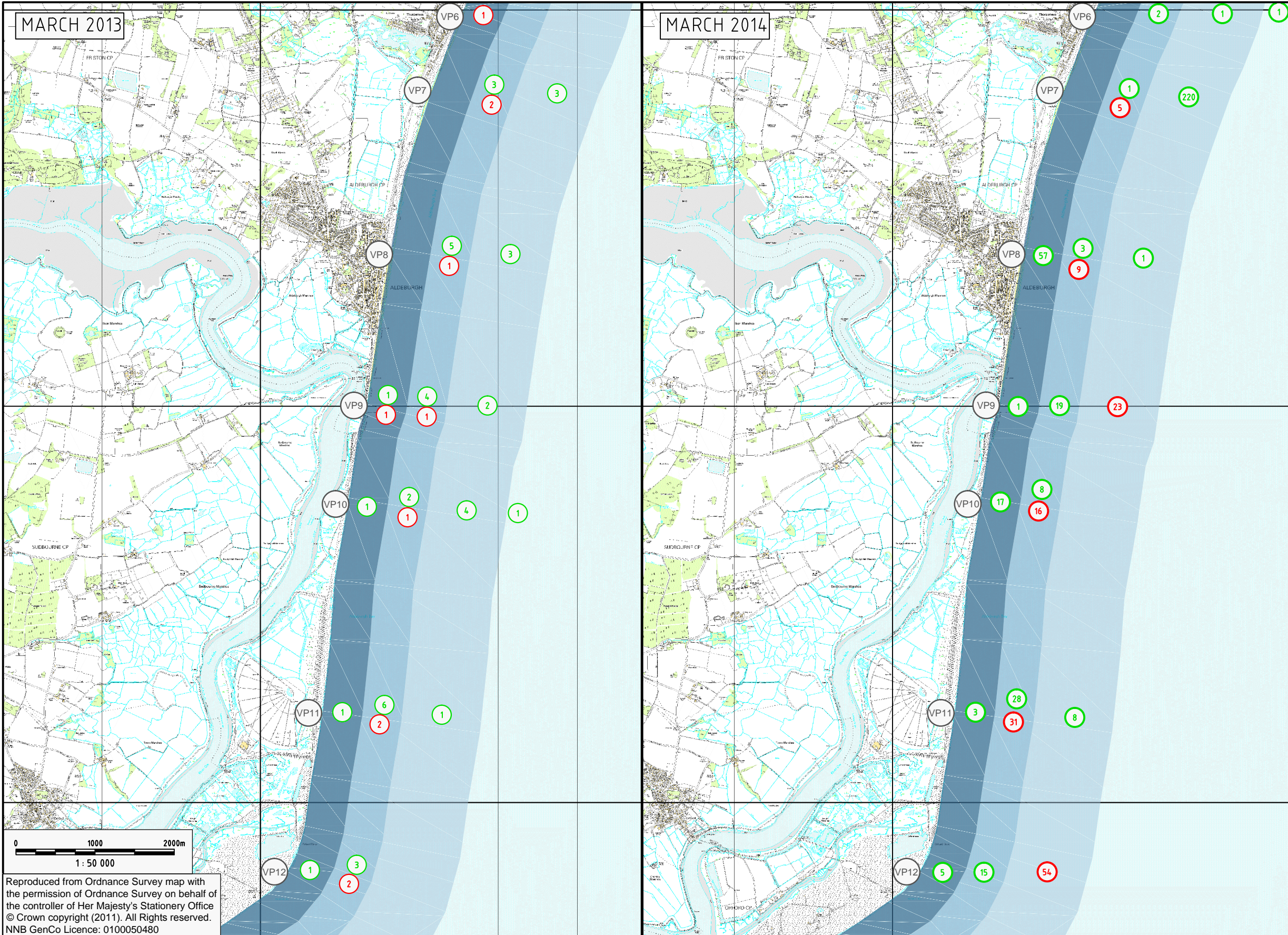
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Title	FIGURE 2: APPROXIMATE DISTRIBUTION OF WINTERING RTD (SHEET 11 OF 12)

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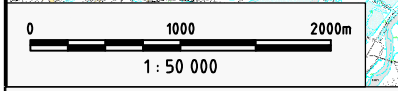


KEY

- VP1 VP LOCATION
- 1 NUMBER OF RED THROATED DIVER OBSERVED DURING FIRST MONTHLY SURVEY VISIT
- 1 NUMBER OF RED THROATED DIVER OBSERVED DURING SECOND MONTHLY SURVEY VISIT

DISTANCE BANDS FROM SHORELINE

- 0 - 500m
- 501 - 1000m
- 1001 - 2000m



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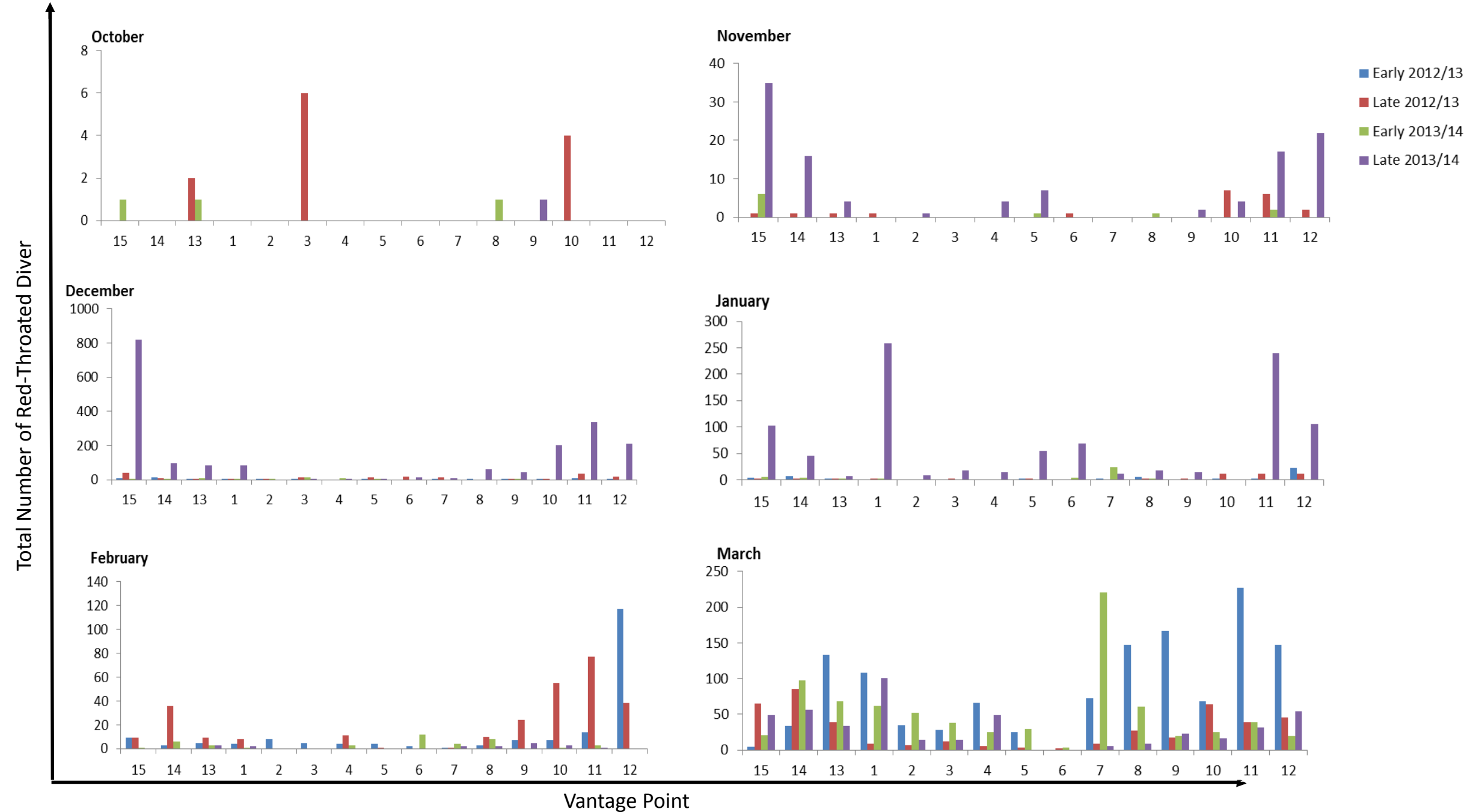
FIGURE 2: APPROXIMATE DISTRIBUTION OF WINTERING RTD (SHEET 12 OF 12)

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Figure 3: Total number of red-throated divers recorded each month, in each survey year.

Figure 3. Total Red-Throated Diver Observations between October and March 2012—2013 and 2012—2014 per VP



2	31/03/14	Mark Lang	Jon Davies	Final	N/A	S Mannings
1	01/11/13	Mark Lang	Jon Davies	Draft	Reviewed by EDF Energy	S Mannings
Rev.	Date	Prepared by	Checked by	Status	Reasons for revision	Approved by

 DIRECTION PRODUCTION INGENIERIE Centre National d'Equipement Nucléaire	1 ST PARTNER	2 ND PARTNER

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HYDER CRESSWELL	NNB GenCo Ref: 371
	SAFETY related Yes <input type="checkbox"/> No <input type="checkbox"/>

APPLICABILITY: - 1: Document related to Unit 1 - 2: Document related to Unit 2 - 9: Document that applies to buildings/systems common to units 1 & 2 - 0: documents that relate exclusively to buildings or systems that are common to the whole site (e.g. OSC building, parkings, ancillary buildings...)	NUCL/REP/EPR/UCHEPR		SYSTEM 00		
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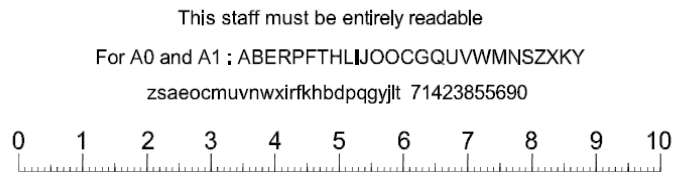
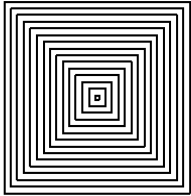
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EDF Energy
Sizewell C Nuclear Project
Little tern survey report 2013



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Sizewell C Nuclear Project

Little tern survey report 2013

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Report No UA004506-S-EX064-001

Date 15 October 2013

This report has been prepared for EDF Energy in accordance with the terms and conditions of appointment for Little Tern Survey dated 26 April 2013. Hyder Consulting (UK) Limited (2212959) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.



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Appendix B - Little tern desk study data

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Appendix D - 2013 Little Tern VP Survey Results

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1 Introduction

EDF Energy/NNB GenCo (hereafter referred to as NNB) is to submit an application for a Development Consent Order (DCO) to construct and operate a new nuclear power station, Sizewell C, near the town of Leiston in Suffolk. The proposal site lies within an Area of Outstanding Natural Beauty (AONB) and adjacent to the Minsmere to Walberswick Heaths and Marshes Special Area of Conservation (SAC), the Sandlings Special Protection Area (SPA) and the Outer Thames Estuary SPA. A small part of the site also lies within the Sizewell Marshes Site of Special Scientific Interest (SSSI).

Following on from NNB's Stage 1 Pre-Application Consultation on its initial proposals and options for Sizewell C, which ended on 6th February 2013, NNB's priorities for 2013 have been to progress the conceptual engineering design and technical studies relating to the development, as well as to undertake essential environmental studies in order to inform this conceptual work and support the Stage 2 Consultation and ultimately to help underpin a robust DCO application in due course.

This report details the results of survey work carried out in 2013 to record the distribution of nesting and foraging little tern (*Sterna albifrons*) and Sandwich tern (*Sterna sandvicensis*) from Dunwich beach to Orfordness lighthouse (see Appendix A, Figure 1). Breeding little tern are designated as an interest feature of the Minsmere-Walberswick Special Protection Area (SPA), the Alde-Ore Estuary SPA and the Bencare-Easton Barents SPA. Breeding Sandwich tern are a designated interest feature of the Alde-Ore Estuary SPA.

In 2011, Amec carried out survey work at a series of vantage points (VPs) along the Suffolk Coast from Orfordness Lighthouse to Minsmere, whilst in 2013 Hyder repeated the survey work with the addition of three VPs from Minsmere north to Dunwich Beach (see Appendix A, Figure 1). For the purposes of this report, therefore, the survey area is defined as the portion of the Suffolk Coast from Orfordness Lighthouse north to Dunwich Beach, from the high tide line extending out to sea for a distance of approximately 2km (this being the practical limit of visibility with a high powered telescope).

2 Methodology

The methodology involved two activities:

- A desk study to identify data sources on breeding little tern and Sandwich tern within Suffolk; and
- Field survey to better understand the distribution of foraging little terns and Sandwich terns - specifically to identify which areas of the coast in close proximity to Sizewell are most important for the two species.

2.1 Desk Study

Information pertaining to breeding little tern and Sandwich tern was requested (29th July 2013) from Natural England, the Royal Society for the Protection of Birds (RSPB) and Suffolk Wildlife Trust, as each organisation manage coastal nature reserves where both tern species could potentially breed. To date, information has been received from RSPB (though only for little tern), but not from Natural England or the Suffolk Wildlife Trust.

The RSPB are project partners within the Suffolk Little Tern Group and provided detailed information about the location of nesting colonies within Suffolk and when nesting had occurred from 2004 to 2013 (Philip Pearson, pers. comm.). The data are provided in Appendix B.

No information pertaining to Sandwich tern has been provided.

In addition to the above, the Suffolk Bird Reports produced by the Suffolk Naturalists Society (edited by Mason) were consulted for information pertaining to nesting little tern and sandwich tern. [Note that these reports are always a year in arrears, such that the results for 2013 will not be available until the end of 2014].

2.2 Field Survey

The field surveys in 2013 were based on a methodology designed by Amec. In 2011, Amec carried out two complementary surveys focusing on little tern, as follows:

- Fortnightly VP watches (at 12 locations between Minsmere and Orfordness Lighthouse; see Figure 1 for locations and viewsheds) during the period when breeding little tern are present (late April to September; although the peak period of breeding activity is May to the middle of August). These surveys were used to establish the distribution of foraging little tern along this section of the Suffolk coast, and to identify areas of coast of particular importance to them.
- Breeding season surveys, consisting of detailed colony watches at the three little tern breeding colonies that attempted to establish within the survey area in 2011 (at Dingle, Minsmere and Slaughden). Flight lines of foraging little terns were plotted to gauge where the majority of foraging activity associated with these colonies occurred. Dingle was the only location where a nesting colony established successfully.

As part of the methodology, Amec also recorded observations of other seabird species during the VP surveys to better understand which species were present along this section of coastline. This included Sandwich tern. These results are presented in Amec (2012) and are not discussed further in this report, with the exception of the Sandwich tern results.

No breeding season surveys were carried in 2012, as little tern failed to breed in any of the three colonies.

In 2013, Hyder Consulting repeated the survey methodology described above, but with the following modifications:

- the addition of three VPs to the north, from Minsmere to Dunwich beach; and
- the additional recording of Sandwich tern flight lines and foraging activities as well as those of little tern.

Note that in 2013 detailed little tern colony watches were not undertaken, as the single nesting colony to establish within the survey area was only present for a brief period (please refer to Section 3, below, for details).

3 Results

This section presents a summary of the survey work undertaken by Amec in 2011 and that carried out by Hyder in 2013. The detailed results of the 2013 survey work are presented in the appendices, as follows:

- Appendix A – Figures:
 - Figure 1 presents Vantage Point (VP) locations and view sheds.
 - Figure 2 presents the 2013 little tern observations.
 - Figure 3 presents the 2013 Sandwich tern observations.
- Appendix B presents desk study information received from the Suffolk Little Tern Group.
- Appendix C presents the timings and weather conditions recorded during 2013.
- Appendix D presents the 2013 little tern VP results.
- Appendix E presents the 2013 Sandwich tern VP results.
- Appendix F presents an inventory and the specific VP results of additional seabird species recorded during 2013 whilst undertaking the tern surveys.

3.1 Desk study

Little tern

Little tern is a designated feature of the Alde – Ore Estuary SPA, with up to 48 pairs (2% of the breeding population in Great Britain), and of the Minsmere to Walberswick SPA, with up to 28 pairs (1.22% of the breeding population in Great Britain). These figures are based on the five year mean between 1992 and 1996.

Amec (2012) reviewed desk study data pertaining to little tern, which is described as a common summer visitor and passage migrant in Suffolk (Mason, 2011). It breeds on sand and shingle beaches in a number of colonies located along the Suffolk coast, including at Minsmere beach and between Dunwich and Walberswick. However, these sites are not used every year, and there is a considerable interchange of birds between colonies.

Desk study data provided in 2013 by the Suffolk Little Tern Group indicate that little tern have had an inconsistent history in Suffolk. Whilst nesting colonies have established in 19 different locations, they have had varying levels of success, and not all locations are used every year. Since 2010 the trend has been downward, with fewer nesting pairs and young fledged. The nearest nesting location to Sizewell is at Minsmere; the last nesting attempt was in 2009, up to which point there had been a steady decline in nesting pairs at this location. The species plan for little tern within the Suffolk Biodiversity Action Plan (2006) suggests the decline in breeding numbers is due to factors including increased predation, human disturbance, tidal inundation and potentially variations in prey availability.

Data from the Suffolk Little Tern Group indicate that 2013 was a poor breeding year for little tern in Suffolk, with only four chicks fledged and only a single nesting colony attempting to establish within the survey area. This was at Slaughden, just south of Aldeburgh, with two birds

incubating eggs on the 12th June. By the 26th June, when the next VP survey took place, these birds had deserted and the colony had been abandoned. The Suffolk Little Tern Group indicated that disturbance from a low-flying Spitfire had caused the birds to desert. The National Trust warden at Orfordness (personal communication with David Fincham) was also of the opinion that disturbance from the low-flying aircraft was the cause for the desertion of the nesting colony. The data from the Suffolk Little Tern group are presented in Appendix B.

Sandwich tern

Sandwich tern is designated as an interest features of the Alde – Ore Estuary SPA, with up to 169 pairs (1.2% of the breeding population in Great Britain), based on the five year mean between 1992 and 1996.

Amec (2012) reviewed desk study data pertaining to Sandwich tern, which was described as being a common passage migrant but declining summer visitor to Suffolk (Mason, 2010). Within Suffolk, Sandwich terns have primarily bred at Havergate Island (first bred there in 1951) and Minsmere (first bred in 1965). The numbers of Sandwich tern breeding on Havergate Island increased to a peak of 800 pairs in 1962, after which breeding became more irregular, particularly since 2005. At Minsmere, breeding has also become very sporadic, with no pairs present in most years, but occasionally large numbers in others. In 2009, a colony of 550 pairs established itself on Minsmere scrape (likely due to breeding failure at another colony along the North Sea coast), although no young survived to fledge due to predation.

Mason (2010) indicates that the species has therefore now become an irregular and largely unsuccessful breeder in Suffolk, primarily due to predation from a variety of sources, both avian (gulls) and mammalian (foxes). In addition, other factors affecting little tern (human disturbance, tidal inundation, etc.) may also be affecting sandwich tern. Amec stated that in 2011 Sandwich tern did not establish a successful nesting colony along the Suffolk Coast. Mason (2013) indicates that in 2012 Sandwich tern did not establish a successful nesting colony along this part of the Suffolk coast. The results from the 2013 breeding season will not be known until the publication of the 2013 bird report later in 2014.

3.2 Field Survey

Little tern

During the survey work carried out by Amec in 2011, Dingle (just north of Dunwich) was the favoured breeding site for little tern, with 26 pairs present. Attempts to establish a colony at both Minsmere and Slaughden (Orfordness) were unsuccessful, and no nesting was observed. This had also been the situation in 2010.

The VP surveys in 2011 showed that little terns were recorded foraging along the coast between Dunwich and Orfordness during the period 10th May to 24th June, with much of the foraging activity being close off-shore (within 300m of the beach). Little terns were primarily seen moving up and down the shoreline, diving for prey items in the shallows. The surveys also showed that the inshore waters between Sizewell and Orfordness did not provide significant feeding grounds for little terns from the nearby breeding colonies.

Results from the 2011 colony surveys, undertaken at Dingle, Minsmere and Slaughden, indicated that much of the little tern foraging activity was concentrated within 1km of each colony. Elsewhere, little tern foraging activity was sporadic and involved small numbers of birds (generally fewer than five). Neither the colony nor VP survey results indicated that little terns were regularly flying further out to sea to feed.

A detailed account of the 2011 survey work carried out is presented in the Amec report (Amec, June 2012).

During the survey work carried out by Hyder in 2013, very little foraging or flight activity of little tern was recorded. Only eight observations were made over the survey period, with a maximum of eight individuals at any one time. Flight and foraging activity were only recorded in the vicinity of Minsmere and south of Aldeburgh. This is likely to be attributable to the fact that no successful nesting colonies established in the survey area in 2013.

Little terns did attempt to establish a colony at Slaughden beach in 2013, just to the south of Aldeburgh (VP 10), and a concentrated area of foraging activity was noted in this location, all within 500m of the beach (as indicated on Figure 2, Appendix A). However, this colony had deserted a fortnight later. This desertion was attributed to disturbance from a low-flying aircraft (see Section 3.1), but additional reasons could also have been responsible, including predation from avian or mammalian predators or too much disturbance by members of the public.

Sandwich tern

During the 2011 VP surveys, Amec recorded Sandwich tern as being present from April to October (refer to Appendix A, Figure 3). Small groups of individuals were observed commuting and foraging along the coast throughout the survey area, both close inshore and up to 2km from the shoreline. The most favoured areas for foraging were the shallow waters offshore from Thorpeness and between Slaughden beach and Orfordness, where up to ten birds were noted. The full results are presented in Amec (2012). However, Amec did not identify whether, or where, Sandwich terns bred during 2011.

The results from the Hyder 2013 VP surveys were broadly similar to those undertaken in 2011, with Sandwich terns present within the survey area from April until August. A total of 53 observations were made, with small groups (up to eight individuals) being observed predominantly commuting (with some observed foraging behaviour) at regular intervals along the coast between Dunwich and Orfordness. Particular concentrations were noted offshore from Minsmere and offshore south of Aldeburgh. Up to 30 birds were noted on the scrape at Minsmere, but it is not currently known if they successfully bred at Minsmere in 2013. Of note is that the majority of the observations in 2013 involved commuting rather than foraging birds; only 11 observations included foraging bird activity. As no concentrated foraging activity was recorded, it is therefore considered likely that the majority of observations made relate to birds commuting to and from breeding colonies outwith the immediate survey area.

Other seabird species recorded

A total of 29 additional seabird species were recorded in 2013 whilst undertaking the survey work for little tern and Sandwich tern. These included gulls, wader species, ducks and other wildfowl. The majority of observations related to the following species:

Seabird species recorded	Notes
Black headed gull	Recorded regularly throughout the survey area
Common tern	Up to 40 pairs nested at Minsmere, with regular observations in the vicinity of Minsmere
Cormorant	Recorded regularly throughout the survey area
Great black-backed gull	Recorded regularly throughout the survey area
Herring gull	Recorded regularly throughout the survey area
Kittiwake	A few hundred pairs nest on the Sizewell Rig structures, so birds generally recorded in the vicinity of the rig structures.

The full details of additional seabird species recorded are presented in Appendix F.

4 Discussion and conclusions

Survey work in 2011 recorded little tern foraging along the coast between Minsmere and Orfordness, with much of the activity being close off-shore (within 300m of the beach). Three nesting colonies attempted to establish (only one was successful), and the surveys also indicated that much of the little tern foraging activity was concentrated within 1km of each colony. Elsewhere, little tern foraging activity was sporadic and involved small numbers of birds (generally fewer than five individuals).

During the survey work carried out in 2013, very little foraging or flight activity of little tern was recorded. Only eight flight observations were made, with a maximum of eight individuals at any one time. Flight and foraging activity were recorded in the vicinity of Minsmere and south of Aldeburgh only. This is thought to be attributable to the fact that no successful nesting colonies were established in the study area. A single nesting colony attempted to establish, at Slaughden just south of Aldeburgh, with two birds incubating eggs on the 12th June. However, the colony had been abandoned by the 26th June, when the next VP survey took place. Overall, 2013 was a poor breeding year for little tern in Suffolk, with only four chicks fledged (Suffolk Little Tern Group, personal communication).

Sandwich tern were also recorded from April to October during the 2011 surveys. Small groups of individuals were observed commuting and foraging along the coast throughout the survey area, both close inshore and up to 2km from the shoreline. The most favoured areas for foraging were the shallow waters offshore from Thorpeness, and between Slaughden beach and Orfordness, where up to ten birds were recorded.

The results from the 2013 surveys were broadly similar to those undertaken in 2011, with small groups of Sandwich tern being observed commuting at regular intervals along the coast between Dunwich and Orfordness. Particular concentrations were noted offshore from Minsmere and south of Aldeburgh. Up to 30 birds were noted on the scrape at Minsmere, but it is not known if they successfully bred at Minsmere in 2013. The majority of the observations in 2013 involved commuting rather than foraging birds, with a total of 11 observations of foraging birds in comparison to the 52 total observations of sandwich tern recorded. It is likely that these are birds commuting to and from breeding colonies outside the survey area.

Little tern have had an inconsistent history in Suffolk and the overall trend appears to be downward, with fewer nesting pairs and fledged young than in previous years. The Suffolk Little Tern Group indicates that 2013 was a very poor breeding year in Suffolk, despite good numbers of adult birds appearing. They have suggested a range of factors that could limit nesting success, including disturbance from beach users (a key issue at a number of sites), habitat unsuitability, and, potentially, prey availability [Note the Suffolk Little Tern Group have only postulated that changes in prey availability might be an issue that could limit nesting success, and further evidence and studies would be required to test this assumption].

Survey work suggests that little tern undertake the majority of their foraging activity in close proximity to their nesting colonies. Amec observed the majority of foraging to be within 1km of nesting colonies, whilst in 2013 foraging activity at the colony at Slaughden was all within 500m of the colony. However, as this colony was only present for a short period (less than 3 weeks) this may not be representative.

Little tern certainly have a smaller foraging range than the larger Sandwich tern. Information provided by Bird Life International states that for a study in Spain, 95% of foraging little tern were observed less than 4 km away from the nearest colony. However, the foraging range of individuals varies according to whether they are currently breeding. In Norfolk, studies of little tern have suggested that little tern provisioning young have a foraging range with a minimum of 2km (Perrow *et al* 2005) to a maximum of 5km (Langston 2009). Therefore, the importance of a

particular length of coastline to foraging little terns is likely to be influenced by the location of where a nesting colony is established. If a nesting colony is established in the vicinity (within 2-3km) of Sizewell, then the importance of the length of coast in close proximity is likely to increase.

Little tern have not attempted to nest in close proximity (within 2km) of Sizewell since 2009, when a colony at Minsmere failed to fledge any young.

Sandwich terns are larger birds than little terns, and forage over a wider area. Information provided by Bird Life International states that the foraging range for Sandwich tern can be up to 20 km from the nest site. Survey work in 2011 recorded observations of commuting and foraging Sandwich tern throughout the survey area, with a concentration of foraging birds in the vicinity of Thorpeness. During 2013, Sandwich tern were observed widely throughout the survey area, with concentrations at Minsmere and south of Aldeburgh. Amec stated that no Sandwich tern bred successfully in Suffolk in 2011, and Mason (2013) indicates that breeding in 2012 was also not successful. The results of the 2013 breeding season will not be available until the end of 2014.

It is concluded that Sandwich tern are less dependent on the length of coast immediately adjacent to a nesting colony, as they can forage over a wider area. However, if a successful nesting colony were to establish itself at Minsmere or Havergate Island (as has happened in the recent past) then the length of coastline in the survey area may become more important for foraging birds, depending on the size of the nesting colony.

It is envisaged that additional survey work for little tern and/or Sandwich tern in 2014 would only be necessary if a breeding colony for either species successfully establishes itself within the survey area (i.e. between Orfordness and Dunwich) or very close to it.

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Appendix A

Figures

Figure 1 - Vantage Point (VP) locations and view sheds

Figure 2 - 2013 Little tern observations

Figure 3 - 2013 Sandwich tern observations



KEY
 ① VP LOCATION AND FIELD OF VIEW
 ◐ 1 KM VIEWSHED

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**FIGURE 1 - SHEET 1 OF 5
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 AND VIEWSHEDS**

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- ① VP LOCATION AND FIELD OF VIEW
 - ◡ 1KM VIEWSHED

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 - ◡ 1KM VIEWSHED

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 VANTAGE POINT LOCATIONS
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KEY
 ① VP LOCATION AND FIELD OF VIEW
 ◐ 1 KM VIEWSHED

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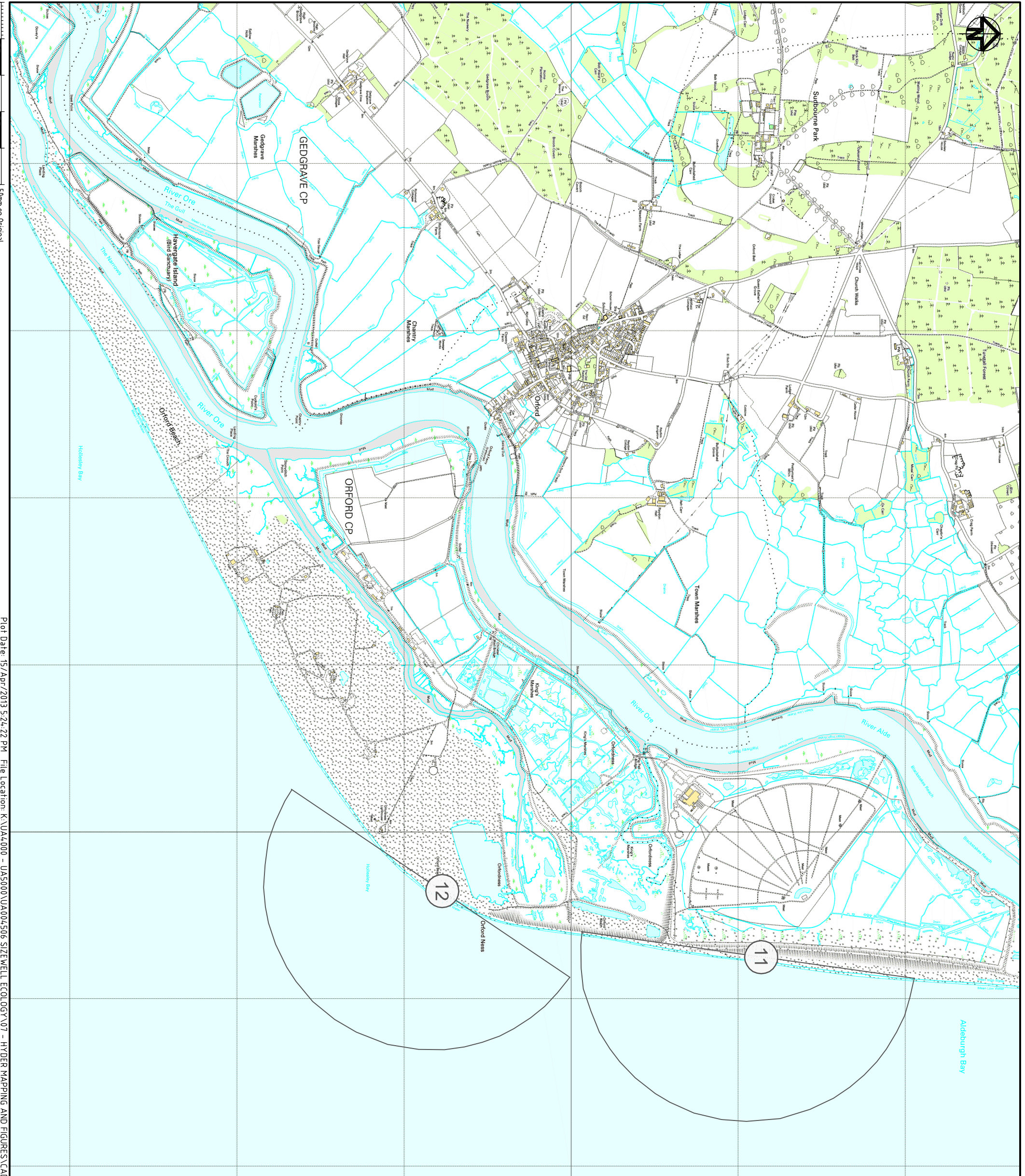


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Project
SIZEWELL

Title
**FIGURE 1 - SHEET 4 OF 5
 VANTAGE POINT LOCATIONS
 AND VIEWSHEDS**

Drawing No. Project No. Issue
 DRGN0 - UA004506 - 01



KEY

- ① VP LOCATION AND FIELD OF VIEW
- ◡ 1 KM VIEWSHED

01	VERSION 1	11 APR 13
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PRELIMINARY
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Issue	Description	Date
Status	Current Issue Signatures	
Scales	NTS	Author L.FRANKE
Original Size	A3	Checker M.LANG
Height Datum	DATUM	Approver J.DAVES
Grid	GRID	© Copyright reserved

Client
File name: 01-UA004506-STD-01_RTD-VP-LOCATIONS.DWG



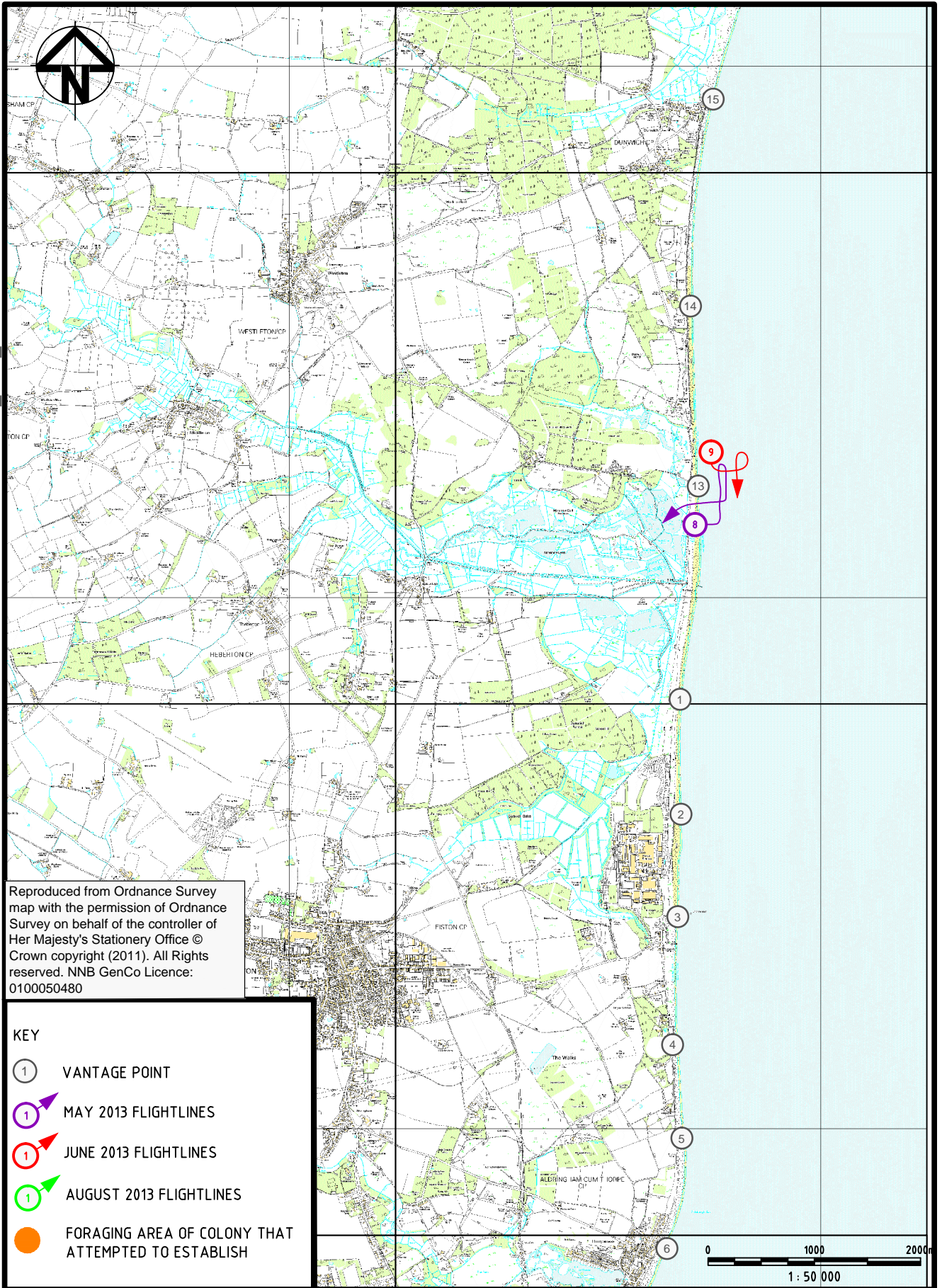
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Title
**FIGURE 1 - SHEET 5 OF 5
VANTAGE POINT LOCATIONS
AND VIEWSHEDS**

Drawing No. Project No. Issue
DRGNO - UA004506 - 01

Plot Date: 11/Nov/2013 1:34:23 PM File Location: K:\UA4\000 - UA5000\UA004\506 SIZEWELL ECOLOGY\07 - HYDER MAPPING AND FIGURES\CAD\LITTLE TERN MAPS\1014-UA005653-STD-01 LITTLE_TERN.DWG



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KEY

- ① VANTAGE POINT
- ➔ MAY 2013 FLIGHTLINES
- ➔ JUNE 2013 FLIGHTLINES
- ➔ AUGUST 2013 FLIGHTLINES
- FORAGING AREA OF COLONY THAT ATTEMPTED TO ESTABLISH


Status			
PRELIMINARY NOT TO BE USED FOR CONSTRUCTION			
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Filename:	1014-UA005653-STD-01_Little_Tern.dwg		
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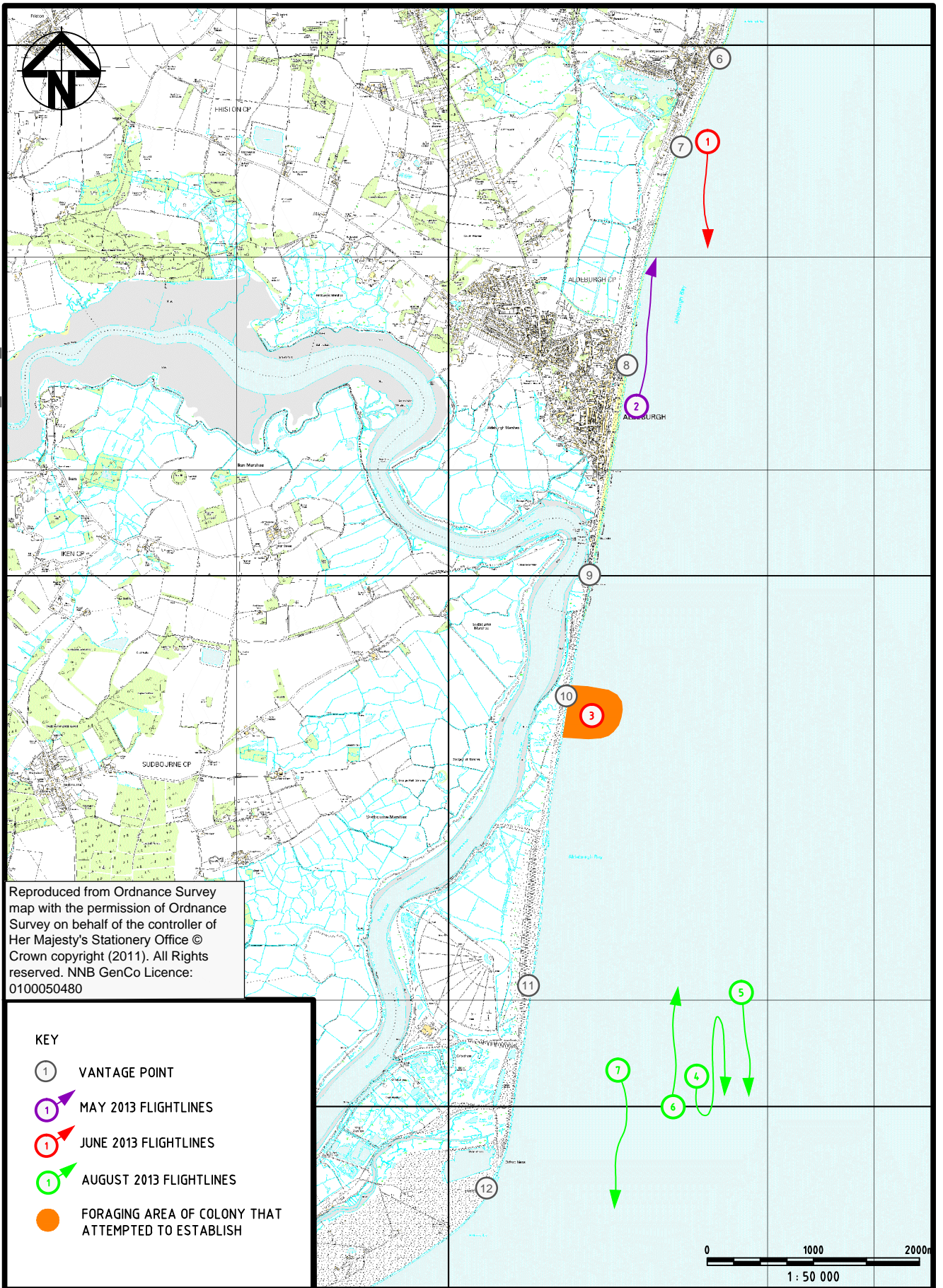
FIGURE 2: LITTLE TERN SURVEY RESULTS SHEET 1 OF 2



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Drawing No.	Project No.	Issue
1014	UA005653	01

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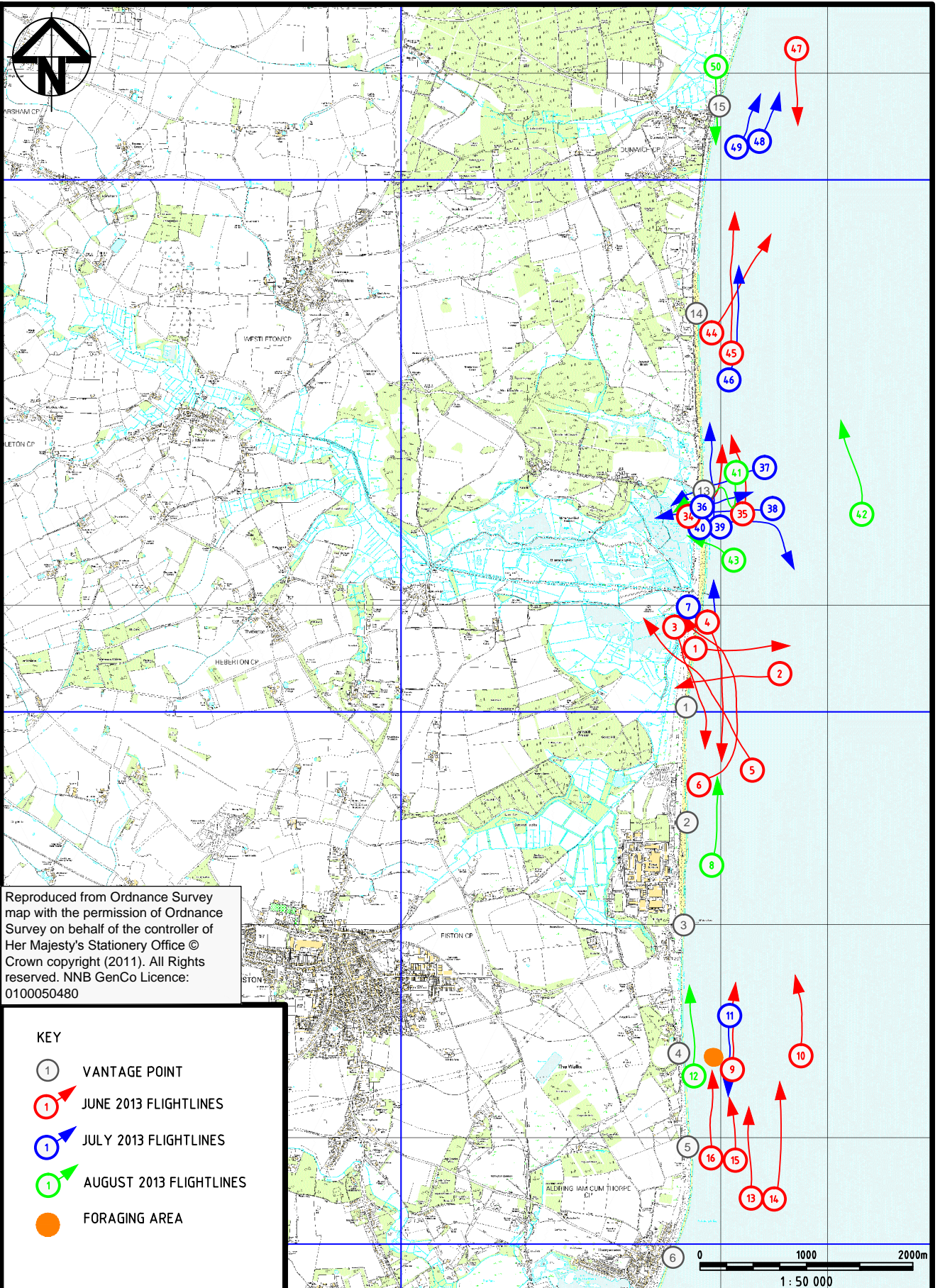
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	VANTAGE POINT
	MAY 2013 FLIGHTLINES
	JUNE 2013 FLIGHTLINES
	AUGUST 2013 FLIGHTLINES
	FORAGING AREA OF COLONY THAT ATTEMPTED TO ESTABLISH

Status			
PRELIMINARY NOT TO BE USED FOR CONSTRUCTION			
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Height Datum	DATUM	Grid	GRID
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Project	
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FIGURE 2 LITTLE TERN SURVEY RESULTS SHEET 2 OF 2	

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Drawing No.	Project No.	Issue
1014	UA005653	01

Plot Date: 11/Nov/2013 1:35:23 PM File Location: K:\UA4-000 - UA5000\UA004506 SIZEWELL ECOLOGY\07 - HYDER MAPPING AND FIGURES\CAD\LITTLE TERN MAPS\1014-UA005653-STD-01 SANDWICH_TERN.DWG



KEY

- 1 VANTAGE POINT
- 1 JUNE 2013 FLIGHTLINES
- 1 JULY 2013 FLIGHTLINES
- 1 AUGUST 2013 FLIGHTLINES
- FORAGING AREA

Status			
PRELIMINARY NOT TO BE USED FOR CONSTRUCTION			
Scales	1:50,000	Original Size	A4
Height Datum	DATUM	Grid	GRID
Filename: 1014-UA005653-STD-01_Sandwich_tern.dwg			
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Project	
SIZEWELL	
Title	
FIGURE 3 SANDWICH TERN SURVEY RESULTS SHEET 1 OF 2	

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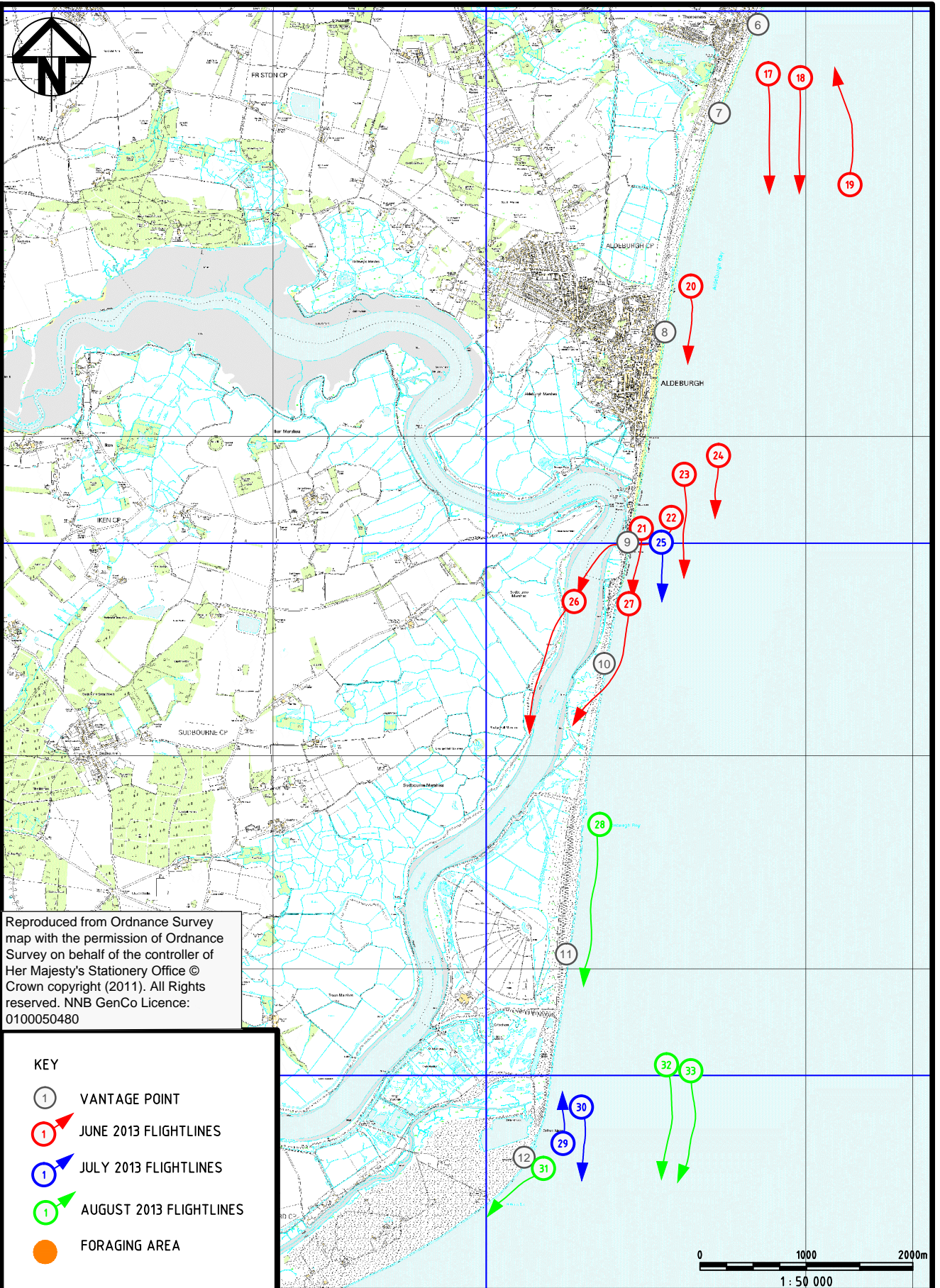
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Plot Date: 11/Nov/2013 1:36:04 PM File Location: K:\UA4\000 - UA5000\UA004506 SIZEWELL ECOLOGY\07 - HYDER MAPPING AND FIGURES\CAD\LITTLE TERN MAPS\1014-UA005653-STD-01 SANDWICH TERN.DWG



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KEY

- ① VANTAGE POINT
- ① JUNE 2013 FLIGHTLINES
- ① JULY 2013 FLIGHTLINES
- ① AUGUST 2013 FLIGHTLINES
- FORAGING AREA


Status			
PRELIMINARY NOT TO BE USED FOR CONSTRUCTION			
Scales	1:50,000	Original Size	A4
Height Datum	DATUM	Grid	GRID
Filename:	1014-UA005653-STD-01_Sandwich_tern.dwg		
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FIGURE 3 SANDWICH TERN SURVEY RESULTS SHEET 2 OF 2

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1014	- UA005653 -	01

Appendix B

Little Tern Desk Study Data

Table 2 little tern nesting data from the Suffolk Little Tern Group. Yellow represents sites within the survey area and green represents an area just to the North of the survey area.

Sites	Grid Ref	Nests									
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Kessingland	TM53768474	5	*	0	0	0	3	70	45	40	7
Benacre	TM53658365	55	9	40	0	0	50	100	0	0	2
Covehithe	TM52558075	0	4	0	0	0	0	0	0	0	0
Easton	TM51907960	2	0	0	0	0	0	2	0	0	0
Southwold	TM50557515	0	0	0	0	0	0	0	0	0	0
Walberswick	TM48057205	3	0	0	0	0	30	50	0	0	0
Dingle / Corporation Marsh	TM49557385	0	1	2	2	2	11	0	0	0	0
Minsmere	TM476666	15	36	7	12	41	1	0	0	0	0
North Warren	TM467576	0	0	0	0	0	0	0	0	0	0
Slaughden Beach	TM464555	0	7	0	0	0	0	0	0	0	2
Orford Beach	TM45555105	0	0	2	0	0	0	0	0	0	0
Havergate Island	TM39944669	0	0	3	0	0	0	0	0	0	0
Shingle Street	TM426364	0	0	0	0	0	0	0	0	4	0
King's Fleet - River Deben (Bawdsey)	TM32093851	47	4	0	0	0	0	0	0	0	0
Deben	TM33453745	0	0	0	0	0	0	0	0	0	11
Felixstowe	TM26253485	4	0	0	0	0	0	0	0	47	0
Landguard Point	TM28353155	1	0	0	0	0	0	0	0	0	0
Shotley	TM24753565	4	0	0	0	0	0	0	0	0	0
Trimley Marshes	TM260353	0	10	0	0	0	0	0	0	0	0

Appendix C

Vantage Point Survey Timings and Weather Conditions

The following tables present the timings, state of the tide and weather conditions for the Hyder 2012/2013 VP survey.

Vantage Point 1

Date	Start	Finish	Weather	Wind Direction	Wind Speed (Beaufort)	Cloud cover (8ths)	Cloud height (<150m: 0, 150-500m: 1, >500m: 2)	Visibility (Poor <1km: 0, Moderate 1-3km: 1, Good >3km: 2)	Rain (None: 0, Drizzle/mist: 1, light showers: 2, heavy showers: 3, heavy rain: 4)
13/05/2013	15:35	16:20	Overcast, dry, 16°C	W	4	8	1	2	0
30/05/2013	10:55	10:40	Overcast, 10°C	N	4	8	1	2	0
11/06/2013	11:15	12:00		NE	2	6	3	1 (haze at 2-3km off shore)	0
27/06/2013	10:30	11:15		SW	2-3	4	2	2	0
10/07/2013	11:40	12:25	Overcast, 16°C	N	3	8	1	2	0
26/07/2013	10:00	10:45	Fine, sunny	SE	1	2	2	3	0
07/08/2013	12:40	13:25	Overcast, Light rain	NE	5	8	2	2	0
21/08/2013	09:35	10:20	Overcast, bright, light breeze, sunny	S	3	8	2	2	0

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Vantage Point 2

Date	Start	Finish	Weather	Wind Direction	Wind Speed (Beaufort)	Cloud cover (8ths)	Cloud height	Visibility	Rain
15/03/2013	11:20	12:05	Strong winds, 11°C	S	7	7	1	2	0
29/05/2013	06:10	06:55	Light rain, 9°C	NW	2	8	1	1	2
10/06/2013	16:00	16:45		SW	2	6	3	2	0
27/06/2013	11:30	12:15		SW	2	4	2	2	0
09/07/2013	14:45	15:30	Sunny, dry, hot	NW	4	0	0	2	0
26/07/2013	09:00	09:45	Fine, sunny	SE	1	2	2	3	0
07/08/2013	08:15	09:00	Overcast, 15°C	NE	5	8	2	2	0
21/08/2013	08:40	09:25	Overcast, light breeze, bright, dry	S	3	8	2	2	0

Vantage Point 3

Date	Start	Finish	Weather	Wind Direction	Wind Speed (Beaufort)	Cloud cover (8ths)	Cloud height	Visibility	Rain
15/05/2013	10:20	11:05	Windy, dry, 11°C	S	7	7/8	1	2	0
28/05/2013	07:15	08:00	10°C, dry	NW	2	8	1	2	0
10/06/2013	15:00	15:45		SW	2	0	3	2	0
26/06/2013	17:30	18:15		SW	2	6	2	2	0
09/07/2013	15:40	16:25	Sunny, hot, dry	NW	4	0	0	2	0
26/07/2013	08:00	08:45	Fine, sunny	E	1	1	2	3	0
07/08/2013	07:05	07:50	Overcast, 15°C	NE	5	8	2	2	0
19/08/2013	17:30	18:15	Sunny, breezy, 18°C	E	4	3	2	2	0

NOT PROTECTIVELY MARKED

Vantage Point 4

Date	Start	Finish	Weather	Wind Direction	Wind Speed (Beaufort)	Cloud cover (8ths)	Cloud height	Visibility	Rain
15/05/2013	09:15	10:00	Windy, dry, 11°C	S	7	7	1	2	0
28/05/2013	18:30	19:15	Dry, Overcast, 11°C	S	3	8	1	2	0
10/06/2013	14:00	14:15		SW	2	7	3	3	0
25/06/2013	10:30	11:15		SW	2	4	2	2	0
09/07/2013	16:40	17:25	Sunny, 20°C	NE	5	0	0	2	0
25/07/2013	18:30	19:15	Fine, 20°C	SE	2	1	2	3	0
06/08/2013	18:00	18:45	Dry, sunny, 21°C	W	2	4	2	2	0
20/08/2013	15:45	16:30	sunny, breezy	S	5	1	2	2	0

Vantage Point 5

Date	Start	Finish	Weather	Wind Direction	Wind Speed (Beaufort)	Cloud cover (8ths)	Cloud height	Visibility	Rain
15/05/2013	08:05	08:55	Strong winds, dry	S	8	8	1	2	0
28/05/2013	19:45	20:30	Light rain, 11°C	S	3	8	1	1	2
10/06/2013	13:00	13:45		SW	1	7	2	2	0
25/06/2013	09:30	10:15		SW	2	2	2	2	0
08/07/2013	17:20	18:05	Sunny, 20°C	N	4	0	0	2	0
25/07/2013	17:30	18:15		SW	3	1	2	3	0
06/08/2013	19:10	19:55	20°C, dry	W	3	5	2	2	0
20/08/2013	16:40	17:25	sunny, breezy	S	4	1	2	2	0

Vantage Point 6

Date	Start	Finish	Weather	Wind Direction	Wind Speed (Beaufort)	Cloud cover (8ths)	Cloud height	Visibility	Rain
15/05/2013	07:00	07:45	Strong winds, dry	S	8	8	1	2	0
29/05/2013	09:15	10:00	Misty, 11°C overcast	NW	2	8	0	1	1
11/06/2013	15:30	16:15		NE	2/3	2	3	1 - Haze at c.3km	0
25/06/2013	07:30	08:15		SW	2	0	0	2	0
08/07/2013	18:20	19:05	Sunny, 20°C	N	4	0	0	2	0
25/07/2013	19:30	20:15	Fine	SE	2	2	2	2 (haze)	0
06/08/2013	06:45	07:30	Dry, sunny, 19°C	W	2	0	0	2	0
20/08/2013	17:45	18:30	sunny, breezy	SE	5	1	2	2	0

Vantage Point 7

Date	Start	Finish	Weather	Wind Direction	Wind Speed (Beaufort)	Cloud cover (8ths)	Cloud height	Visibility	Rain
13/05/2013	17:45	18:30	Broken cloud, 13°C	SW	4	6	1	2	0
29/05/2013	10:10	10:55	Misty, 11°C	NW	2	8	0	1	1
11/06/2013	14:30	15:15		NE	2	2	2	1 (Haze at 2-3km offshore)	0
25/06/2013	06:30	07:15		SW	2	0	0	2	0
08/07/2013	19:10	19:55	Dry, sunny, 19°C	N	4	0	0	2	0
25/07/2013	16:00	16:45		SE	3	1	2	2 (haze at 4km)	0
06/08/2013	07:45	08:30	Dry, sunny. 19°C	W	2	0	0	2	0
19/08/2013	18:40	19:25	Sunny, breezy	E	4-5	3	2	2	0

NOT PROTECTIVELY MARKED

Vantage Point 8

Date	Start	Finish	Weather	Wind Direction	Wind Speed (Beaufort)	Cloud cover (8ths)	Cloud height	Visibility	Rain
14/05/2013	14:00	14:45	Dry, overcast	SW	5	8	1	2	0
29/05/2013	11:10	11:55	Overcast, misty, 11°C, light rain shower	NW	2	8	0	1	1
12/06/2013	06:45	07:30		SW	4	6	2	1 (Haze at c.3km then 2 as sun lifted mist)	0
24/06/2013	17:45	18:30		SW	2	2	2	2	0
09/07/2013	17:50	18:35	Sunny, 18°C	NE	5	0	0	2	0
25/07/2013	06:30	07:15		SW	2	3	2	2	0
06/08/2013	08:40	09:25	Dry, sunny, 20°C	W	3	0	0	2	0
20/08/2013	08:00	08:45	Sunny, Calm	NE	2	4	2	2	0

Vantage Point 9

Date	Start	Finish	Weather	Wind Direction	Wind Speed (Beaufort)	Cloud cover (8ths)	Cloud height	Visibility	Rain
13/05/2013	19:00	19:45	Dry, broken cloud	SW	5	6	1	2	0
29/05/2013	12:15	13:00	Light rain, 11°C, rain stopped by end of survey	NW	3	8	0	1	2 to 0
12/06/2013	11:45	12:30		SW	4	7	2	2	0
24/06/2013	16:45	17:30		SW	2	8	2	2	0
09/07/2013	18:50	19:35	Sunny, 18°C	NE	4	0	0	2	0
25/07/2013	15:00	15:45	Fine, sunny, 28°C	SE	2	2	2	2 (haze at 3km)	0
06/08/2013	10:15	11:00	Sunny, 20°C	W	2	1	2	2	0
20/08/2013	08:55	09:40	Sunny, calm	W	1-2	3	2	2	0

Vantage Point 10

Date	Start	Finish	Weather	Wind Direction	Wind Speed (Beaufort)	Cloud cover (8ths)	Cloud height	Visibility	Rain
14/05/2013	11:55	12:40	Overcast, dry	SW	5	8	1	2	0
29/05/2013	14:00	14:45	Dry, overcast, 11°C	W	4	8	1	2	0
12/06/2013	10:00	10:45		SW	10	0	2	2	0
26/06/2013	07:30	08:15		SW	1	4	3	2	0
09/07/2013	12:40	13:25	Sunny, 20°C	N	4	0	0	2	0
25/07/2013	13:00	13:45	Hot, sunny	SE	2	2	3	2 (haze at 5km)	0
06/08/2013	11:40	12:25	Dry, sunny, 20°C	W	3	3	2	2	0
20/08/2013	10:15	11:00	sunny, light breeze	SE	3-4	1	2	2	0

Vantage Point 11

Date	Start	Finish	Weather	Wind Direction	Wind Speed (Beaufort)	Cloud cover (8ths)	Cloud height	Visibility	Rain
14/05/2013	10:45	11:30	Cloudy, dry	S	5	7	1	2	0
29/05/2013	15:10	15:55	Dry, overcast, 10°C	NW	4	8	1	2	0
09/07/2013	11:35	12:00	Sunny, 20°C	NW	4	0	0	2	0
25/07/2013	11:30	12:15	Fine, sunny	SE	2	2	3	3	0
06/08/2013	13:05	13:50	Dry, 21°C	W	3	3	2	2	0
20/08/2013	11:20	12:05	Sunny, light breeze	SE	4	2	2	2	0

NOT PROTECTIVELY MARKED

Vantage Point 12

Date	Start	Finish	Weather	Wind Direction	Wind Speed (Beaufort)	Cloud cover (8ths)	Cloud height	Visibility	Rain
14/05/2013	09:15	10:00	Dry, bright, 14°C	SE	4	5	1	2	0
29/05/2013	16:40	17:25	Dry, overcast	NW	4	8	1	2	0
09/07/2013	10:15	11:00	Sunny, 21°C	N	4	0	0	2	0
25/07/2013	09:45	10:30	Sunny, 25° C	SW	1	4	2	2 (Haze)	0
06/08/2013	14:40	15:25	Sunny, 21°C	W	3	4	2	2	0
20/08/2013	12:45	13:30	Sunny, breezy	SE	5	4	2	2	0

Vantage Point 13

Date	Start	Finish	Weather	Wind Direction	Wind Speed (Beaufort)	Cloud cover (8ths)	Cloud height	Visibility	Rain
13/05/2013	14:40	15:25	Dry, bright, 16°C	SW	4	6	1	2	0
13/05/2013	10:00	10:45	Overcast, 10°C	N	4	8	1	2	0
11/06/2013	09:45	10:30		NE	2	6	3	2	0
26/06/2013	11:00	11:45		SW	2	4	3	2	0
10/07/2013	10:45	11:30	Overcast, 15°C	N	4	8	1	2	1
24/07/2013	15:15	16:00	25°C, fine	SW	2	4	2	3	0
07/08/2013	11:35	12:20	Overcast, 16°C	NE	5	8	2	2	0
21/08/2013	12:00	12:45	Sunny, breezy	S	4-5	5	2	2	0

Vantage Point 14

Date	Start	Finish	Weather	Wind Direction	Wind Speed (Beaufort)	Cloud cover (8ths)	Cloud height	Visibility	Rain
13/05/2013	13:45	14:30	Dry, Bright, warm	SW	3	5	1	2	0
30/05/2013	09:00	09:45	Overcast, 10°C	N	4	8	1	2	0
11/06/2013	07:15	08:00		NW	2	2	3	2	0
26/06/2013	10:00	10:45		SW	2	2	3	2	0
10/07/2013	09:50	10:35	Overcast, 15°C	N	5	8	1	2	1
24/07/2013	14:15	15:00	28°C	SW	3	4	2	3	0
07/08/2013	10:30	11:15	Overcast, 16°C	NE	6	8	2	2	0
21/08/2013	11:05	11:50	Sunny, breezy	S	4	5	2	2	0

Vantage Point 15

Date	Start	Finish	Weather	Wind Direction	Wind Speed (Beaufort)	Cloud cover (8ths)	Cloud height	Visibility	Rain
13/05/2013	12:30	13:15	Overcast, dry	W	4	8	1	2	0
30/05/2013	08:00	08:45	Dry, overcast, 9°C	N	4	8	1	2	0
11/06/2013	06:15	07:00		NE	2	2	2	2	0
25/06/2013	17:15	18:00		SW	2	0	0	2	0
10/07/2013	08:45	09:30	Overcast, 15°C	NE	4	8	1	2	0
24/07/2013	13:00	13:45	25°C	SW	2	5	2	3	0
07/08/2013	09:30	10:15	Overcast, 16°C	NE	6	8	2	2	0
19/08/2013	16:15	17:00	Overcast, sunny spells, breezy	E	4	6-4	2	2	0

Appendix D

2013 Little Tern VP Survey Results

The following table shows the entire little tern observations made during the period May 2013 to the end of August 2013. If no little terns were recorded from a VP on a particular date then this was still included in the table and denoted by 0 birds recorded.

Table 1: Little Tern - VP surveys results (May 2013 to August 2013)

Target note	VP	Date	Time	No. of little terns	Observation time	Estimated distance from shore (m)	Estimated distance - /+ error (m)	Behaviour	Direction if commuting	Notes and comments
	1	13/05/2013	15:35	0						
	1	30/05/2013	10:55	0						
	1	11/06/2013	11:15	0						
	1	27/06/2013	10:30	0						
	1	10/07/2013	11:40	0						
	1	26/07/2013	10:00	0						
	1	07/08/2013	12:40	0						
	1	21/08/2013	09:35	0						
	2	15/05/2013	11:20	0						
	2	28/05/2013	06:10	0						
	2	10/06/2013	16:00	0						Area of Sizewell beach roped off; however, no nesting terns.
	2	27/06/2013	11:30	0						
	2	09/07/2013	14:45	0						
	2	26/07/2013	09:00	0						
	2	07/08/2013	08:15	0						
	2	20/08/2013	08:40	0						
	3	15/05/2013	10:20	0						
	3	28/05/2013	07:15	0						

NOT PROTECTIVELY MARKED

Target note	VP	Date	Time	No. of little terns	Observation time	Estimated distance from shore (m)	Estimated distance - /+ error (m)	Behaviour	Direction if commuting	Notes and comments
	3	10/06/2013	15:00	0						
	3	26/06/2013	17:30	0						
	3	09/07/2013	15:40	0						
	3	26/07/2013	08:00	0						
	3	07/08/2013	07:05	0						
	3	19/08/2013	17:30	0						
	4	15/05/2013	09:05	0						
	4	28/05/2013	18:30	0						
	4	10/06/2013	14:00	0						
	4	25/06/2013	10:30	0						
	4	09/07/2013	16:40	0						
	4	25/07/2013	18:15	0						
	4	06/08/2013	18:00	0						
	4	20/08/2013	15:45	0						
	5	15/05/2013	08:05	0						
	5	28/05/2013	19:45	0						
	5	10/06/2013	13:15	0						
	5	25/06/2013	09:30	0						
	5	08/07/2013	17:20	0						
	5	25/07/2013	17:30	0						
	5	06/08/2013	19:10	0						
	5	20/08/2013	16:40	0						
	6	15/05/2013	07:00	0						
	6	29/05/2013	09:15	0						
	6	11/06/2013	15:30	0						
	6	25/06/2013	07:30	0						
	6	08/07/2013	18:20	0						

NOT PROTECTIVELY MARKED

Target note	VP	Date	Time	No. of little terns	Observation time	Estimated distance from shore (m)	Estimated distance - /+ error (m)	Behaviour	Direction if commuting	Notes and comments
	6	25/07/2013	19:30	0						
	6	06/08/2013	06:45	0						
	6	20/08/2013	17:45	0						
	7	13/05/2013	17:45	0						
	7	29/05/2013	10:10	0						
1	7	11/06/2013	15:00	1		500	100	Commuting	South	Area of shingle beach fenced off; however, no visible tern activity.
	7	25/06/2013	06:30	0						
	7	08/07/2013	19:55	0						
	7	25/07/2013	16:00	0						
	7	06/08/2013	07:45	0						
	7	19/08/2013	18:40	0						
	8	14/05/2013	14:00	0						
2	8	29/05/2013	11:44	3		40	10	Commuting	North	Group of 3 birds
	8	12/06/2013	06:45	0						
	8	24/06/2013	17:45	0						
	8	09/07/2013	17:50	0						
	8	25/07/2013	06:30	0						
	8	06/08/2013	08:40	0						
	8	20/08/2013	08:00	0						
	9	13/05/2013	19:00	0						
	9	29/05/2013	12:15	0						
	9	12/06/2013	11:45	0						
	9	24/06/2013	16:45	0						
	9	09/07/2013	18:50	0						
	9	25/07/2013	15:00	0						

NOT PROTECTIVELY MARKED

Target note	VP	Date	Time	No. of little terns	Observation time	Estimated distance from shore (m)	Estimated distance - /+ error (m)	Behaviour	Direction if commuting	Notes and comments
	9	06/08/2013	10:15	0						
	9	20/08/2013	08:55	0						
	10	14/05/2013	11:55	0						
	10	29/05/2013	14:00	0						
3	10	12/06/2013	10:00	up to 8		30 - 50		Foraging/flights		Colony of little tern on beach approx. location VP10. Viewed through telescope zoom to the north 6-7 birds seen. Approx. 60 flights during 45 min VP watch. All birds foraging at sea. No flights noted over sea wall to River Alde. National Trust stated 20 little tern arrived on 09/06/2013 at this location.
	10	26/06/2013	07:30	0						Little terns may have deserted having being predated. Gulls and crows noted on beach at nesting site.
	10	09/07/2013	12:40	0						
	10	25/07/2013	13:00	0						
	10	06/08/2013	11:40	0						
	10	20/08/2013	10:15	0						
	11	14/05/2013	10:45	0						
	11	29/05/2013	15:10	0						
	11	09/07/2013	11:35	0						
	11	25/07/2013	11:30	0						
	11	06/08/2013	13:05	0						
4	11	20/08/2013	11:20	4	300	1750	250	Foraging		
5	11	20/08/2013	11:28	4	30	1750	250	Commuting		

NOT PROTECTIVELY MARKED

Target note	VP	Date	Time	No. of little terns	Observation time	Estimated distance from shore (m)	Estimated distance - /+ error (m)	Behaviour	Direction if commuting	Notes and comments
6	11	20/08/2013	11:35	1	30	1500	250	Commuting		
	12	14/05/2013	09:15	0						
	12	29/05/2013	16:40	0						
	12	09/07/2013	10:15	0						
	12	25/07/2013	09:45	0						
	12	06/08/2013	14:40	0						
7	12	20/08/2013	12:55	4	120	1250	250	Inshore		
	13	13/05/2013	14:40	0						
8	13	30/05/2013	10:32	1		35	35	Foraging from Minsmere then along coast		
9	13	11/06/2013	10:25	2		100	20	Foraging/ Commuting	south	
	13	26/06/2013	11:00	0						
	13	10/07/2013	10:45	0						
	13	24/07/2013	13:15	0						
	13	07/08/2013	11:35	0						
	13	21/08/2013	12:00	0						
	14	13/05/2013	13:45	0						
	14	30/05/2013	09:00	0						
	14	11/06/2013	07:15	0						
	14	26/06/2013	10:00	0						
	14	10/07/2013	09:50	0						
	14	24/07/2013	14:15	0						
	14	07/08/2013	10:30	0						
	14	21/08/2013	11:05	0						
	15	13/05/2013	12:30	0						

NOT PROTECTIVELY MARKED

Target note	VP	Date	Time	No. of little terns	Observation time	Estimated distance from shore (m)	Estimated distance - /+ error (m)	Behaviour	Direction if commuting	Notes and comments
	15	30/05/2013	08:00	0						
	15	11/06/2013	06:15	0						Fenced off area of beach visible at Walberswick end of beach; however, no obvious tern activity.
	15	25/06/2013	17:15	0						
	15	10/07/2013	08:45	0						
	15	24/07/2013	13:00	0						
	15	07/08/2013	09:30	0						
	15	19/08/2013	16:15	0						

Appendix E

2013 Sandwich Tern VP Survey Results

The following table shows all of the Sandwich tern observations made during the period May 2013 to the end of August 2013. If no Sandwich terns were recorded from a VP on a particular date, then this was still included in the table and denoted by 0 birds recorded.

Table 1: Sandwich Tern - Summer VP surveys results (May 2013 to August 2013)

Target Note	VP	Date	Time	Number of Sandwich terns	Recording interval (secs)	Total flight duration (secs)	Estimated distance from shore (m)	Estimated distance - /+ error (m)	Behaviour	Direction if commuting	Notes and comments
	1	13/05/2013	15:35	0							
	1	30/05/2013	10:55	0							2 Sandwich seen at Minsmere after survey
1	1	11/06/2013	11:30	1			0 - 1000	200	Few straight out to sea approx. 1km from Minsmere		60 common terns and 2 Sandwich terns counted on Minsmere scrape. RSPB noticeboard show approx. 40+ common terns and 4 (2 pairs) Sandwich terns; therefore, our brief count approx. correct.
2	1	11/06/2013	11:40	1			1000 - 0	200	Commuting	From sea to scrape	
3	1	27/06/2013	10:32	2			100	20	Commuting	South	Birds coming and going from Minsmere scrape.
4	1	27/06/2013	10:40	3			200	40	Commuting	South	Approx. 30 Sandwich terns counted at Minsmere scrape.

NOT PROTECTIVELY MARKED

Target Note	VP	Date	Time	Number of Sandwich terns	Recording interval (secs)	Total flight duration (secs)	Estimated distance from shore (m)	Estimated distance - /+ error (m)	Behaviour	Direction if commuting	Notes and comments
5	1	27/06/2013	11:05	3			100	40	Commuting	North towards scrape	
6	1	27/06/2013	11:14	2			100	40	Commuting	North	
7	1	10/07/2013	11:40	1			30	5	Foraging	North	Foraging along coast
	1	26/07/2013	10:00	0							3 Sandwich terns reported by RSPB on scrape at Minsmere.
	1	07/08/2013	12:40	0							
	1	21/08/2013	09:35	0							
	2	15/05/2013	11:20	0							
	2	28/05/2013	06:10	0							
	2	10/06/2013	16:00	0							
	2	27/06/2013	11:30	0							
	2	09/07/2013	14:45	0							
	2	26/07/2013	09:00	0							
8	2	07/08/2013	08:20	2			40	20	Foraging		Foraging then flew south.
	2	20/08/2013	08:40	0							
	3	15/05/2013	10:20	0							
	3	28/05/2013	07:15	0							
	3	10/06/2013	15:00	0							
	3	26/06/2013	17:30	0							
	3	09/07/2013	15:40	0							
	3	26/07/2013	08:00	0							
	3	07/08/2013	07:05	0							
	3	19/08/2013	17:30	0							

NOT PROTECTIVELY MARKED

Target Note	VP	Date	Time	Number of Sandwich terns	Recording interval (secs)	Total flight duration (secs)	Estimated distance from shore (m)	Estimated distance - /+ error (m)	Behaviour	Direction if commuting	Notes and comments
	4	15/05/2013	09:05	0							
	4	28/05/2013	18:30	0							
	4	10/06/2013	14:00	0							
9	4	25/06/2013	11:10	1			500	100	Commuting	North	
10	4	25/06/2013	11:15	2			1500	400	Commuting	North	
	4	09/07/2013	16:40	0							
11	4	25/07/2013	18:40	1	0-30	30	700	200	Commuting	South	
12	4	06/08/2013	18:31	3			20	10	Commuting	North	Suspected 2 adults and one juvenile.
	4	20/08/2013	15:45	0							
	5	15/05/2013	08:05	0							
	5	28/05/2013	19:45	0							
13	5	10/06/2013	13:15	3			1000	200	Commuting	North	
14	5	25/06/2013	09:35	4			700	200	Commuting	North	
15	5	25/06/2013	10:00	4			500	100	Foraging		
16	5	25/06/2013	10:10	2			1500		Commuting	North	
	5	08/07/2013	17:20	0							
	5	25/07/2013	17:30	0							
	5	06/08/2013	19:10	0							
	5	20/08/2013	17:45	0							
	6	15/05/2013	07:00	0							
	6	29/05/2013	09:15	0							
	6	11/06/2013	15:30	0							
	6	25/06/2013	07:30	0							
	6	08/07/2013	18:20	0							

NOT PROTECTIVELY MARKED

Target Note	VP	Date	Time	Number of Sandwich terns	Recording interval (secs)	Total flight duration (secs)	Estimated distance from shore (m)	Estimated distance - /+ error (m)	Behaviour	Direction if commuting	Notes and comments
	6	25/07/2013	19:30	0							
	6	06/08/2013	06:45	0							
	6	20/08/2013	17:45	0							
	7	13/05/2013	17:45	0							
	7	29/05/2013	10:10	0							
17	7	11/06/2013	14:45	3			700	200	Commuting	South	
18	7	11/06/2013	14:50	4			1000	300	Commuting	South	
19	7	25/06/2013	06:50	4			1500	400	Commuting	North	
	7	08/07/2013	19:55	0							
	7	25/07/2013	16:00	0							
	7	06/08/2013	07:45	0							
	7	19/08/2013	18:40	0							
	8	14/05/2013	14:00	0							
	8	29/05/2013	11:44	0							
	8	12/06/2013	06:45	0							
20	8	24/06/2013	17:45	1			500	200	Commuting	South	
	8	09/07/2013	17:50	0							
	8	25/07/2013	06:30	0							
	8	06/08/2013	08:40	0							
	8	20/08/2013	08:00	0							
	9	13/05/2013	19:00	0							
	9	29/05/2013	12:15	0							
21	9	12/06/2013	12:14	2			70	10	Commuting	South	
22	9	12/06/2013	12:15	2			50	10	Commuting	Southwest	
23	9	24/06/2013	17:10	2			1000	200	Commuting	South	
24	9	24/06/2013	17:25	1			500	100	Commuting	South	

NOT PROTECTIVELY MARKED

Target Note	VP	Date	Time	Number of Sandwich terns	Recording interval (secs)	Total flight duration (secs)	Estimated distance from shore (m)	Estimated distance - /+ error (m)	Behaviour	Direction if commuting	Notes and comments
	9	09/07/2013	18:50	0							
25	9	25/07/2013	15:15	8	0-30	30	200	50	Commuting	South	
	9	06/08/2013	10:15	0							
	9	20/08/2013	08:55	0							
	10	14/05/2013	11:55	0							
	10	29/05/2013	14:00	0							
	10	12/06/2013	10:00	0							
26	10	26/06/2013	08:00	2					Commuting	South	Seen inshore along Alde Estuary.
27	10	26/06/2013	08:03	2			100	50	Commuting	South	
	10	09/07/2013	12:40	0							
	10	25/07/2013	13:00	0							
	10	06/08/2013	11:40	0							
	10	20/08/2013	10:15	0							
	11	14/05/2013	10:45	0							
	11	29/05/2013	15:10	0							
	11	09/07/2013	11:35	0							
	11	25/07/2013	11:30	0							
28	11	06/08/2013	13:29	2			25	5	Commuting	South	Pair commuting.
	11	20/08/2013	11:20	0							
	12	14/05/2013	09:15	0							
	12	29/05/2013	16:40	0							2 little tern flying over scrape between VP11 and VP12 during walk back to car.
	12	09/07/2013	10:15	0							

NOT PROTECTIVELY MARKED

Target Note	VP	Date	Time	Number of Sandwich terns	Recording interval (secs)	Total flight duration (secs)	Estimated distance from shore (m)	Estimated distance - /+ error (m)	Behaviour	Direction if commuting	Notes and comments
29	12	25/07/2013	09:50	1	0-30	30	200	50	Commuting	North	
30	12	25/07/2013	10:10	2	0-30	30	500	100	Commuting	South	Some foraging dives.
30	12	25/07/2013	10:10	2	30-45	45	500	100	Commuting	South	Some foraging dives.
31	12	06/08/2013	15:03	2			10	5	Commuting	South	Adult and suspected juvenile.
32	12	20/08/2013	12:46	3	0-45	45	1250	250	Commuting + foraging		
33	12	20/08/2013	13:17	2	0-30	30	1500	250	Commuting		
	13	13/05/2013	14:40	0							
34	13	11/06/2013	10:15	2			40		Commuting from scrape	North	Approx. 40+ pairs of common tern and 4 Sandwich terns on Minsmere scrape.
35	13	26/06/2013	11:05	3			200	50	Commuting	North	
36	13	10/07/2013	10:49	3			0-150	25	Foraging & commuting from Minsmere	East	Flying from Minsmere out to sea.
37	13	10/07/2013	11:00	3			250-0	50	Foraging and commuting to Minsmere	West	Return flight from sea.
38	13	10/07/2013	11:17	2			400-0	50	Foraging and commuting to Minsmere	West	Return flight from sea.

NOT PROTECTIVELY MARKED

Target Note	VP	Date	Time	Number of Sandwich terns	Recording interval (secs)	Total flight duration (secs)	Estimated distance from shore (m)	Estimated distance - /+ error (m)	Behaviour	Direction if commuting	Notes and comments
39	13	10/07/2013	11:28	1			15	10	Foraging and commuting along coast	N	From along coast then to Minsmere.
40	13	10/07/2013	11:29	2			0-500	50	Foraging and commuting from Minsmere	E	From Minsmere out to c.500m.
	13	24/07/2013	13:15	0							
41	13	07/08/2013	11:40	3			60	60	Foraging and commuting	West	Foraging then commuting to Minsmere.
42	13	07/08/2013	11:49	1			250	100	Foraging	North	Flying north foraging.
43	13	07/08/2013	12:04	2			100	100	Commuting from sea to Minsmere	Northwest	Past returning to Minsmere.
	13	21/08/2013	12:00	0							
	14	13/05/2013	13:45	0							
	14	30/05/2013	09:00	0							
44	14	11/06/2013	07:30	5			700	200	Commuting possibly from Minsmere		
45	14	26/06/2013	10:40	1			300	100	Commuting	North	
	14	10/07/2013	09:50	0							
46	14	24/07/2013	14:50	8	0-30	30	500	100	Commuting	North	

NOT PROTECTIVELY MARKED

Target Note	VP	Date	Time	Number of Sandwich terns	Recording interval (secs)	Total flight duration (secs)	Estimated distance from shore (m)	Estimated distance - /+ error (m)	Behaviour	Direction if commuting	Notes and comments
46	14	24/07/2013	14:50	8	30-45	15	500	100	Commuting	North	
	14	07/08/2013	10:30	0							
	14	21/08/2013	11:05	0							
	15	13/05/2013	12:30	0							
	15	30/05/2013	08:00	0							
	15	30/05/2013	10:00	0							
47	15	11/06/2013	06:40	1			1000	200	Commuting	South	
	15	25/06/2013	17:15	0							
	15	10/07/2013	08:45	0							
48	15	24/07/2013	13:20	2			500	100	Commuting	North	Occasional foraging dive.
49	15	24/07/2013	13:30	2			300	100	Commuting	North	
50	15	07/08/2013	09:33	2					Commuting	South	Flying onshore.
	15	19/08/2013	16:15	0							

Appendix F

Inventory of Incidental Seabird Species Recorded During 2013 Tern Species VP Surveys

The following tables list the other bird species recorded incidentally whilst undertaking the little tern surveys:

Table number	Bird species	Table number	Bird species
1	Avocet	23	Ringed plover
2	Barnacle Goose	24	Sand martin
3	Black headed gull	25	Shelduck
4	Common gull	26	Teal
5	Common sandpiper	27	Tern species
6	Common scoter	28	Tufted duck
7	Common tern	29	Wigeon
8	Cormorant		
9	Curlew		
10	Dunlin		
11	Gannet		
12	Great black-backed gull		
13	Grey plover		
14	Herring gull		
15	Kittiwake		
16	Lapwing		
17	Lesser black-backed gull		
18	Little ringed plover		
19	Mallard		
20	Mute swan		
21	Oystercatcher		
22	redshank		

Table 1: Avocet - VP surveys results (May 2013 to August 2013)

Date	VP	Survey start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
11/06/2013	15	06:15	07:00	2	Commuting	Inshore

Table 2: Barnacle goose - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
13/05/2013	7	17:45	18:30	2	Commuting	Onshore
11/06/2013	15	06:15	07:00	10	Commuting	Inshore
11/06/2013	6	15:30	16:15	2	Commuting	Inshore
12/06/2013	8	06:45	07:30	2	Commuting	Inshore
25/06/2013	5	09:30	10:15	25	Commuting	Inshore

Table 3: Black headed gull - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes
29/03/2013	7	10:10	10:55	30	Commuting/Foraging	Onshore and inshore	
29/03/2013	8	11:10	11:55	30	Commuting/Foraging	Onshore and inshore	
30/03/2013	15	08:00	08:45	40	Commuting/Foraging	Onshore	
13/05/2013	15	12:30	13:15	10	Foraging	Onshore	
13/05/2013	14	13:45	14:30	1	Resting	Onshore	
13/05/2013	13	14:40	15:25	8	Foraging/resting	Onshore	
13/05/2013	1	15:35	16:20	15	Commuting/Foraging	Onshore	
13/05/2013	7	17:45	18:30	4	Commuting	Onshore	
13/05/2013	9	19:00	19:45	25	Foraging/resting	Onshore	
14/05/2013	8	14:00	14:45	40	Foraging/resting	Onshore	
15/05/2013	6	09:15	10:00	6	Resting/commuting	Onshore	

NOT PROTECTIVELY MARKED

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes
15/05/2013	3	10:20	11:05	1	Resting/foraging	Onshore	
28/05/2013	2	06:10	06:55	40	Foraging/commuting	Onshore and inshore	
28/05/2013	3	07:15	08:00	60	Commuting/Foraging	Onshore and inshore	
28/05/2013	4	18:30	19:15	20	Commuting/Foraging	Onshore	
28/05/2013	5	19:45	20:30	4	Commuting	Onshore	
29/05/2013	6	09:15	10:00	11	Commuting	Onshore and inshore	
29/05/2013	9	12:15	13:00	10	Resting/commuting	Onshore	
29/05/2013	10	14:00	14:45	3	Commuting	Onshore	
29/05/2013	12	16:40	17:25	10	Foraging/commuting	Onshore and inshore	
30/05/2013	14	09:00	09:45	40	Foraging	Onshore and inshore	
30/05/2013	13	10:00	10:45	60	Foraging flights between Minsmere and inshore waters adjacent	Onshore and inshore	
30/05/2013	1	10:55	11:40	40	Foraging along coast	Onshore and inshore	
10/06/2013	4	13:00	13:45	10	Commuting	Inshore	
10/06/2013	5	13:00	13:45	75	Commuting parallel to shore c.3km	Inshore	Part of a mixed flock of 300. Constant moderate level of gull activity 3-5km offshore beyond visual range.
10/06/2013	4	14:00	14:15	4	Commuting	Inshore	
10/06/2013	3	15:00	15:45	4	Commuting		
10/06/2013	2	16:00	16:45	10	Commuting	Inshore	
11/06/2013	15	06:15	07:00	50	Commuting	Inshore	
11/06/2013	14	07:15	08:00	40	Commuting - regular flight lines	Onshore and inshore	
11/06/2013	13	09:45	10:30	10	Foraging/commuting	Inshore	
11/06/2013	1	11:15	12:00	10	Commuting		
11/06/2013	7	14:30	15:15	2	Commuting	Inshore	

NOT PROTECTIVELY MARKED

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes
11/06/2013	6	15:30	16:15	4	Commuting	Inshore	
12/06/2013	8	06:45	07:30	10	Commuting	Inshore	
12/06/2013	10	10:00	10:45	10	Commuting	Inshore	
12/06/2013	9	11:45	12:30	4	Commuting	Inshore	
24/06/2013	9	16:45	17:30	20	Foraging	Onshore	
24/06/2013	8	17.45	18:30	10	Commuting	Inshore	
25/06/2013	7	06:30	07:15	40	Foraging	Inshore	
25/06/2013	6	07:30	08:15	20	Resting	Inshore	
25/06/2013	5	09:30	10:15	25	Foraging	Inshore	
25/06/2013	4	10:30	11:15	20	Foraging		
25/06/2013	15	17:15	18:00	20	Foraging	Inshore	
26/06/2013	10	07:30	08:15	10	Commuting/Foraging	Inshore	
26/06/2013	14	10:00	10:45	20	Foraging		Seen with common tern.
26/06/2013	13	11:00	11:45	40	Foraging	Inshore	Foraging between sea and nesting pairs in Minsmere scrape.
26/06/2013	3	17:30	18:15	30	Foraging	Inshore	
26/06/2013	3	17:30	18:15	60	Foraging in vicinity of outfall		
27/06/2013	1	10:30	11:15	60	Foraging	Inshore	
27/06/2013	2	11:30	12:15	20	Foraging	Inshore	
08/07/2013	5	17:20	18:05	2	Commuting	Inshore	
08/07/2013	7	19:10	19:55	3	Foraging		
09/07/2013	2	14:45	15:30	50	Foraging	Inshore	
09/07/2013	3	15:40	16:25	60	Foraging		
09/07/2013	4	16:40	17:25	9	Commuting and resting	Inshore and onshore	
09/07/2013	8	17:50	18:35	25	Foraging	Onshore	
09/07/2013	9	18:50	19:35	40	Foraging	Onshore	
10/07/2013	15	08:45	09:30	15	Foraging	Onshore and inshore	

NOT PROTECTIVELY MARKED

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes
10/07/2013	14	09:50	10:35	11	Foraging	Onshore and inshore	
10/07/2013	13	10:45	11:30	20	Foraging and commuting to/from Minsmere	Inshore and onshore	
10/07/2013	1	11:40	12:25	10	Foraging	Inshore	
24/07/2013	15	13:00	13:45	20	Commuting and resting on sea	Inshore	
24/07/2013	14	14:15	15:00	10	Resting		
24/07/2013	13	15:15	16:00	10	Passing through		
25/07/2013	8	06:30	07:15	4	Flying though	Inshore	
25/07/2013	10	13:00	13:45	4	Foraging	Inshore	
25/07/2013	9	15:00	15:45	4	Flying though		
25/07/2013	7	16:00	16:45	40	Foraging	Inshore	
25/07/2013	5	17:30	16:15	20	Foraging	Inshore	
25/07/2013	4	18:30	19:15	20	Foraging	Inshore	
26/07/2013	3	08:00	08:45	50	Resting on water	Inshore	
26/07/2013	2	09:00	09:45	100	Foraging		
26/07/2013	1	10:00	10:45	10	Foraging	Inshore	
06/08/2013	6	06:45	07:30	3	Resting	Onshore	
06/08/2013	8	08:40	09:25	13	Foraging + Resting	Onshore	
06/08/2013	9	10:15	11:00	6	Foraging	Onshore	
06/08/2013	11	13:05	13:50	12	Foraging + resting	Inshore	
06/08/2013	4	18:00	18:45	18	Foraging + commuting	Inshore/onshore	
07/08/2013	3	07:05	07:50	40	Foraging + resting	Onshore/inshore	
07/08/2013	2	08:15	09:00	50	Foraging	Inshore	
07/08/2013	1	09:30	10:15	5	Foraging	Onshore	
07/08/2013	14	10:30	11:15	10	Foraging	Inshore/Onshore	

NOT PROTECTIVELY MARKED

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes
07/08/2013	13	11:35	12:20	25	Foraging + commuting	Inshore/onshore	
19/08/2013	15	16:15	17:00	42	Commuting/Resting	Inshore	
19/08/2013	3	17:30	18:15	30+	Resting/Foraging/Commuting	Inshore	
19/08/2013	7	18:40	19:25	16	Foraging/Resting/Commuting	Inshore/Onshore	
20/08/2013	4	15:45	16:30	20	Resting	Inshore	
20/08/2013	6	17:45	18:30	2	Foraging	Onshore	
21/08/2013	2	08:40	09:25	20	Foraging	Inshore	

Table 4: Common gull - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes and comments
10/06/2013	4	14:00	14:15	15	Resting	Inshore	Mixed flock of 30 with herring gull
11/06/2013	13	09:45	10:30	4	Commuting	Inshore	

Table 5: Common sandpiper - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
20/08/2013	10	10:15	11:00	1	Foraging on shingle	Onshore

Table 6: Common scoter - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
25/06/2013	15	17:15	18:00	80	Resting	Inshore
26/06/2013	14	10:00	10:45	180	Resting on water	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
27/06/2013	1	10:30	11:15	100	loafing/Resting	Inshore
24/07/2013	14	14:15	15:00	70	Commuting	Inshore
25/07/2013	11	11:30	12:15	10	Commuting	Inshore
25/07/2013	10	13:00	13:45	5	Commuting	Inshore
25/07/2013	7	16:00	16:45	100	Commuting south	Inshore
20/08/2013	11	11:20	12:05	10	Resting	Inshore
20/08/2013	12	12:45	13:30	50	Commuting	Inshore
20/08/2013	4	15:45	16:30	6	Commuting	Inshore
21/08/2013	1	09:35	10:20	c.15	Resting	Inshore

Table 7: Common tern - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes and Comments
29/03/2013	8	11:10	11:55	2	Foraging along coast	Onshore and inshore	
28/05/2013	4	18:30	19:15	2	Commuting south along coast	Inshore	
29/05/2013	9	12:15	13:00	1	Commuting south	Inshore	
29/05/2013	10	14:00	14:45	2	Commuting/Foraging	Onshore	
29/05/2013	11	15:10	15:55	2	Foraging	Onshore and inshore	
30/05/2013	14	09:00	09:45	15	Foraging	Onshore and inshore	
30/05/2013	13	10:00	10:45	c. 80	Foraging flights between Minsmere and inshore waters adjacent	Onshore and inshore	
30/05/2013	1	10:55	11:40	20	Foraging along coast c.100m from shore	Onshore and inshore	

NOT PROTECTIVELY MARKED

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes and Comments
11/06/2013	14	07:15	08:00	5	Commuting, flights possibly from Minsmere		
11/06/2013	13	09:45	10:30	50	Foraging 30 - 500m	Offshore	Lots of activity offshore of Minsmere scrape.
11/06/2013	1	11:15	12:00	40	Foraging 30m-1km offshore. Constant flights from scrape to sea and back		
25/06/2013	15	17:15	18:00	10	Commuting	Inshore	
26/06/2013	14	10:00	10:45	20	Foraging	Inshore	Constant foraging activity to and from Minsmere scrape. 30-40 at a time going north to Dunwich and up to 700m offshore. All picking prey items from water surface. Map shows edge of foraging.
26/06/2013	13	11:00	11:45	40	Foraging	Inshore	Constant activity between sea and Minsmere scrape.
27/06/2013	1	10:30	11:15	30	Foraging	Offshore	Foraging approx. 300m offshore. See map for foraging area. Birds picking up prey items from sea surface. Approx. 60 counted at Minsmere scrape. Map from 27/06/13 11:30 VP2 survey also indicates foraging area.
09/07/2013	2	14:45	15:30	3	Foraging	Inshore	
10/07/2013	15	08:45	09:30	4	Foraging	Inshore	
10/07/2013	14	09:50	10:35	3	Foraging	Inshore	
10/07/2013	13	10:45	11:30	c.15	Foraging and commuting to/from Minsmere	Inshore and onshore	
24/07/2013	15	13:00	13:45	2	Commuting North	Inshore	
26/07/2013	1	10:00	10:45	2	Foraging	Inshore	20 reported by RSPB on scrape at Minsmere
06/08/2013	8	08:40	09:25	4	Flying through	Inshore	
06/08/2013	9	10:15	11:00	6	Flying through / F	Inshore	

NOT PROTECTIVELY MARKED

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes and Comments
06/08/2013	4	18:00	18:45	4	Flying through	Inshore	
07/08/2013	3	07:05	07:50	6	Foraging	Inshore	
07/08/2013	1	09:30	10:15	2	Flying through	Inshore	
07/08/2013	14	10:30	11:15	3	Foraging	Inshore	
07/08/2013	13	11:35	12:20	6	Foraging + commuting	Inshore/onshore	
07/08/2013	1	12:40	13:25	5	Foraging and commuting	Inshore	

Table 8: Cormorant - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
30/03/2013	15	08:00	08:45	4	Foraging/Commuting	Inshore
13/05/2013	7	17:45	18:30	3	Commuting	Onshore
13/05/2013	9	19:00	19:45	2	Commuting	Inshore
14/05/2013	12	09:15	10:00	18	Foraging/Commuting	Onshore and Inshore
14/05/2013	11	10:45	11:30	9	Commuting	Inshore
14/05/2013	10	11:55	12:40	11	Commuting/Foraging	Inshore
14/05/2013	8	14:00	14:45	11	Foraging/Commuting	Inshore
15/05/2013	4	09:15	10:00	1	Commuting	Inshore
15/05/2013	2	11:20	12:05	1	Commuting	Inshore
28/05/2013	2	06:10	06:55	4	Resting	Inshore
29/05/2013	10	14:00	14:45	2	Commuting	Inshore
29/05/2013	12	16:40	17:25	6	Foraging/Commuting	Inshore
10/06/2013	4	13:00	13:45	2	Commuting	Inshore
10/06/2013	3	15:00	15:45	1	Roosting on rig	Inshore
10/06/2013	2	16:00	16:45	1	Resting on rig	Inshore
11/06/2013	6	03:30	16:15	2	Commuting	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
11/06/2013	13	09:45	10:30	1	Commuting	Inshore
12/06/2013	10	10:00	10:45	1	Commuting	Inshore
24/06/2013	8	17:45	18:30	1	Commuting	Inshore
25/06/2013	7	06:30	07:15	2	Foraging	Inshore
25/06/2013	15	17:15	18:00	1	Commuting	Inshore
26/06/2013	3	17:30	18:15	20	Roosting on rigs	Inshore
27/06/2013	1	10:30	11:15	2	Commuting	
27/06/2013	2	11:30	12:15	10	Foraging/Commuting	Inshore
08/07/2013	7	19:10	19:55	1	Commuting	
09/07/2013	12	10:15	11:00	8	Foraging	Inshore
09/07/2013	11	11:35	12:20	1	Commuting	Inshore
09/07/2013	3	15:40	16:25	5	Resting on tower	
09/07/2013	8	17:50	18:35	2	Commuting	Inshore
09/07/2013	9	18:50	19:35	6	Commuting	Inshore
10/07/2013	14	09:50	10:35	4	Foraging	Inshore
10/07/2013	1	11:40	12:25	4	Foraging	Inshore
25/07/2013	12	09:45	10:00	2	Foraging	Inshore
25/07/2013	12	09:45	10:00	4	Commuting	Inshore
25/07/2013	5	17:30	16:15	2	Foraging	Inshore
26/07/2013	2	09:00	09:45	4	Roosting on rigs	
06/08/2013	11	13:05	13:50	3	Foraging	Inshore
06/08/2013	12	14:40	15:25	4	Foraging	Inshore
06/08/2013	4	18:00	18:45	6	Flying through	Inshore
06/08/2013	5	19:10	19:55	1	Flying through	Onshore
07/08/2013	3	07:05	07:50	10	Foraging + resting	Inshore
07/08/2013	2	08:15	09:00	13	Foraging	Inshore
07/08/2013	1	09:30	10:15	1	Flying through	Inshore
07/08/2013	13	11:35	12:20	4	Foraging	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
07/08/2013	1	12:40	13:25	10	Foraging and commuting	Inshore
19/08/2013	15	16:15	17:00	1	Commuting	inshore
19/08/2013	3	17:30	18:15	20+	Resting/Foraging	Inshore
20/08/2013	9	08:55	09:40	20	Commuting	Inshore
20/08/2013	6	17:45	18:30	6	Commuting	Inshore
21/08/2013	2	08:40	09:25	1	Resting	Inshore
21/08/2013	14	11:05	11:50	15	Commuting	Inshore
21/08/2013	1	09:35	10:20	2	Commuting	Inshore
21/08/2013	13	12:00	12:45	41	Commuting	Inshore

Table 9: Curlew - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
29/05/2013	10	14:00	14:45	5	Calling + foraging on salt marsh	Onshore
24/07/2013	15	13:00	13:45	1	Commuting	Inshore

Table 10: Dunlin - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
14/05/2013	10	11:55	12:40	25	Resting/foraging	Onshore
20/08/2013	12	12:45	13:30	20	Commuting	Inshore

Table 11: Gannet - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
24/06/2013	8	17.45	18:30	60	Commuting	Inshore

Table 12: Great black-backed Gull - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes and comments
29/03/2013	8	11:10	11:55	1	Resting	Onshore	
13/05/2013	15	12:30	13:15	1	Commuting	Inshore	
13/05/2013	14	13:45	14:30	3	Commuting	Inshore water	
13/05/2013	13	14:40	15:25	5	Commuting	Inshore	
13/05/2013	1	15:35	16:40	1	Resting	Inshore	
13/05/2013	7	17:45	18:30	7	Commuting/resting	Onshore and Inshore	
14/05/2013	12	09:15	10:00	2	Commuting	Inshore	
14/05/2013	11	10:45	11:30	6	Resting	Onshore	
14/05/2013	8	14:00	14:45	3	Resting	Inshore	
10/06/2013	4	13:00	13:45	10	Commuting	Inshore	
10/06/2013	5	13:00	13:45	75	Commuting parallel to shore c.3km	Inshore	Part of a mixed flock of 300. Constant moderate level of gull activity 3-5km offshore beyond visual range.
10/06/2013	2	16:00	16:45	4	Commuting	Inshore	
11/06/2013	6	03:30	16:15	2	Commuting	Inshore	
11/06/2013	13	09:45	10:30	1	Commuting	Inshore	
12/06/2013	8	06:45	07:30	4	Commuting	Inshore	
12/06/2013	10	10:00	10:45	2	Commuting	Inshore	
24/06/2013	8	17.45	18:30	2	Resting	Inshore	
25/06/2013	7	06:30	07:15	4	Foraging	Inshore	
26/06/2013	10	07:30	08:15	10	Commuting/foraging	Inshore	
26/06/2013	3	17:30	18:15	4	Nesting on rigs	Inshore	
25/07/2013	7	16:00	16:45	1	Flying though	Inshore	
26/07/2013	2	09:00	09:45	2	Roosting on rigs		
07/08/2013	3	07:05	07:50	3	Foraging	Inshore	

NOT PROTECTIVELY MARKED

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes and comments
07/08/2013	2	08:15	09:00	4	Foraging	Inshore	
19/08/2013	15	16:15	17:00	1	Commuting	Inshore	
19/08/2013	7	18:40	19:25	2	Resting	Inshore	
20/08/2013	8	08:00	08:45	10+	Resting/foraging	Inshore/onshore	
20/08/2013	10	10:15	11:00	1	Commuting		
20/08/2013	12	12:45	13:30	2	Commuting	Inshore	
20/08/2013	6	17:45	18:30	1	Commuting	Inshore	
21/08/2013	2	08:40	09:25	5	Resting	Inshore	
21/08/2013	13	12:00	12:45	1	Resting	Inshore	

Table 13: Grey Plover - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
20/08/2013	11	11:20	12:05	3	Commuting	Inshore

Table 14: Herring gull - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes and Comments
29/03/2013	8	11:10	11:55	40	Resting/foraging	Onshore	
30/03/2013	15	08:00	08:45	20	Resting	Onshore	
13/05/2013	13	14:40	15:25	4	Commuting	Inshore	
13/05/2013	1	15:35	16:20	2	Commuting	Onshore	
13/05/2013	7	17:45	18:30	10	Resting	Onshore	
13/05/2013	9	19:00	19:45	30	Foraging/resting	Onshore	
14/05/2013	12	09:15	10:00	15	Commuting	Onshore and Inshore	

NOT PROTECTIVELY MARKED

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes and Comments
14/05/2013	10	11:55	12:40	25	Resting/Breeding onshore	Onshore	
14/05/2013	8	14:00	14:45	20	Resting/foraging	Onshore	
15/05/2013	6	07:00	07:45	4	Resting	Onshore	
15/05/2013	5	08:05	08:50	6	Commuting	Onshore	
15/05/2013	4	09:15	10:00	15	Resting/commuting	Onshore	
15/05/2013	3	10:20	11:05	3	Resting/foraging	Inshore	
28/05/2013	2	06:10	06:55	25	Resting/foraging	Inshore	
28/05/2013	3	07:15	08:00	20	Resting/commuting/foraging	Onshore and Inshore	
28/05/2013	4	18:30	19:15	3	Resting	Onshore	
29/05/2013	9	12:15	13:00	15	Resting	Onshore	
29/05/2013	10	14:00	14:45	4	Resting	Onshore	
29/05/2013	11	15:10	15:55	2	Resting	Onshore	
29/05/2013	12	16:40	17:25	10	Foraging/commuting	Onshore and Inshore	
30/05/2013	1	10:55	11:40	25	Foraging/resting	Onshore and Inshore	
10/06/2013	5	13:00	13:45	75	Commuting parallel to shore c.3km	Inshore	Part of a mixed flock of 300. Constant moderate level of gull activity 3-5km offshore beyond visual range.
10/06/2013	4	14:00	14:15	15	Resting	Inshore	Mixed flock of 30 with common gull.
10/06/2013	3	15:00	15:45	10	Resting on rig	Inshore	
10/06/2013	2	16:00	16:45	20	Resting on rig	Inshore	
11/06/2013	1	11:15	12:00	4	Commuting		
12/06/2013	8	06:45	07:30	10	Commuting/on beach	Inshore and on beach	Part of mixed flock of 20.
12/06/2013	10	10:00	10:45	2	Commuting	Inshore	
12/06/2013	9	11:45	12:30	2	Commuting	Inshore	
24/06/2013	9	16:45	17:30	2	Commuting	Inshore	
24/06/2013	8	17.45	18:30	3	Commuting	Inshore	

NOT PROTECTIVELY MARKED

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes and Comments
25/06/2013	7	06:30	07:15	20	Foraging	Inshore	
25/06/2013	4	10:30	11:15	15	Foraging		Part of mixed flock with lesser black backed gull.
26/06/2013	3	17:30	18:15	20	Nesting on rigs	Inshore	
08/07/2013	6	18:20	19:05	2	Commuting		
08/07/2013	7	19:10	19:55	10	Commuting/foraging		
09/07/2013	11	11:35	12:20	4	Commuting	Inshore and on shore	
09/07/2013	10	12:40	13:25	4	Foraging		
09/07/2013	2	14:45	15:30	30	Foraging	Inshore	
09/07/2013	3	15:40	16:25	25	Foraging and resting		
09/07/2013	4	16:40	17:25	5	Commuting and Resting	In shore and onshore	
09/07/2013	8	17:50	18:35	30	Foraging	Onshore	
09/07/2013	9	18:50	19:35	20	Foraging	Onshore	
10/07/2013	15	08:45	09:30	7	Foraging	Onshore and Inshore	
10/07/2013	14	09:50	10:35	9	Foraging	Onshore and inshore	
10/07/2013	13	10:45	11:30	10	Foraging and commuting to/from Minsmere	Inshore and onshore	
10/07/2013	1	11:40	12:25	5	Foraging	Inshore	
24/07/2013	15	13:00	13:45	5	Commuting	Inshore	
25/07/2013	9	15:00	15:45	4	Flying through		
25/07/2013	7	16:00	16:45	10	Flying through	Inshore	
25/07/2013	5	17:30	16:15	4	Flying through	Inshore	
25/07/2013	6	19:30	20:15	4	Flying through	Inshore	
26/07/2013	3	08:00	08:45	40	Roosting on rig	Inshore	
26/07/2013	3	08:00	08:45	20	Foraging	Inshore	
26/07/2013	2	09:00	09:45	10	Foraging		

NOT PROTECTIVELY MARKED

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes and Comments
06/08/2013	8	08:40	09:25	10	Foraging + resting	Inshore/onshore	
06/08/2013	9	10:15	11:00	3	Resting	Onshore	
06/08/2013	11	13:05	13:50	4	Foraging + resting	Inshore/onshore	
06/08/2013	12	14:40	15:25	25	Foraging + resting	Onshore	
06/08/2013	4	18:00	18:45	12	Foraging + resting	Inshore/onshore	
06/08/2013	5	19:10	19:55	8	Flying through	Onshore	
07/08/2013	3	07:05	07:50	15	Foraging	Inshore	
07/08/2013	2	08:15	09:00	35	Foraging	Inshore	
07/08/2013	1	09:30	10:15	4	Foraging	Onshore	
07/08/2013	13	11:35	12:20	5	Foraging + commuting	Inshore/onshore	
07/08/2013	1	12:40	13:25	15	Foraging + resting	Inshore/onshore	
19/08/2013	3	17:30	18:15	30+	Resting/foraging/Commuting	Inshore	
19/08/2013	7	18:40	19:25	8	Resting/foraging/Commuting	Inshore/onshore	
20/08/2013	8	08:00	08:45	80+	Resting/foraging	Inshore/onshore	
20/08/2013	9	08:55	09:40	30+	Resting/commuting	Inshore/onshore	
20/08/2013	10	10:15	11:00	6	Resting/commuting	Inshore	
20/08/2013	11	11:20	12:05	~10	Resting	Inshore	
20/08/2013	12	12:45	13:30	10+	Resting/commuting	Inshore	
20/08/2013	4	15:45	16:30	8	Foraging/commuting	Inshore/onshore	
20/08/2013	5	16:40	17:25	7	Resting	Inshore	
20/08/2013	6	17:45	18:30	9	Foraging	Onshore	
21/08/2013	2	08:40	09:25	50+	Foraging/resting	Inshore	
21/08/2013	14	11:05	11:50	2	Commuting	Inshore	
21/08/2013	1	09:35	10:20	3	Commuting	Inshore	
21/08/2013	13	12:00	12:45	6	Commuting	Inshore/onshore	

NOT PROTECTIVELY MARKED

Table 15: Kittiwake - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Offshore or inshore waters	Notes and comments
29/03/2013	7	10:10	10:55	1	Commuting	Inshore	
13/05/2013	15	12:30	13:15	1	Commuting	Inshore	
13/05/2013	1	15:35	16:20	3	Commuting	Inshore	
15/05/2013	3	10:20	11:05	250	Breeding on towers	Inshore	
15/05/2013	2	11:20	12:05	250	Breeding on towers	Inshore	
28/05/2013	2	06:10	06:55	250	Nesting on towers	Inshore	
28/05/2013	3	07:15	08:00	300	Nesting on towers	Inshore	
28/05/2013	4	18:30	19:15	6	Foraging/commuting	Onshore and Inshore	
30/05/2013	14	09:00	09:45	6	Commuting	Inshore	
30/05/2013	13	10:00	10:45	1	Foraging/commuting	Inshore	
30/05/2013	1	10:55	11:40	12	Foraging/commuting along coast	Inshore	
10/06/2013	3	15:00	15:45	88	Nesting on rig	Inshore	Number can easily be doubled due to birds nesting behind and underneath top structure
10/06/2013	3	15:00	15:45	40	Resting on water	Inshore	
10/06/2013	2	16:00	16:45	86+50	lots of activity near second rig, KI on rig		
11/06/2013	6	03:30	16:15	1	Commuting	Inshore	
11/06/2013	13	09:45	10:30	1	Commuting	Inshore	
26/06/2013	3	17:30	18:15	105	Nesting on rig		Not all birds on rig are visible
26/06/2013	3	17:30	18:15	95	Nesting on other rig		Not all birds on rig are visible
08/07/2013	5	17:20	18:05	7	Commuting	Inshore	
09/07/2013	2	14:45	15:30	c.300	Foraging and breeding	Inshore	
09/07/2013	3	15:40	16:25	c.250	Foraging and breeding		
10/07/2013	14	09:50	10:35	2	Commuting	Inshore	
10/07/2013	13	10:45	11:30	2	Commuting	Inshore	

NOT PROTECTIVELY MARKED

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Offshore or inshore waters	Notes and comments
10/07/2013	1	11:40	12:25	16	Foraging	Inshore	
24/07/2013	14	14:15	15:00	1	Commuting	Inshore	
24/07/2013	13	15:15	16:00	2	Passing through		
25/07/2013	11	11:30	12:15	1	Flying though	Inshore	
26/07/2013	3	08:00	08:45	140	Nesting on first rig	Inshore	Under estimate as not all birds at rig are visible. Figure includes young birds.
26/07/2013	3	08:00	08:45	20	Foraging	On sea	
26/07/2013	2	09:00	09:45	200	Nesting on second rig		
26/07/2013	2	09:00	09:45	40	Foraging		Constant foraging activity during 45 minute VP in the vicinity of the outfall.
06/08/2013	4	18:00	18:45	30	Foraging + commuting	Inshore	
07/08/2013	3	07:05	07:50	c200	Foraging + resting	Inshore	
07/08/2013	2	08:15	09:00	c. 250	Foraging and resting	Inshore	
07/08/2013	13	11:35	12:20	8	Commuting and Foraging	Inshore	
07/08/2013	1	12:40	13:25	c40	Foraging and commuting	Inshore	
19/08/2013	3	17:30	18:15	100+	Foraging/resting on platforms	Inshore	
21/08/2013	2	08:40	09:25	8	Resting	Inshore	

Table 16: Lapwing - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
29/05/2013	11	15:10	15:55	2	Breeding behind sea wall	Onshore
30/03/2013	15	08:00	08:45	1	Calling	Onshore

Table 17: Lesser black-backed Gull - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes and Comments
29/03/2013	7	10:10	10:55	10	Commuting/foraging	Onshore and Inshore	
29/03/2013	8	11:10	11:55	6	Resting/foraging	Onshore	
30/03/2013	15	08:00	08:45	10	Resting	Onshore	
14/05/2013	11	10:45	11:30	12	Resting	Onshore	
14/05/2013	10	11:55	12:40	c.300	Resting/Breeding onshore	Onshore	
14/05/2013	8	14:00	14:45	40	Resting/foraging	Onshore	
15/05/2013	4	09:15	10:00	10	Resting/commuting	Onshore	
15/05/2013	3	10:20	11:05	5	Resting/commuting	Inshore	
15/05/2013	2	11:20	12:05	5	Resting/commuting	Inshore	
28/05/2013	2	06:10	06:55	10	Resting/foraging	Inshore	
28/05/2013	3	07:15	08:00	30	Resting/commuting	Inshore	
28/05/2013	4	18:30	19:15	18	Resting/commuting	Onshore and Inshore	
28/05/2013	5	19:45	20:30	11	Commuting	Onshore and Inshore	
29/05/2013	6	09:15	10:00	17	Commuting	Onshore and Inshore	
29/05/2013	9	12:15	13:00	5	Commuting	Inshore	
29/05/2013	10	14:00	14:45	80	Nesting on beach, etc.	Onshore	
29/05/2013	11	15:10	15:55	60	Resting/commuting	Onshore	
29/05/2013	12	16:40	17:25	40	Foraging/commuting	Onshore and Inshore	
30/05/2013	14	09:00	09:45	25	Foraging/resting	Onshore and Inshore	
30/05/2013	13	10:00	10:45	2	Foraging/resting	Onshore and Inshore	
30/05/2013	1	10:55	11:40	50	Foraging behind fishing boat	Inshore	
10/06/2013	5	13:00	13:45	75	Commuting parallel to shore c.3km	Inshore	Part of a mixed flock of 300. Constant moderate level of gull activity 3-5km offshore beyond visual range.
11/06/2013	6	03:30	16:15	2	Commuting	Inshore	

NOT PROTECTIVELY MARKED

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes and Comments
12/06/2013	8	06:45	07:30	10	Commuting/on beach	Inshore and on beach	Part of mixed flock of 20.
12/06/2013	9	11:45	12:30	2	Commuting	Inshore	
24/06/2013	8	17:45	18:30	3	Commuting	Inshore	
25/06/2013	4	10:30	11:15	15	Foraging		Part of mixed flock with herring gull.
26/06/2013	10	07:30	08:15	20	Commuting/foraging	Inshore	
26/06/2013	3	17:30	18:15	10	Nesting on rigs	Inshore	
08/07/2013	5	17:20	18:05	4	Commuting	Inshore	
08/07/2013	6	18:20	19:05	3	Commuting		
08/07/2013	7	19:10	19:55	2	Commuting		
09/07/2013	12	10:15	11:00	3	Commuting	Inshore	
09/07/2013	11	11:35	12:20	6	Resting on beach and F	Inshore and on shore	
09/07/2013	10	12:40	13:25	4	Resting on beach		
09/07/2013	2	14:45	15:30	10	Resting	Onshore	
09/07/2013	3	15:40	16:25	15	Resting/foraging		
09/07/2013	4	16:40	17:25	3	Resting/commuting	Inshore and onshore	
09/07/2013	8	17:50	18:35	11	Foraging	Onshore	
10/07/2013	14	09:50	10:35	4	Foraging	Inshore	
10/07/2013	13	10:45	11:30	4	Foraging and Commuting to/from Minsmere	Inshore and onshore	
10/07/2013	1	11:40	12:25	6	Foraging	Inshore	
24/07/2013	15	13:00	13:45	10	Commuting	Inshore	
24/07/2013	13	15:15	16:00	4	Passing through		
25/07/2013	12	09:45	10:00	6	Commuting	Inshore	
25/07/2013	11	11:30	12:15	10	Flying though	Inshore	
25/07/2013	10	13:00	13:45	4	Flying though	Inshore	
25/07/2013	9	15:00	15:45	3	Flying though		

NOT PROTECTIVELY MARKED

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes and Comments
26/07/2013	2	09:00	09:45	20	Foraging		
06/08/2013	6	06:45	07:30	1	Resting	Onshore	
06/08/2013	7	07:45	08:30	6	Foraging + resting	Inshore/onshore	
06/08/2013	8	08:40	09:25	5	Foraging + resting	Onshore	
06/08/2013	9	10:15	11:00	1	Foraging	Onshore	
06/08/2013	10	11:40	12:25	15	Resting	Onshore	
06/08/2013	4	18:00	18:45	10	Foraging + resting	Inshore	
07/08/2013	3	07:05	07:50	30	Foraging + resting	Inshore	
07/08/2013	2	08:15	09:00	16	Foraging	Inshore	
07/08/2013	14	10:30	11:15	12	Resting	Onshore	
19/08/2013	15	16:15	17:00	7	Commuting/resting	Inshore	

Table 18: Little ringed plover - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
29/05/2013	10	14:00	14:45	1 pair	Nesting on shingle	Onshore

Table 19: Mallard - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
15/05/2013	5	08:05	08:55	4	Commuting	Onshore
29/05/2013	10	14:00	14:45	1	Foraging	Onshore
30/05/2013	13	10:00	10:45	2	Commuting	Inshore

Table 20: Mute swan - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
30/05/2013	13	10:00	10:45	2	Commuting	Inshore

Table 21: Oystercatcher - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
30/03/2013	15	08:00	08:45	2	Circling and calling	Onshore
13/05/2013	15	12:30	13:15	1	Commuting	Inshore
14/05/2013	11	10:45	11:30	2	Breeding on shingle	Onshore
14/05/2013	10	11:55	12:40	4	Breeding on shore	Onshore
28/05/2013	3	07:15	08:00	1	Commuting	Inshore
29/05/2013	10	14:00	14:45	3 pairs	Nesting on shingle	Onshore
29/05/2013	11	15:10	15:55	2	Breeding on shingle	Onshore
30/05/2013	1	10:55	11:40	1	Alarm calling on beach	Onshore
11/06/2013	15	06:15	07:00	5	Commuting	Onshore
12/06/2013	9	11:45	12:30	1	Commuting	Inshore
25/06/2013	7	06:30	07:15	1	Foraging	Inshore
26/06/2013	10	07:30	08:15	2	Nesting on beach	
09/07/2013	12	10:15	11:00	2	Commuting	Inshore
09/07/2013	9	18:50	19:35	2	Commuting	Inshore
10/07/2013	14	09:50	10:35	1	Commuting	Onshore
10/07/2013	13	10:45	11:30	1	Flying though calling	Onshore
24/07/2013	14	14:15	15:00	4	Commuting	
25/07/2013	8	06:30	07:15	2	Flying through	Inshore
25/07/2013	11	11:30	12:15	4	Flying through	Inshore
25/07/2013	9	15:00	15:45	2	Flying through	
25/07/2013	5	17:30	16:15	4	Flying through	Inshore
06/08/2013	9	10:15	11:00	1	Flying through	Onshore
06/08/2013	10	11:40	12:25	2	Calling + Foraging	Onshore
07/08/2013	1	09:30	10:15	2	Flying through	Inshore
20/08/2013	6	17:45	18:30	1	Commuting	Inshore

Table 22: Redshank - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
28/05/2013	2	06:10	06:55	1	Commuting	Inshore
09/07/2013	3	15:40	16:25	1	Commuting	
06/08/2013	9	10:15	11:00	2	Flying through	Inshore

Table 23: Ringed plover - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
26/06/2013	10	07:30	08:15	4	Nesting on beach	
25/07/2013	11	11:30	12:15	1	On beach	
25/07/2013	10	13:00	13:45	2	On beach nesting	
25/07/2013	7	16:00	16:45	1	Foraging on beach	Onshore
20/08/2013	10	10:15	11:00	~20	Resting onshore adjacent VP	Onshore

Table 24: Sand martin - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
11/06/2013	14	07:15	08:00	100	Foraging over cliff/nesting in cliff	

Table 25: Shelduck - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
30/03/2013	15	08:00	08:45	2	Commuting	Onshore
25/06/2013	7	06:30	07:15	3	Foraging	Inshore
07/08/2013	2	08:15	09:00	2	Flying through	Inshore

Table 26: Teal - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
20/08/2013	11	11:20	12:05	5	Commuting	inshore

Table 27: Unidentified tern species - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time/ observation time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters	Notes
20/08/2013	11	11:25		8	Foraging 2000+ m away too far to identify		
20/08/2013	12	12:45	13:30	1			
20/08/2013	5	17:10		1	Commuting		Too large to be little tern; either common or Sandwich
21/08/2013	2	08:45		4	Foraging over fishing nets		

Table 28: Tufted duck - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
25/07/2013	11	11:30	12:15	4	Commuting	Inshore

Table 29: Wigeon - VP surveys results (May 2013 to August 2013)

Date	VP	Survey Start time	Survey end time	Number of birds	Behaviour	Onshore or inshore waters
20/08/2013	5	16:40	17:25	16	Commuting	Inshore

Technical Note

Sizewell C wintering wetland bird and marsh harrier surveys December 2018 – February 2019

Introduction

This report presents the findings of wintering wetland bird surveys undertaken during the 2018/19 winter to supplement previous surveys undertaken between 2014 and 2015.

The survey areas included the Sizewell Marshes SSSI and the south levels section of Minsmere RSPB reserve, which forms part of the Minsmere-Walberswick SSSI. Surveys were undertaken specifically of the Minsmere south levels and Sizewell Marshes to provide spatial data regarding the numbers and distribution of wintering wetland birds. Although WeBS data exists for both sites, the data does not provide information on the spatial distribution of birds.

In addition, informal¹ walkover surveys were undertaken within the Aldhurst Farm receptor area and the southern reptile receptor areas, which comprised Studio and Lover's Lane. The primary aim of these surveys were to determine if marsh harrier *Circus aeruginosus* utilise the areas of newly created receptor habitat for foraging. The secondary aim of these surveys was to determine the wintering bird assemblage within both areas, particularly the wetland bird assemblage utilising the wetland habitat creation at Aldhurst Farm.

Methodology

Wintering wetland bird survey

Three wetland bird survey visits were undertaken monthly between December 2018 and February 2019. Surveys were undertaken by a team of three surveyors, two surveying the ditch network within the Sizewell Marshes, and the other surveying the Minsmere south levels. Surveys were undertaken simultaneously at both areas to reduce the chances of double counting birds moving between the two. Target species for both areas were wetland bird species, including species of swans, geese, ducks, grebes, rails, waders and herons. Any marsh harrier observed during any surveys were also noted.

The Sizewell Marshes were separated into four survey areas: compartments A, B, C and D (see Figure 1). All ditches within these survey areas were walked and any wetland bird species observed or flushed were identified and counted, and their distribution recorded onto maps. Care was taken to note if birds were flushed into neighbouring compartments to avoid double counting.

The Minsmere south levels was surveyed using a telescope from the periphery bund and seawall to avoid causing disturbance. Wetland birds were identified and counted, and their distribution recorded onto maps.

¹ These surveys were informal and did not include extensive vantage point observations. Therefore, marsh harrier activity is likely to have been underestimated.

Marsh harrier survey

Walkover surveys were undertaken covering the Aldhurst Farm and the southern reptile receptor areas (see Figure 2). Surveys included a 30min vantage point (VP) survey from a location of higher ground at each area. Any marsh harrier flights were recorded onto maps and the activity noted. In addition, wetland bird species using the wetland area at Aldhurst Farm and other bird species of note using both areas were also recorded.

See Appendix A for full survey details, including survey dates, timings, surveyors and weather conditions.

Results

Sizewell Marshes

Tables 1 to 4 present results for each individual survey compartment. The target note (TN) numbers within the tables relate to target notes on corresponding figures (Figure 3 for compartments A and B, Figure 4 for compartment C and Figure 5 for compartment D). The target notes are not intended to give precise locations of results, but rather to give an overview of the distribution of wetland birds within each survey compartment.

Table 1: Wetland Bird survey results for Sizewell Marsh – Compartment A

TN	Species	Dec	Jan	Feb
1.	Gadwall		29	2
	Mallard		7	
	Moorhen			1
	Teal		2	1
2.	Gadwall		10	22
	Mallard	10	4	10
	Mute swan		2	
	Teal		11	21
3.	Gadwall		2	
	Jack snipe		1	
	Mallard			5
	Mute swan			2
	Snipe			2
	Teal			1

Table 2: Wetland Bird survey results for Sizewell Marsh – Compartment B

TN	Species	Dec	Jan	Feb
1.	Coot	2		
	Mallard			2
	Snipe			1
	Teal		4+ (HNS)	
	Water rail	1		
2.	Teal			12

Table 3: Wetland Bird survey results for Sizewell Marsh – Compartment C

TN	Species	Dec	Jan	Feb
1.	Gadwall	4	6	
	Mallard	2	12	8
	Teal	20	11	2
	Water rail	1		

TN	Species	Dec	Jan	Feb
2.	Gadwall		2	
	Mallard		2	
	Mute swan	1	5	
	Snipe	1	4	4
	Teal		4	4
3.	Grey heron		1	
	Mute swan			5
	Snipe		5	3
4.	Grey heron			1
	Jack snipe			1
	Moorhen		4	
	Snipe	18	8	1
	Teal		1	
5.	Grey heron		1	1
	Kingfisher		1	
	Mallard	4	10	8
	Snipe			2
	Teal		1	4
6.	Mallard		5	
	Snipe		1	

Table 4: Wetland Bird survey results for Sizewell Marsh – Compartment D

TN	Species	Dec	Jan	Feb
1.	Gadwall		4	2
	Mallard	10	2	6
	Mute swan		2	
	Teal	4	6	6
2.	Gadwall		12	
	Little egret	1		
	Mallard		10	2
	Marsh harrier	1		
	Snipe	11	8	
	Teal		1	3
3.	Grey heron	1		
	Mallard	6	3	1
	Teal	3	16	13
4.	Gadwall	2	7	16
	Mallard	5		8
	Mute swan	1		2
	Teal	6	3	16
5.	Gadwall		8	5
	Mallard	5	10	8

TN	Species	Dec	Jan	Feb
	Moorhen			1
	Teal	6	10	1
6.	Water rail	1		
	Mallard			2
	Snipe	2	1	1
	Teal			1
	Woodcock	1		

Most of the birds recorded within compartment A were gadwall, mallard and teal. These were distributed throughout the ditches, but higher concentrations were recorded in the ditches in the south western corner of the compartment (TNs 1 and 2).

Compartment B largely comprised dense reedbed and as such accurate counts of wetland bird species was hard to achieve. During the December survey teal were heard but not seen (HNS) within the reedbed and it is likely that higher numbers were present.

Higher numbers of snipe were recorded at compartment C compared to other compartments. These were fairly evenly distributed throughout the fields, with the highest concentrations recorded within the central fields (TN 4). Highest numbers of gadwall, mallard and teal were recorded along the ditches in the north eastern corner of the compartment (TNs 1 and 2).

Gadwall, mallard and teal were distributed throughout the ditches within compartment D. However, the highest concentrations were associated with the wet woodland running along the eastern edge of the survey area, bordering the power station (TNs 3, 4 and 5). Highest concentrations of snipe were recorded within the fields in the north western corner of the compartment (TN 2).

Minsmere South Levels

Table 5 presents the results of the three surveys at Minsmere south levels. The target note (TN) numbers within the tables relate to target notes on Figure 6. The target notes are not intended to give precise locations of results, but rather to give an overview of the distribution of wetland birds within each survey compartment.

Table 5: Wetland Bird survey results for Minsmere South Levels.

TN	Species	Dec	Jan	Feb
1.	Black-headed gull <i>Chroicocephalus ridibundus</i>	1	1	
	Dunlin <i>Calidris alpina</i>	1		
	Gadwall	2		
	Grey heron		1	
	Greylag goose <i>Anser anser</i>			
	Lapwing <i>Vanellus vanellus</i>	1		
	Little egret	1		
	Mallard	4		1

TN	Species	Dec	Jan	Feb
	Marsh harrier	2		1
	Snipe	5		
	Teal	226	14	
	Water rail	1		
	Wigeon <i>Anas penelope</i>	92		
2.	Black-headed gull		18	
	Common gull <i>Larus canus</i>		168	
	Cormorant <i>Phalacrocorax carbo</i>	1		53
	Gadwall		1	28
	Great black-backed gull <i>Larus ichthyaetus</i>		2	
	Greylag goose	19	3	2
	Herring gull <i>Larus argentatus</i>		6	
	Lapwing		8	
	Lesser black-backed gull <i>Larus fuscus</i>		1	
	Mallard	17	36	6
	Marsh harrier		1	
	Mute swan	3		
	Shelduck <i>Tadorna tadorna</i>		1	
	Shoveler <i>Anas clypeata</i>		1	18
	Snipe	3		
	Teal	110	51	260
	Wigeon	60	54	208
3.	Black-headed gull			74
	Common gull			45
	Curlew <i>Numenius arquata</i>	1		
	Gadwall		2	
	Great black-backed gull			47
	Herring gull			19
	Lapwing	34		228
	Lesser black-backed gull			6
	Little egret		1	
	Marsh harrier	1		
	Mute swan	1		
	Peregrine <i>Falco peregrinus</i>			1
	Teal		18	
	Wigeon		270	
4.	Bittern <i>Botaurus stellaris</i>	1		
5.	Barnacle goose <i>Branta leucopsis</i>		28	7
	Greylag goose			9
	Mallard		4	4
	Mute swan		3	
	Wigeon			27
6.	Curlew		1	

TN	Species	Dec	Jan	Feb
	Little egret			1
7.	Greylag goose	1		
	Lapwing			10
	Mute swan			2
	Snipe	2		
8.	Lapwing	22		
	Snipe			1

The highest concentrations of wetland birds, particularly duck species, were associated with the two pools in the north east of the south levels area (TNs 1, 2 and 3).

Aldhurst Farm

Marsh harrier were recorded at Aldhurst Farm during the December visit only. On this occasion, a male marsh harrier was observed foraging over the wetland habitat between 10:25 and 10:33.

Nine wetland bird species were recorded using the Aldhurst Farm wetland habitat across the three visits. These comprised gadwall (peak count 10, Dec), shoveler (peak count 3, Dec), teal (peak count 12, Dec), mallard, mute swan, coot, moorhen, water rail and cormorant. The nature of reedbed habitats mean that accurate counts of wetland bird species are difficult to achieve.

In addition, bearded tit *Panurus biarmicus* was also recorded during the December and January visits. On both occasions three individuals were recorded at the western end of the reedbed. A single Cetti's warbler *Cettia cetti* was recorded during the December and January visits at the eastern end of the reedbed.

Southern reptile receptor areas

Marsh harrier were recorded at the southern reptile receptor areas during the December visit only. Two marsh harrier flights were recorded, both of which were females. The first flight recorded a marsh harrier commuting at a height of approximately 20m from the direction of Aldhurst Farm north east across Leiston Common towards Sizewell Belts. The second flight recorded a marsh harrier commuting higher (at approximately 50m) from the north western corner of Studio reptile receptor area and heading south. As these flights were of marsh harrier heading in different directions it suggests these are separate individuals. However, as these flights were 7min apart it is a possibility that it was the same individual that circled round out of view.

A single barn owl *Tyto alba* pellet was observed on a fence post within Studio reptile receptor area during the December visit. This suggests that barn owl use the habitat present for foraging.

A single Dartford warbler *Sylvia undata* was observed foraging along bramble in the Broom Covert area during the December visit. Other bird species recorded comprised regularly occurring species within the habitats present, including meadow pipit *Anthus cervinus*, skylark *Alauda arvensis* and song thrush *Turdus philomelos*.

Appendix A: Survey details

Survey area	Survey details		Dec	Jan	Feb
Sizewell Marshes	Date		11/12/2018	10/01/2019	07/02/2019
	Survey timings	A/B	09:50 - 10:30	13:30 - 14:45	09:40 - 10:40
		C	10:35 - 11:35	11:15 - 12:30	11:00 - 12:05
		D	12:45 - 14:40	09:20 - 11:00	13:15 - 14:25
	Surveyors		Mark Lang, Ewan Gibson	Jon Carter, EG	JC, Rich Prew
Weather conditions		1-5°C, 0/8 cloud cover, calm, dry, ditches and flooded areas frozen	3-4°C, 8/8 cc, light breeze NW, light shower	7-9°C, 4/8 – 7/8 cc, strong winds (50mph gusts) SW, dry	
Minsmere south levels	Date		11/12/2018	10/01/2019	07/02/2019
	Survey timings		10:30 - 14:30	09:30 - 13:30	09:30 - 12:50
	Surveyors		Dave Andrews	DA	DA
	Weather conditions		As above	As above	As above
Aldhurst Farm	Date		12/12/2018	11/01/2019	07/02/2019
	Survey timings		Survey: 10:30 – 12:05 VP: 11:05 – 11:35	Survey: 09:15 – 10:30 VP: 09:45 – 10:15	Survey: 14:30 – 15:55 VP: 14:45 – 15:15
	Surveyors		DA, EG	DA	DA
	Weather conditions		4°C, 2/8 cloud cover, calm, dry	3°C, 7/8 cc, light breeze NW	9°C, 3/8 cc, strong winds (50mph gusts) SW, dry
Southern reptile receptor areas	Date		12/12/2018	11/01/2019	07/02/2019
	Survey timings		Survey: 09:00 – 10:55 VP: 09:25 – 09:55	Survey: 09:00 – 10:25 VP: 09:25 – 09:55	Survey: 14:30 – 16:05 VP: 14:55 - 15:25
	Surveyors		DA, EG	JC, EG	JC, RP
	Weather conditions		As above	As above	As above

Figures

Figure 1: Overview of wetland bird survey locations, including the four Sizewell Marshes compartments and Minsmere South Levels.



Figure 2: Overview of Aldhurst Farm and the southern receptor areas survey locations, including vantage point (VP) locations.

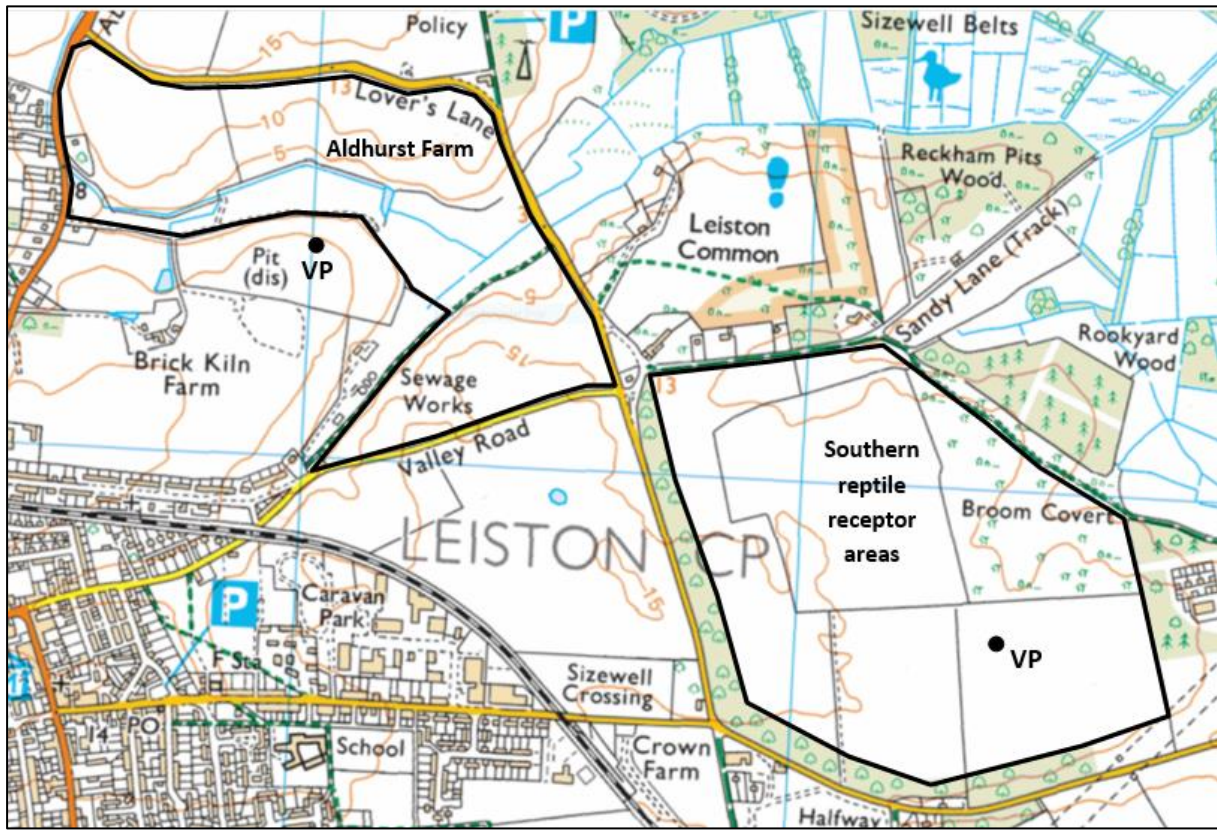


Figure 3: Wetland bird survey results for Sizewell Marshes – Compartments A and B. Refer to Figure 1 for locations of compartments A and B.

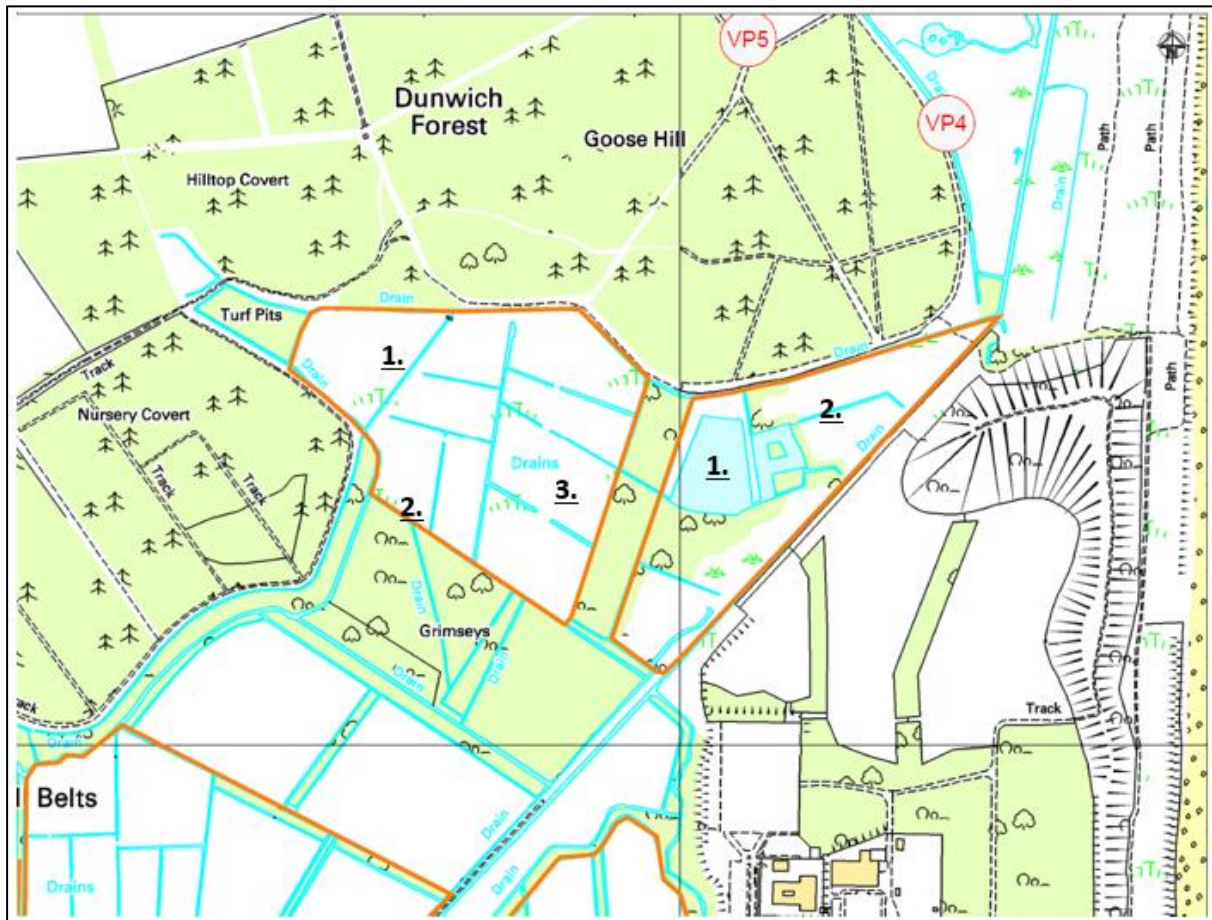


Figure 4: Wetland bird survey results for Sizewell Marshes – Compartment C.

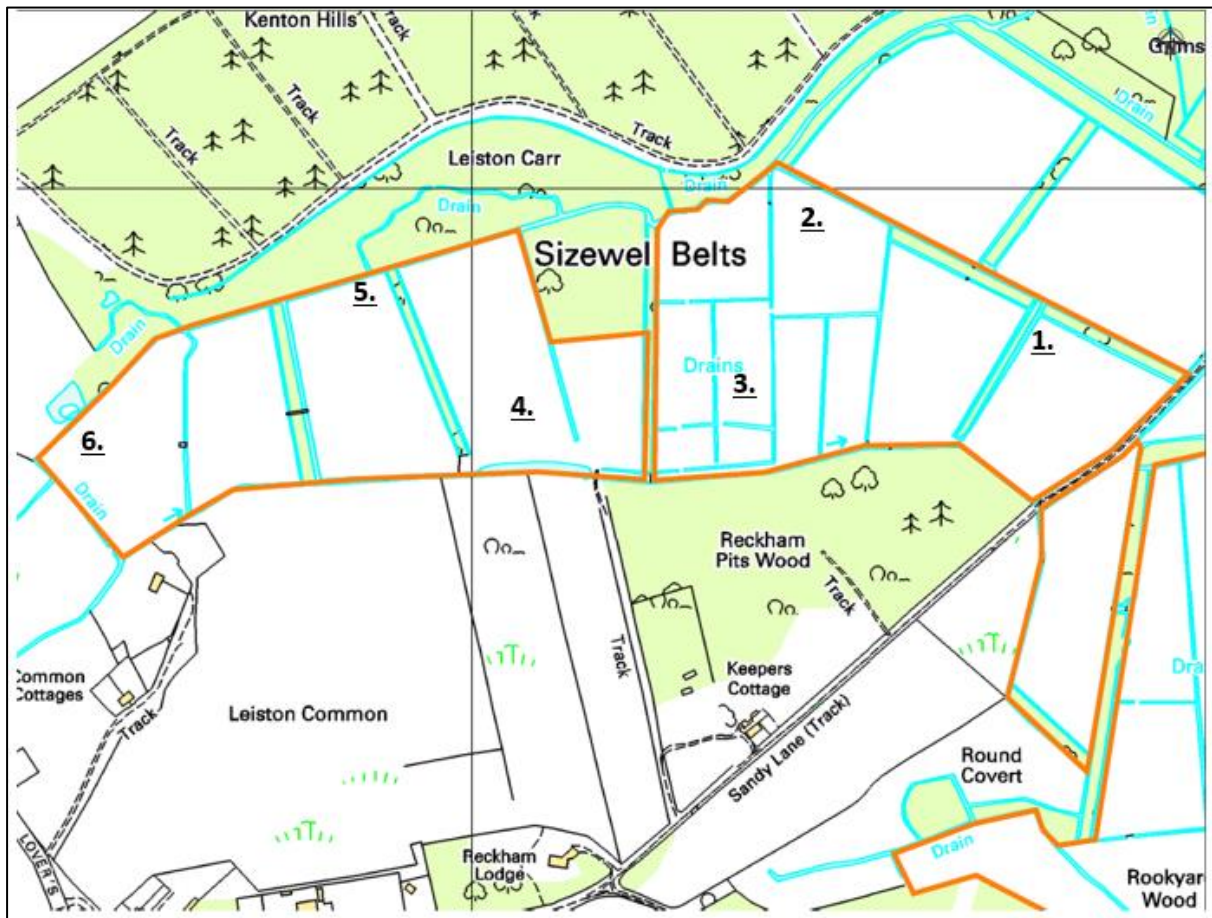


Figure 5: Wetland bird survey results for Sizewell Marshes – Compartment D.

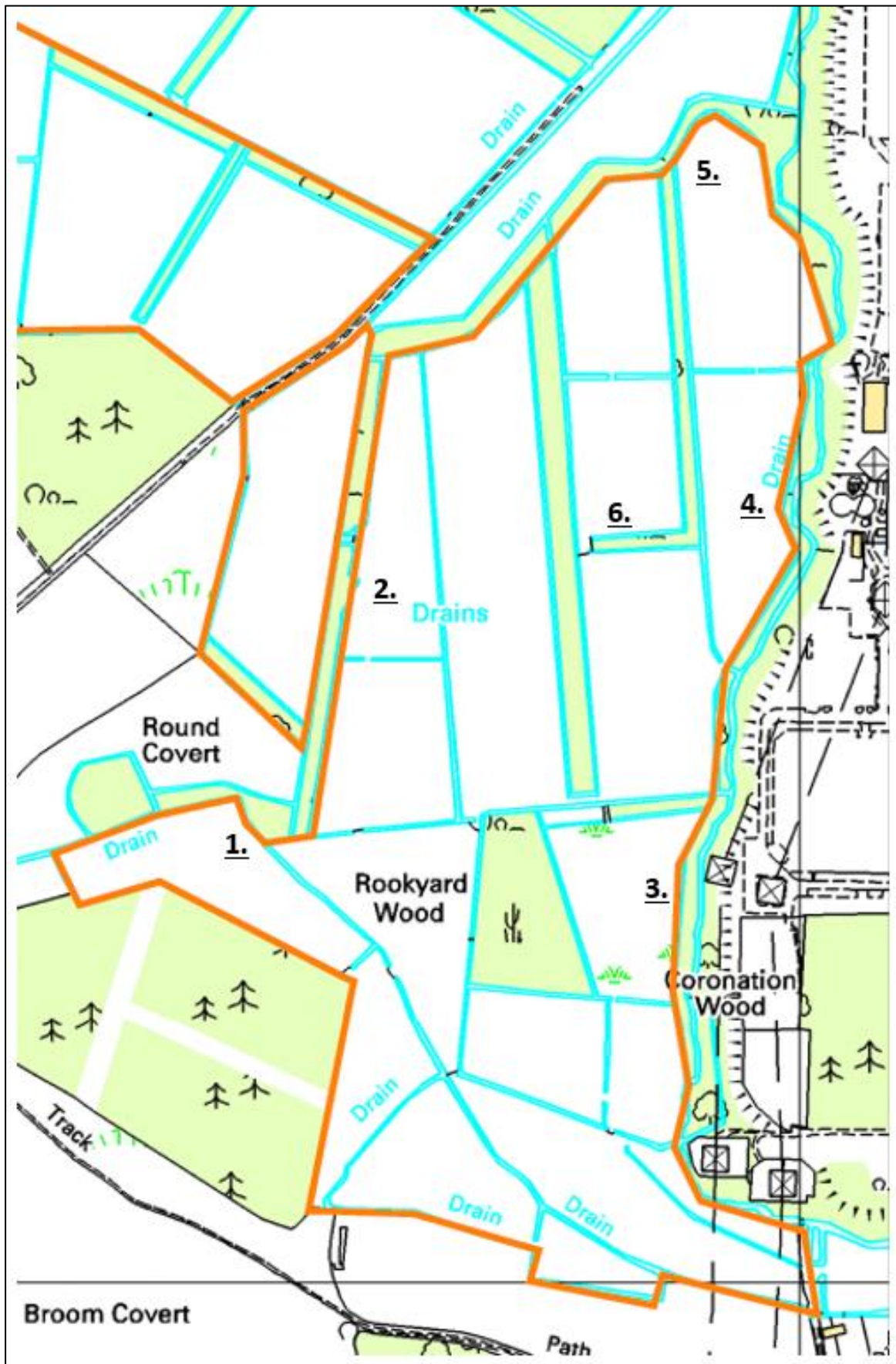
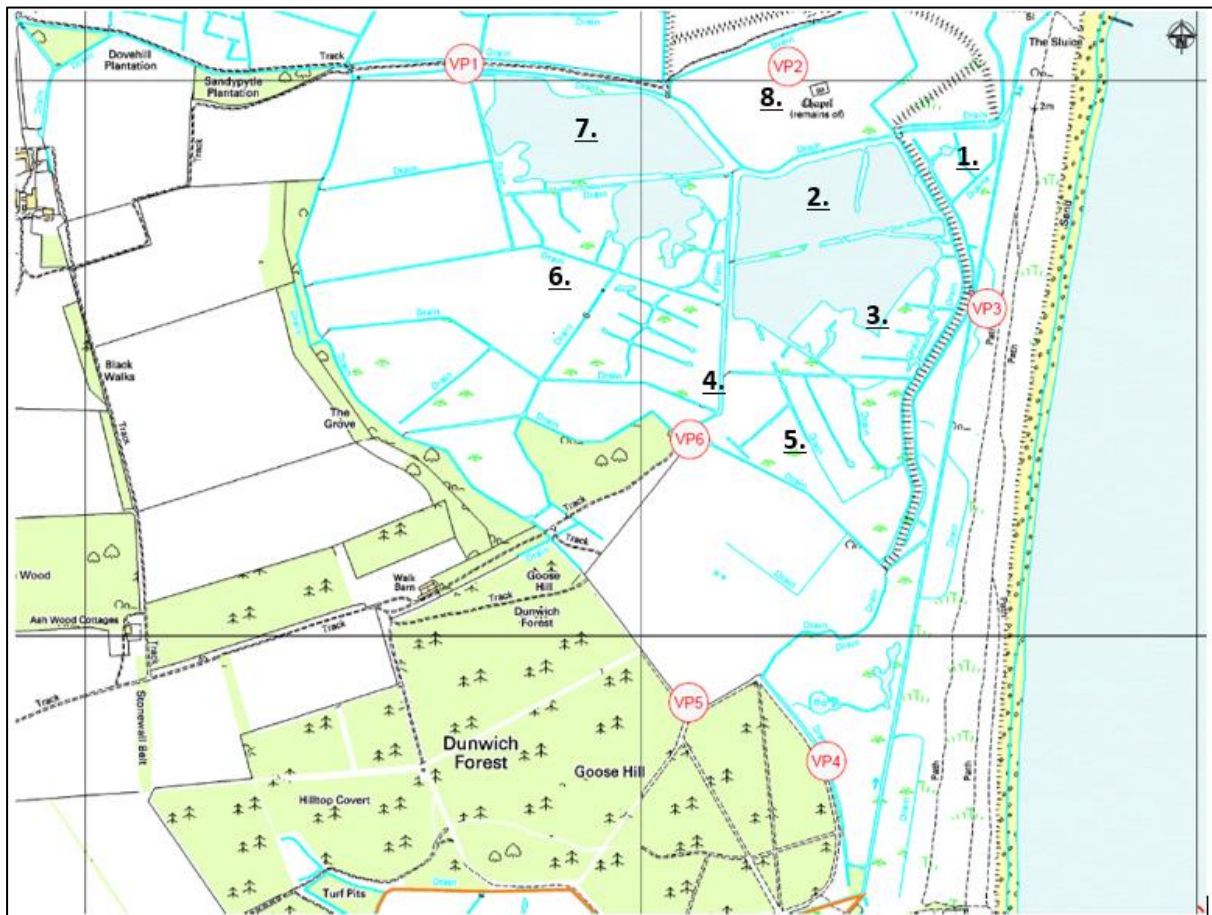


Figure 6: Wetland bird survey results for Minsmere South Levels.





VOLUME 2, CHAPTER 14: APPENDIX 14A7 - ORNITHOLOGY:
ANNEX 14A7.5 QUALIFYING SPECIES ACCOUNTS
(QUALIFYING FEATURES AND OTHER SEABIRDS/
WATERBIRDS)

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Figures

None provided.

Plates

None provided.

1. Qualifying Species

1.1 Introduction

a) Purpose of this annex

1.1.1 The purpose of this annex and the species accounts is to collate desk-study and field survey information in one location. This approach has been taken due to the volume of ornithological desk-study data and the extent of survey work undertaken by both Wood Group (formerly Entec and Amec Foster Wheeler) and Arcadis Consulting (UK) Limited (formerly Hyder Consulting, and hereafter referred to as Arcadis) for the Sizewell C power station at the main development site (referred to throughout this volume as the “proposed development”).

1.1.2 Two species account annexes have been produced:

- **Annex 14A7.5** provides accounts for qualifying species for one or more of the European designated sites within the Zone of Influence (Zoi) of the proposed development site (hereafter referred to as the “site”), and other seabird and waterfowl/wader species recorded (this document).
- **Annex 14A7.6** provides accounts for species listed on Schedule 1 of the Wildlife and Countryside Act (W&CA) (Ref. 1.1) (excluding those already included within **Annex 14A7.5**), as well as accounts for Red and Amber listed species of Birds of Conservation Concern (BoCC) (Ref. 1.2) and/or species listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act (Ref. 1.3). It also includes a list of other species (i.e. Green List species of BoCC) which have been recorded during both the Wood Group (Ref. 1.4, Ref. 1.5, Ref. 1.6) and Arcadis surveys.

1.1.3 This annex details the desk-study, secondary and primary bird survey data that has been collected for all bird species that form part of a European designated site qualification (such as Special Protection Areas (SPAs) or Ramsar sites) or are a qualifying species of a Site of Special Scientific Interest (SSSI) and species mentioned in the citation for County Wildlife Sites (CWS).

1.1.4 A number of these species are also listed on Schedule 1 of the W&CA (Ref. 1.1). The birds, their nests, eggs and young of all species listed on Schedule 1 are fully protected by law in the United Kingdom (UK) at all times of the year. Schedule 1 species are considered in **Annex 14A7.6**.

- 1.1.5 Over 70 qualifying/assemblage species were recorded during the surveys undertaken by Wood Group (Ref. 2007 to 2012) (Ref. 1.4, Ref. 1.5 and Ref. 1.6) and Arcadis (2013 to 2019).
- 1.1.6 A species account has been written for each of these bird species. Each account comprises a description of the desk-study results, a summary of the secondary data (Ref. from surveys undertaken by Wood Group 2007 to 2012, refer to **Annex 14A7.3**), and the primary data collected from surveys undertaken by Arcadis (2013 to 2019).
- 1.1.7 This combined information has been used to inform the summary description of the ornithological Important Ecological Features (IEFs) presented in the main ornithology baseline (**Appendix 14A7 – Ornithology**).
- 1.1.8 This Annex is divided into five sections, as described in **Table 1.1**. Species accounts have not been written for those Green List BoCC (Ref. 1.2) species which are not part of the qualifying feature of a designated site qualification or are NERC Act listed (Ref. 1.3). These Green List species are listed in a table of sightings during the Wood Group and Arcadis surveys and have been included within **sections 5 and 6**.

Table 1.1: Section index.

Section	Definition	Species
Section 1.2: Qualifying features of one or more designated sites.	An individual bird species listed as a qualifying species of an SPA/Ramsar site.	White-fronted goose (<i>Anser albifrons</i>) (section 1.2a), redshank (<i>Tringa totanus</i>) (section 1.2b), gadwall (<i>Anas strepera</i>) (section 1.2c), teal (<i>Anas crecca</i>) (section 1.2.d), shoveler (<i>Anas clypeata</i>) (section 1.2.e), red-throated diver (<i>Gavia stellata</i>) (section 1.2f), bearded tit (<i>Panurus biarmicus</i>) (section 1.2g), bittern (<i>Botaurus stellaris</i>) (section 1.2h), marsh harrier (<i>Circus aeruginosus</i>) (section 1.2i), hen harrier (<i>Circus cyaneus</i>) (section 1.2j), avocet (<i>Recurvirostra avosetta</i>) (section 1.2k), ruff (<i>Philomachus pugnax</i>) (section 1.2l), little tern (<i>Sternula albinfrons</i>) (section 1.2m), Sandwich tern (<i>Sterna sandvicensis</i>) (section 1.2n), common tern (<i>Sterna hirundo</i>) (section 1.2o), woodlark (<i>Lullula arborea</i>) (section 1.2p), nightjar (<i>Caprimulgus europaeus</i>) (section 1.2r) and lesser black-backed gull (<i>Larus fuscus</i>) (section 1.2q).
Section 1.2: Species which are specifically listed as forming part of	A bird species specifically listed as part of the seabird assemblage qualification (if	Black-headed gull (<i>Chroicocephalus ridibundus</i>) (section 1.2u), and herring gull (<i>Larus argentatus</i>) (section 1.2v).

NOT PROTECTIVELY MARKED

Section	Definition	Species
the seabird assemblage qualification of the Alde-Ore Estuary SPA.	not already detailed in section 2).	
Section 1.3: Species which are specifically listed as forming part of the waterfowl assemblage qualification of one or more designated sites.	A bird species specifically listed as part of an assemblage qualification.	Shelduck (<i>Tadorna tadorna</i>) (section 1.3a), wigeon (<i>Anas penelope</i>) (section 1.3b), dunlin (<i>Calidris alpina</i>) (section 1.3c), lapwing (<i>Vanellus vanellus</i>) (section 1.3d) and black-tailed godwit (<i>Limosa limosa</i>) (section 1.3e).
Section 1.4: Other seabird species recorded.	Seabird species which have been recorded during surveys undertaken. These species are not currently specifically listed on an assemblage qualification of any of the designated sites within 20km of the site.	Eider (<i>Somateria mollissima</i>) (section 1.4b), long-tailed duck (<i>Clangula hyemalis</i>) (section 1.4c), common scoter (<i>Melanitta nigra</i>) (section 1.4d) velvet scoter (<i>Melanitta fusca</i>) (section 1.4e), goldeneye (<i>Bucephala clangula</i>) (section 1.4f), black-throated diver (<i>Gavia arctica</i>) (section 1.4g), great northern diver (<i>Gavia immer</i>) (section 1.4h), black tern (<i>Chlidonias niger</i>) (section 1.4i), roseate tern (<i>Sterna dougallii</i>) (section 1.4j), kittiwake (<i>Rissa tridactyla</i>) (section 1.4k), fulmar (<i>Fulmarus glacialis</i>) (section 1.4l), manx shearwater (<i>Puffinus puffinus</i>) (section 1.4m), gannet (<i>Morus bassanus</i>) (section 1.4n), arctic skua (<i>Stercorarius parasiticus</i>) (section 1.4o), guillemot (<i>Uria aalge</i>) (section 1.4p), razorbill (<i>Alca torda</i>) (section 1.4q), arctic tern (<i>Sterna paradisaea</i>) (section 1.4r), little gull (<i>Hydrocoloeus minutus</i>) (section 1.4s), Mediterranean gull (<i>Larus melanocephalus</i>) (section 1.4t), common gull (<i>Larus canus</i>) (section 1.4u), great black-backed gull (<i>Larus marinus</i>) (section 1.4v) and other green-listed seabird species (section 1.4w).
Section 1.5: Other waterfowl and wader species recorded.	This section comprises waterfowl and wader species which have been recorded during the surveys. These species are not currently specifically listed on an assemblage qualification of any of the designated sites within 20km of the site.	Mute swan (<i>Cygnus olor</i>) (section 1.5b), whooper swan (<i>Cygnus cygnus</i>) (section 1.5c), pink-footed goose (<i>Anser brachyrhynchus</i>) (section 1.5d), greylag goose (<i>Anser anser</i>) (section 1.5e), barnacle goose (<i>Branta leucopsis</i>) (section 1.5f), dark-bellied brent goose (<i>Branta bernicula bernicla</i>) (section 1.5g), mallard (<i>Anas platyrhynchos</i>) (section 1.5h), pintail (<i>Anas acuta</i>) (section 1.5i), water rail (<i>Rallus aquaticus</i>) (section 1.5j), stone-curlew (<i>Burhinus oediconemus</i>) (section 1.5k), oystercatcher (<i>Haematopus ostralegus</i>) (section 1.5l), golden plover (<i>Pluvialis apricaria</i>) (section 1.5m), grey plover (<i>Pluvialis squatarola</i>) (section 1.5m),

Section	Definition	Species
		<p>little ringed plover (<i>Charadrius dubius</i>) (section 1.5o), ringed plover (<i>Charadrius hiaticula</i>) (section 1.5p), whimbrel (<i>Numenius phaeopus</i>) (section 1.5q), curlew (<i>Numenius arquata</i>) (section 1.5r), bar-tailed godwit (<i>Limosa lapponica</i>) (section 1.5s), knot (<i>Calidris canutus</i>) (section 1.5v), curlew sandpiper (<i>Calidris ferruginea</i>) (section 1.5v), sanderling (<i>Calidris alba</i>) (section 1.5w), purple sandpiper (<i>Calidris maritima</i>) (section 1.5x), common sandpiper (<i>Actitis hypoleucos</i>) (section 1.5z), green sandpiper (<i>Tringa ochropus</i>) (section 1.5aa), spotted redshank (<i>Tringa erythropus</i>) (section 1.5bb), greenshank (<i>Tringa nebularia</i>) (section 1.5cc), woodcock (<i>Scolopax rusticola</i>) (section 1.5dd), snipe (<i>Gallinago gallinago</i>) (section 1.5ee), spoonbill (<i>Platalea leucorodia</i>) (section 1.5ff), common crane (<i>Grus grus</i>) (section 1.5gg) and other green listed waterbird species (section 1.5hh)</p>

b) Referencing, locations and definitions

i. Survey area

1.1.9 The survey area for each of the Arcadis ornithology surveys was very much dependant on the survey type; however, the majority of the surveys were carried out in the habitats within and adjacent to the site. The site is shown on **Figure 14A7.1, Appendix 14A1 – Introduction to the Ecological Baseline**. The survey area was extended from Dunwich in the north to Orford Ness in the south for the red-throated diver, tern and cormorant (*Phalacrocorax carbo*) surveys in order to capture any bird activity along the likely potential route of boat movements during the construction phase of the proposed development. However, for the remaining surveys, the survey area was defined as “the site and the wider area”.

1.1.10 In the context of the Wood Group surveys, the term survey area refers to the EDF Energy estate, and land within 1km of the EDF Energy estate boundary, covering approximately 9km². A full description of the Wood Group survey area is presented in the individual reports found in **Annex 14A7.3**. Due to uncertainties at the time of the Wood Group surveys regarding the final layout of the proposed development, the survey area covered by the Wood Group surveys was larger than the survey area used for the Arcadis surveys. It should be noted that the red line boundary has

changed, albeit not substantially, since the Wood Group surveys (see **Appendix 14A1 – Introduction to the Ecological Baseline**).

ii. Desk-study definitions

1.1.11 **Table 1.2** provides a definition of terms used when referring to different data sources throughout this Annex (such as British Trust of Ornithology (BTO) Wetland Bird Survey (WeBS) data (Ref. 1.7 and Ref. 1.8)).

Table 1.2: Desk-study data sources.

Desk-study sources	Description and reference
Suffolk Birds reports	A review of the Suffolk Birds reports (Ref. 1.9, Ref. 1.10, Ref. 1.11, Ref. 1.12, Ref. 1.13, Ref 1.14, Ref 1.15) was undertaken as part of the desk-study. These reports were used to obtain information regarding the status of important bird species within Suffolk and within the vicinity of the site.
Royal Society for the Protection of Birds (RSPB) data	Five-years of data (2001-2013) of bird records within 5km of the existing Sizewell power station complex (Ref. 1.16 and Ref. 1.17).
Suffolk Biodiversity Information Service (SBIS) data	Records of species within 2km of the site were requested from SBIS in 2014 (Ref. 1.18).
BTO WeBS data	The two count zones comprise Minsmere (not including sea) (BTO 33073 2013) and Minsmere offshore, (BTO 33074 2013). These data ranged from 2001-2012. The count zones are shown on Figure 14A7.2 .
RSPB species specific data (up to 2016)	Data provided about specific species, comprising: bittern (Ref. 1.19), marsh harrier (Ref. 1.20), woodlark (Ref. 1.21) and nightjar (Ref. 1.22).
NGL monitoring data	NGL, with the help of Suffolk Wildlife Trust (SWT), have monitored the EDF Energy estate (refer to Figure 14A7.1) since 1999, 14 years of data have been used in this report (NGL 2005-2018) (Ref. 1.23, 1.24, 1.25, 1.26, 1.27, 1.28, 1.29, 1.30, 1.31, 1.32, 1.33, 1.34, 1.35, 1.36 and 1.37).

iii. Location definitions

1.1.12 Within each species account, references are also made to specific locations within the survey area where birds have been recorded, such as Minsmere South Levels. **Table 1.3** and **Table 1.4** provide a glossary of terms used to describe the different areas within and adjacent to the survey area.

Table 1.3: Locations within the survey area where bird species have been recorded.

Location within survey area	Description
Ash Wood	A mixed plantation woodland within the arable fields at the northern end of the EDF Energy estate.
Ash Wood cottages	Cottages to the south east of Ash Wood.
Black Walks	An area of short sward grassland found within the arable fields at the northern end of the EDF Energy estate.
Broom Covert	A mixed plantation found within the southern end of the EDF Energy estate.
Cow Marsh Hill	Field within the RSPB Minsmere Reserve, just north of the Minsmere New Cut.
Fiscal Policy woodland	An area of woodland adjacent to Kenton Hills.
Goodrums Fen	Area of fen meadow and reedbed within Sizewell Marshes SSSI.
Goose Hill	Coniferous Plantation north of Sizewell Marshes SSSI
Great Mount Wood	A conifer plantation found within the northern end of the EDF Energy estate.
Grimseys	An area of wet woodland located within Sizewell Marshes SSSI.
Kenton Hills	Coniferous Plantation northwest of Sizewell Marshes SSSI.
Leiston Common	Area of acid grassland and heath within the southern end of the EDF Energy estate. The area is designated as a CWS.
Leiston Old Abbey	Residential care home to the southwest of Upper Abbey Farm.
Lower Abbey Farm	Located within the northern end of the EDF Energy estate. The site comprises farm buildings, outbuildings, and workshops.
Lower Abbey Farm marshes	An area of marshy grassland north of Lower Abbey Farm.
Minsmere South Levels	Area of floodplain grassland located to the north of the site and south of the Minsmere New Cut.
Nursery Covert	Conifer plantation woodland forming part of the larger Kenton Hills and Goose Hill complex.
Old Abbey Farm	Located northwest of Kenton Hills.
Reckham Pits Wood	Broadleaved woodland found within the southern end of the EDF Energy estate.
Reedbed within Sizewell Marshes SSSI	Reedbed located south of Goose Hill within Sizewell Marshes SSSI.
Retsom's Field	Area of semi-improved acid grassland and heath located in

Location within survey area	Description
	the southern end of Minsmere South Levels. Forms part of the Sizewell Levels and Associated areas CWS.
Rigs associated with the Sizewell A and B power stations	The structures offshore of the existing Sizewell A and B power stations.
Rookyard Pits Wood	Area of broadleaved woodland located to the south of Sizewell Marshes SSSI.
Sandpytle Plantation	Area of semi-natural broadleaved woodland located at the northern end of the EDF Energy estate.
Sizewell Beach	Area of beech adjacent to, and north of the existing Sizewell A and B power stations.
Main platform	The Sizewell C power station platform area to the north of the existing Sizewell B power station.
Sizewell Marshes SSSI	An area of species – rich fen meadow, reedbed and wet woodland within the EDF Energy estate.
Stonewall Belt	A belt of broadleaved trees within the EDF Energy estate.
The Round House	A private residence within the EDF Energy estate.
Upper Abbey Farm	Located within the EDF Energy estate. The site comprises farm buildings, outbuildings, and workshops. SWT are also based here.
Walk Barn	An area of acid grassland to the north of Goose Hill.
Windmill	A wind water pump located within Retsom's field.
Areas 1 - 3	These refer to the Areas within Sizewell Marshes SSSI which were surveyed during the Waterbird Point Counts, refer to Annex 14A7.1-4 .
Sizewell Marshes SSSI (Compartments A – D)	These refer to the compartments surveyed during the wetland bird surveys (2018-19), refer to Annex 14A7.1-4
Minsmere South Levels (TN1 – 8)	

Table 1.4: Locations outside of survey area where bird species have been recorded.

Location	Description
Alde-Ore Estuary	Mouth of the River Alde, near Orford Ness, south of the site.
Aldeburgh	Coastal town located 6km south of the site.
Aldringham	Village approximately 3km south of the site.
Aldringham Common (= Aldringham Walks)	An area of heathland and plantation, located between Aldringham and Thorpeness, north-west of Aldeburgh. Forms part of the Sandlings SPA and Aldeburgh to Leiston SSSI.

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Location	Description
Aldringham-cum-Thorpe	The civil parish located south of the town of Leiston, the parish includes the villages of Aldringham and Thorpeness, which is on the coast, between the site and Aldeburgh.
Benacre Broad	Located within Benacre National Nature Reserve, approximately 20km north of the site.
RSPB Boyton Marshes Reserve	Reserve near the River Alde, near Orford Ness, approximately 17km south of the site.
Covehithe	Near Benacre National Nature Reserve.
Deben	Little tern colony located near the River Deben, approximately 25km south of the site.
Dingle Marshes/Dingle Marsh	RSPB and SWT reserve near Dunwich village, approximately 7.5km north of the site and forming part of the Minsmere to Walberswick Heaths and Marshes SPA/Special Area of Conservation (SAC)/Ramsar.
Dunwich	Village located approximately 7.5km north of the site.
Dunwich Cliffs	Cliffs in the vicinity of Dunwich heath, north of the site.
Dunwich Heath	An area of heathland, managed by the National Trust south of Dunwich Village and forming part of the Minsmere to Walberswick Heaths and Marshes SPA/SAC/Ramsar.
Dunwich Forest	A forestry commission plantation found approximately 5km to the north of the site.
Eastbridge	Village approximately 3km north-east of the site.
Eastbridge Farm	Farm located within Eastbridge village.
Easton	Historic little tern colony near Easton Bavents.
Easton Broad	Broad located in Easton Bavents approximately 15km north of the site.
Felixstowe	Town located between the River Orwell and the River Deben approximately 33km to the south of the site.
Hare's Creek	A creek located along the River Orwell.
Havergate Island	An island within the Alde–Ore Estuary.
Hen Reedbeds	Suffolk Wildlife Trust site located on the banks of the Blyth near Southwold, approximately 13km north of the site and forming part of the Minsmere to Walberswick Heaths and Marshes SPA/SAC/Ramsar/SSSI.
Island Mere Hide	A bird hide located at RSPB Minsmere Reserve.
Knodishall	Village in Suffolk south-east of Saxmundham and approximately 4km west of the site.
Kings Fleet on the river Deben–Bawdsey	Near Falkenham Suffolk, approximately 30km south of the site.
Kessingland	South of Lowestoft, Suffolk approximately 23km north of the

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Location	Description
	site.
Lakenheath Fen	Inland near Brandon, near Thetford Forest, approximately 77km to the north-west of the site.
Landguard Point	Nature reserve near Felixstowe, approximately 33km south of the site.
Lantern Marshes	Marshes found on Orford Ness, approximately 15km south of the site.
Leiston	A village approximately 3km to the south-west of the site.
Lowestoft Docks	The only other breeding kittiwake colony in Suffolk, located approximately 30km north of the site.
Middleton	Village approximately 6km north of the site.
Minsmere New Cut	Artificial drain that carries the course of the Minsmere River and dividing the Minsmere North Levels from the Minsmere South Levels.
RSPB Minsmere Reserve	Area of land managed by the RSPB and forming part of the Minsmere to Walberswick Heaths and Marshes SPA/SAC/Ramsar/SSSI. The majority of their landholding is to the north of the Minsmere New Cut.
RSPB North Warren Reserve	Area of land managed by RSPB reserve north-west of Aldeburgh and forming part of the Sandlings SPA and Aldeburgh to Leiston SSSI.
Orford Ness	Orford Ness is a shingle spit, located at the mouth of the Alde-Ore Estuary and is managed by the National Trust. This is located approximately 15km south of the site and part of the Alde-Ore Estuary SPA and SSSI.
Slaughden Beach	The northern portion of Orford Ness located south of Aldeburgh.
Sandlings SPA	A SPA composed of six component SSSIs (including and Aldeburgh to Leiston SSSI) located to the south of the site.
Shingle Street	The southern portion of the Orford Ness Shingle Spit.
Sizewell Hall	A country house located on the coast approximately 1.75km south of the site.
Shotley	Shotley is the parish south of Ipswich approximately 37km south of the site, between the River Stour and the River Orwell, near Harwich, Suffolk.
Theberton	West of Eastbridge and north of Leiston, approximately 4.5km north-west of the site.
Theberton Woods	Located near Middleton, a Forestry Commission Woodland.
Trimley Marshes	Trimley Marshes is a nature reserve along the river Orwell, near Trimley St Martin, approximately 32km south of the site.
Thorpeness	Coastal Village approximately 3km south of the site and

Location	Description
	located to the north of Aldeburgh.
Thorpeness Golf Club	Golf club along the coast south of the site.
Walberswick	Village approximately 12km north of the site, near Southwold.
Westleton	Village approximately 7km north-west of the site.
Westleton Walks	Area of heathland located west of Dunwich Heath and forming part of the Minsmere to Walberswick Heaths and Marshes SPA/SAC/Ramsar/ SSSI.
Westwood Marshes	Large reedbed located south-west of Walberswick and forming part of the Minsmere to Walberswick Heaths and Marshes SPA/SAC/Ramsar/SSSI.

1.2 Qualifying features of one or more European sites

a) White-fronted goose

1.2.1 White-fronted goose is designated as of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a severe decrease of 60% of the UK non-breeding population in the last 25 years, and a longer-term decrease of 54% since the first BoCC review (Ref. 1.2). White-fronted goose is also listed as a priority species under section 41 of the NERC Act (Ref. 1.3).

i. Desk-study

1.2.2 White-fronted goose forms part of the qualifying feature of two designated sites within 20km of the site, as detailed in **Table 1.5**.

Table 1.5: Statutory designated sites that include white-fronted goose within the qualification.

Designated site	Species relevant qualification detail
Minsmere to Walberswick SPA	White-fronted goose is an Annex 1 qualifying feature during the over Winter season. This area supports 1.1% of the Winter population in the UK (five-year peak mean 1991/92-1995/96).
Leiston to Aldeburgh SSSI	This SSSI features white-fronted goose as a wintering species.

ii. Suffolk Birds

1.2.3 The Suffolk Birds reports (Ref. 1.9 - Ref. 1.15) describe white-fronted goose as a fairly common Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that white-fronted goose were more numerous in 2017 than in recent years with much higher flocks at the most-favoured site, RSPB North Warren Reserve. Other sightings were recorded

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at RSPB Minsmere Reserve, East Bridge, Dingle Marshes and Hollesley Marshes. The 2018 Suffolk Bird Report (Ref. 1.15), stated that the largest flock of white-fronted goose was recorded at RSPB North Warren Reserve. Other sightings included Aldeburgh Marshes, RSPB Minsmere Reserve and Dingle Marshes.

RSPB

1.2.4 The RSPB reported six records of white-fronted geese within 5km of the Sizewell power station complex. These records were all located at RSPB North Warren Reserve and consisted of flocks between 280 to 310 individuals. RSPB also provided anecdotal information (Ref. 1.38) suggesting that white-fronted geese feeding at RSPB North Warren Reserve (south of Thorepness) have been observed flying out to sea south of Sizewell (around Thorpeness), and then circling around the power stations and cutting back to Minsmere. It would, therefore, appear that they feed during the day at North Warren and roost at Minsmere (movements being very early in the morning and very late in the evening).

1.2.5 RSPB provided anecdotal information (Minsmere reserve resident) suggesting that white-fronted geese have regularly used Minsmere as a roost site (in recent years) but arrive after dark and leave well before dawn so there is no data on numbers. It is assumed that white-fronted geese roost on the larger waterbodies which after Winter flooding includes the South Levels as well as more permanent water features in the reedbed (Island Mere) and the Scrape. The favoured feeding area is on the North Warren grazing marsh.

SBIS

1.2.6 Desk-study records provided by SBIS reported 14 records of white-fronted geese within 2km of the site. These records were located at the RSPB Minsmere Reserve, Thorpeness, Leiston, Aldringham Walks and Common/Thorpeness Golf Club and “Sizewell”.

BTO

1.2.7 White-fronted goose was recorded within the Minsmere (not including sea) BTO WeBS count zone) with an annual five-year mean of peak counts of 139. No white-fronted geese were observed within the Minsmere offshore count zone.

iii. NGL

1.2.8 NGL recorded the presence of white-fronted goose on the EDF Energy estate on three occasions up until 2014. These records comprised 43

white-fronted geese during BTO WeBS counts in 2004-2005; 252 birds recorded during the farmland bird survey in 2006; and two birds recorded during the farmland bird survey in 2013. No records of white-fronted goose have been recorded since 2014.

iv. Secondary data

1.2.9 Wood Group did not record the presence of white-fronted goose during any of the surveys undertaken between 2007 and 2012.

v. Primary data

1.2.10 White-fronted goose was not recorded using the site, or as part of the seabird surveys undertaken by Arcadis between 2013 and 2015.

1.2.11 White-fronted goose was observed rarely within the survey area, although when recorded, the birds were in large flocks. All records of white-fronted goose within the survey area were from the arable fields at the northern end of the EDF Energy estate.

b) Redshank

1.2.12 Redshank are regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to: a moderate decline in the UK breeding population of 44% in the last 25 years; a decline in the UK non-breeding population of 32% in the last 25 years; a decline of 35% in its breeding range in the last 25 years; a longer-term decline of 43% in its UK breeding range; and the UK possessing 20-30% of the European non-breeding population (Ref. 1.2).

i. Desk-study

1.2.13 Redshank form part of the qualifying features of several of the designated sites within 20km of the site, as detailed in **Table 1.6**.

Table 1.6: Statutory designated sites that include redshank within the qualification.

Designated site	Species relevant qualification detail
Alde-Ore Estuary SPA	Within the Alde-Ore Estuary SPA redshank are designated as an over wintering species. The area supports 1,919 individuals during the Winter, representing at least 1.3% of the wintering Eastern Atlantic wintering population (five-year peak mean 1991/2 - 1995/6).
Minsmere to Walberswick Heaths	The mudflat on the Blythe Estuary, part of the Minsmere to Walberswick Heaths and Marshes SSSI provide an important

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Designated site	Species relevant qualification detail
and Marshes SSSI	feeding ground for redshank.
Alde-Ore Estuary SSSI	The Alde-Ore Estuary SSSI supports populations of wintering redshank

Suffolk Birds

1.2.14 The Suffolk Birds reports (Ref. 1.9 - 1.15) redshank as a common Winter visitor, a passage migrant and a declining resident. The 2017 Suffolk Bird Report (Ref. 1.14) stated that sightings were recorded at Orfordness and Hollesley Marshes. The 2018 Suffolk Bird Report (Ref. 1.15) stated that the highest numbers of redshank were reported at Alde/Ore Estuary (peak count of 2188). Over 100 breeding pairs were recorded on the coast, including 31 pairs at RSPB Minsmere Reserve and a minimum of 40 pairs at Orfordness.

RSPB

1.2.15 Data provided by the RSPB revealed 24 records of redshank within 5km of the existing Sizewell power station complex between 2003 and 2013. The number of redshank reported ranged from six to 1,697 birds and were located at RSPB Minsmere Reserve, RSPB North Warren Reserve and the Alde-Ore Estuary. Most records were of breeding, or probable breeding redshank, with one record of 1,697 over wintering redshank in 2006.

SBIS

1.2.16 Desk-study records provided by SBIS revealed no records of redshank within 2km of the site.

BTO

1.2.17 The individual count sector data from the BTO WeBS data for the Minsmere (not including sea), supported an annual five-year mean peak count of 30 redshank. Counts of redshank occurred during the breeding and passage period (specifically: July, August and September). There were no records for redshank from the Minsmere offshore count zone.

NGL

1.2.18 NGL have noted the presence of redshank on the EDF Energy estate in 12 of the last 14 years. Most records were of one or two individuals observed during the BTO WeBS counts. Only one breeding record was been noted during this time, with a single breeding territory established in 2013, though the result of this breeding attempt was unknown. The peak count for wintering redshank was 11 birds recorded during the 2013 WeBS count.

Two records of redshank were recorded during March of the 2015 WeBS count. One record of redshank was recorded during December of the 2016 WeBS count. Redshank has not been recorded as holding a breeding territory between 2015-2018.

ii. Secondary data

1.2.19 During the Wood Group intertidal and inshore marine surveys undertaken in 2007-2008 (**Reports 14A7.3-1 and 14A7.3-2, Annex 14A7.3**), two redshanks were observed in April and low numbers were observed during the Winter survey period. During the Wood Group 2011-2012 seabird surveys (**Reports 14A7.3-3 and 14A7.3-2, Annex 14A7.3**) redshank was observed at Vantage Points (VPs) 3, 4 and 10, with six, four and one redshank being observed at each VP respectively. Redshank was observed in August and September 2011.

1.2.20 The Wood Group 2010 breeding bird survey reported two observations of redshank during the survey period to the north-east of the survey area on RSPB land. One observation of redshank was recorded during the breeding survey of the arable reversion areas in 2012. The location of this registration is shown in Figure 3-1a and 3-1b in **Report 14A7.3-8, Annex 14A7.3**.

iii. Primary data

1.2.21 Redshank was recorded during red-throated diver surveys in October 2012 to March 2013, little tern and sandwich tern surveys in April to September 2013, red-throated diver surveys in October 2013 to March 2014 and cormorant surveys in October 2014 to March 2015. All observations were of redshank commuting over the sea offshore. Redshank was observed from VPs 2 and 3, 4, 6, 9, 10 and 11 only. All sightings of redshank from all the surveys are summarised in **Table 1.7**.

Table 1.7: Redshank records from Arcadis surveys undertaken between October 2012 and October 2015.

Date	VP	Start	End	No. of birds	Behaviour	Onshore or Inshore waters	Survey type
05/03/2013	VP3	06:25	07:25	3	Commute	Inshore	Red-throated diver 2012-2013
05/03/2013	VP6	08:50	09:35	1	Commute	Inshore	Red-throated diver 2012-2013
27/03/2013	VP10	11:50	12:35	3	Commute	Onshore	Red-throated diver 2012-2013
28/05/2013	VP2	06:10	06:55	1	Commute	Inshore	Little tern 2013

Date	VP	Start	End	No. of birds	Behaviour	Onshore or Inshore waters	Survey type
09/07/2013	VP3	15:40	16:25	1	Commute	Inshore	Little tern 2013
06/08/2013	VP9	10:15	11:00	2	Commute	Inshore	Little tern 2013
12/11/2013	VP6	07:25	08:10	6	Commute	Inshore	Red-throated diver 2013-2014
26/11/2013	VP11	11:15	12:00	1	Commute	Inshore	Red-throated diver 2013-2014
12/11/2014	VP4	08:10	08:55	3	Commute	Inshore	Cormorant survey 2014-2015
12/11/2014	VP3	10:25	11:10	5	Commute	Inshore	Cormorant surveys 2014-2015
16/12/2014	VP10	12:00	12:45	2	Commute	Inshore	Cormorant surveys 2014-2015

1.2.22 Redshank was also observed once during the wetland bird counts, with a single redshank observed on the Minsmere South Levels on 5 March 2015.

1.2.23 In summary, redshank was observed in low numbers along the coast adjacent to the site during the Winter. Redshank was observed within Minsmere South Levels during the breeding season but were not recorded breeding within the site.

c) Gadwall

1.2.24 Gadwall is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due the UK possessing 20-30% of the European non-breeding population (Ref. 1.2).

i. Desk-study

1.2.25 Gadwall form part of the qualifying features of several of the designated sites within 20km of the site, as detailed in **Table 1.8**.

Table 1.8: Statutory designated sites that include gadwall within the qualification.

Designated site	Species relevant qualification detail
Minsmere to Walberswick Ramsar site	Gadwall is designated under Ramsar Criterion 2 on the Minsmere to Walberswick Ramsar site for its important assemblage of rare breeding birds. Gadwall is also a national notable species within the Minsmere to Walberswick Ramsar site with 261 individuals, representing an average of 1.5% of the UK population (five-year peak mean 1998/9-2002/3) supported during the Winter.
Minsmere to Walberswick SPA	Gadwall is an Annex 1 qualifying feature during the breeding and Winter season. The site supports 3.1% of the breeding population in the UK (count as of 1990) and 1.1% of the population in the UK (five-year mean peak 1991/92-1995/96) during the Winter.
Minsmere to Walberswick Heaths and Marshes SSSI, Sizewell Marshes SSSI, Leiston-Aldeburgh SSSI	Gadwall are listed as a breeding bird species within all of these SSSIs.

Suffolk Birds

1.2.26 The Suffolk Birds reports (Ref. 1.9 - Ref. 1.15) describes gadwall as a common resident and a Winter visitor. After a poor breeding season in 2011, numbers of gadwall within the county are back to levels of previous years. The 2017 Suffolk Bird Report (Ref. 1.14) stated that a new site record was reported at RSPB North Warren Reserve (490 records). Significant counts were also reported at RSPB Minsmere Reserve, with 60 breeding pairs confirmed. The 2018 Suffolk Bird Report (Ref. 1.15) stated that the average annual peak count at RSPB Minsmere Reserve continued to exceed the threshold for national importance (peak count of 292). Sightings were also recorded at Dingle Marshes and Orfordness.

RSPB

1.2.27 Data from the RSPB revealed 25 records of gadwall within 5km of the existing Sizewell power station complex. Records were from RSPB North Warren Reserve with 14 records, with a peak count of 229 gadwall (records ranged between six and 229 individual gadwall per record) recorded between 2003 and 2013. Eleven of these records were of breeding gadwall. The other records were from RSPB Minsmere Reserve with a peak count of 69 gadwall (range between 48 and 96 gadwall per record) all of which were classified as confirmed or probably breeding. Pairs of gadwall across Minsmere South Levels ranged from 1 pairs in 2016 to 51 pairs in 2017, no data was recorded for 2018.

BTO

1.2.28 The individual count sector data from the BTO WeBS data for the Minsmere (not including sea) count zone closest to the site, supported an annual five-year mean peak of counts of 394 gadwall. Counts of gadwall occurred during the late breeding period and the Winter period (specifically July, August, December January and February). There were no records of gadwall from the Minsmere offshore count zone.

NGL

1.2.29 NGL recorded gadwall as present on the EDF Energy estate each year for the past 14 years. A summary of the results is shown in **Table 1.9**.

Table 1.9: NGL data for gadwall recorded on the EDF Energy estate.

Year	No. breeding territories (April-June)	NGL Wetland bird survey peak count (January-March and September –December)
2018	7	48
2017	4	17
2016	3	27
2015	4	30
2014	6	25
2013	7	40
2012	4	13
2011	4	19
2010	5	151
2009-10	5	60
2008-09	7	54
2007-08	11	84
2006-07	8	95
2005-06	5	65
2004-05	7	53

ii. Secondary data

1.2.30 Wood Group surveys undertaken April to July 2007 (refer to **Report 14A7.3-2, Annex 14A7.3**), revealed that gadwall was present within the site low numbers, with six breeding territories identified during the dabbling duck surveys. The six territories were found in the following areas in 2007; four pairs in the area of enclosed grazing marsh to the east of Nursery

Covert, and two further pairs on the eastern arm of the Sizewell Marshes SSSI, between Kenton Hills and Leiston Common. Gadwall was also seen commuting along the coast as part of the intertidal and inshore marine surveys. In April to July 2007, gadwall was observed on two occasions with a peak count of three individuals. Throughout the Winter walkover surveys, undertaken in September 2007 to March 2008 (refer to **Report 14A7.3-1, Annex 14A7.3**), gadwall was found in small numbers throughout the ditch system on the EDF Energy estate. The peak count of gadwall on the EDF Energy estate was 97 birds in 2007-2008.

1.2.31 During the seabird survey in 2011-2012 (refer to **Report 14A7.3-3, Annex 14A7.3**), gadwall was seen in August 2011 and November 2011, from VPs 1, 6 and 11. Two records were of foraging and resting gadwall on the sea, these comprised two birds in August 2011 at VP1; and a single bird in November 2011 at VP11. A third record was of 20 birds commuting during the November 2011 survey at VP6.

1.2.32 The breeding bird survey carried out by Wood Group in 2010 (refer to **Report 14A7.3-5, Annex 14A7.3**) revealed one record of gadwall. The two birds were seen in the Sizewell Marshes SSSI on 23 April 2010. Gadwall was also seen in the Sizewell Marshes SSSI by SWT wardens in 2010, but breeding could not be confirmed. The arable reversion breeding bird survey (refer to **Report 14A7.3-8, Annex 14A7.3**) undertaken in 2012 recorded a pair of gadwall flying from Lower Abbey Farm and a male on Cow Marsh Hill; however, no breeding was confirmed.

iii. Primary data

1.2.33 Gadwall was observed on two occasions during the October 2013 to March 2014 red-throated diver surveys. The first was of 14 individuals in November 2013 from VP 2 (the birds were recorded resting). The second was of two commuting birds in March 2014 from VP 4. During the cormorant surveys in 2014-2015, a single gadwall was observed commuting from VP 2 along the coast adjacent to the site in November 2014.

1.2.34 Gadwall was also observed during the waterfowl surveys (2014/15) and (2018/19). **Table 1.10** provides a summary of gadwall sightings from non-coastal surveys undertaken by Arcadis.

Table 1.10: Summary of gadwall sightings from water birds point counts (2014/15) and wintering wetland bird surveys (2018/19).

Date	Location (as per definitions set out within Table 1.3 and 4, section 1.2)	Total number of birds	Survey type
08/01/2015	Area 1	3	Waterfowl survey
05/02/2015	Area 1	29	
11/11/2014	Minsmere South Levels	2	
04/12/2015	Minsmere South Levels	50	
08/01/2015	Minsmere South Levels	110	
05/02/2015	Minsmere South Levels	55	
05/03/2015	Minsmere South Levels	126	
18/12/2015	Area 3	2	
05/02/2015	Area 2	2	
05/03/2015	Area 2	4	
December 2018	Sizewell Marshes SSSI (Compartment C)	4	Wetland bird survey
December 2018	Sizewell Marshes SSSI (Compartment D)	2	
December 2018	Minsmere South Levels (TN 1)	2	
December 2018	Aldhurst Farm	10	
January 2019	Sizewell Marshes SSSI (Compartment A)	29	
January 2019	Sizewell Marshes SSSI (Compartment A)	10	
January 2019	Sizewell Marshes SSSI (Compartment A)	2	
January 2019	Sizewell Marshes SSSI (Compartment D)	4	
January 2019	Sizewell Marshes SSSI (Compartment D)	12	
January 2019	Sizewell Marshes SSSI (Compartment D)	8	
January 2019	Minsmere South Levels (TN 2)	1	
January 2019	Minsmere South Levels (TN 3)	2	
February 2019	Sizewell Marshes SSSI (Compartment A)	2	
February 2019	Sizewell Marshes SSSI (Compartment A)	22	

Date	Location (as per definitions set out within Table 1.3 and 4, section 1.2)	Total number of birds	Survey type
February 2019	Sizewell Marshes SSSI (Compartment D)	2	
February 2019	Sizewell Marshes SSSI (Compartment D)	16	
February 2019	Sizewell Marshes SSSI (Compartment D)	5	

1.2.35 In summary, gadwall was observed within the survey area predominantly during the Winter, within Sizewell Marshes SSSI and Minsmere South Levels. In addition, gadwall was occasionally observed commuting within the coastline adjacent to the site and within the proposed main platform. Breeding season observations were of single or pairs of birds, and breeding gadwall has been recorded within the survey area by NGL.

d) Teal

1.2.36 Teal is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to 40-50% of the European non-breeding population being found within the UK (Ref. 1.2).

i. Desk-study

1.2.37 Teal form part of the qualifying features of several of the designated sites within 20km of the site, refer to **Table 1.11**.

Table 1.11: Statutory designated sites that include teal within the qualification.

Designated site	Species relevant qualification detail
Minsmere to Walberswick Ramsar site	The Minsmere to Walberswick Ramsar site is designated under Ramsar criterion 2 for its important assemblage of rare breeding birds associated with marsh land and reedbed, this includes teal. The area supports 3,083 individuals, representing an average of 1.6% of the UK population (five-year peak mean 1998/9-2002/3).
Minsmere to Walberswick SPA	Teal is an Annex 1 qualifying feature during the breeding season. The area regularly supports 73 Pairs (1% of the UK population) (count as of 1990).
Leiston-Aldeburgh SSSI, Alde-Ore Estuary SSSI and Sizewell Marshes SSSI	Teal is listed as forming a part of the assemblage population within these SSSIs.
Sizewell Levels and	Teal is listed as forming a part of the assemblage

Designated site	Species relevant qualification detail
Associated Areas CWS	population within this CWS

Suffolk Birds

1.2.38 The Suffolk Birds reports (Ref. 1.9 - 1.15) describe teal as a common Winter visitor and passage migrant, scarce resident. The 2017 Suffolk Bird Report (Ref. 1.14) stated that key sites with the highest monthly counts included RSPB Minsmere Reserve, RSPB North Warren Reserve, Hazlewood Marshes, Alde/Ore Estuary, Snape Warren and Orfordness. The 2018 Suffolk Bird Report (Ref. 1.15) also found very similar records to the 2017 report, with Alde/Ore Estuary having the highest peak count of 3115 birds.

RSPB

1.2.39 The RSPB reported 17 records of teal within 5km of the existing Sizewell power station complex. These records ranged from 2003-2013, 12 records were from RSPB North Warren Reserve and five records from RSPB Minsmere Reserve. All five records from RSPB Minsmere Reserve were pairs of breeding teal. Three wintering records were reported from RSPB North Warren Reserve, these records were between 800 to 1,450 individuals. Teal was not observed breeding on Minsmere South Levels between 2015 and 2018.

BTO

1.2.40 The individual count sector data from the BTO WeBS data for the Minsmere (not including sea) count zone closest to the site supported an annual five-year mean of peaks count of 1,270 teal. Counts of teal occurred during the wintering period (specifically October, November, December and January). The BTO WeBS count zone for Minsmere (offshore) supported a five-year annual mean of peak count of one bird. Counts of teal occurred during the Winter period (specifically January and February).

NGL

1.2.41 NGL recorded teal as present on the EDF Energy estate each year for the past 14 years. **Table 1.12** provides a summary of teal records.

Table 1.12: Records of teal on the EDF Energy estate recorded during surveys undertaken by NGL.

Year	No. breeding territories (April-June)	NGL WeBS survey peak count (January-March and September-December)	Farmland bird survey peak count (January-March and October-December)
2018	0	67	Unknown
2017	0	65	Unknown
2016	0	31	Unknown
2015	0	95	Unknown
2014	0	70	0
2013	1	180	0
2012	0	48	0
2011	0	39	1
2010	0	Unknown	0
2009-10	0	58	0
2008-09	1	117	0
2007-08	0	69	0
2006-07	1	54	0
2005-06	1	61	0
2004-05	0	56	0

ii. Secondary data

1.2.42 During the April to July 2007 bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), teal was recorded breeding within the EDF Energy estate, with one pair deemed to have bred in 2007. During the July 2007 to March 2008 bird surveys (refer to **Report 14A7.3-1, Annex 14A7.3**), teal was reported as a bird frequently observed during the walkover wintering bird surveys. During the breeding bird surveys undertaken on the arable reversion area (refer to **Report 14A7.3-8, Annex 14A7.3**) two teal were observed in March 2012, but no evidence of breeding was recorded. Teal was not observed during the 2010 breeding bird surveys undertaken by Wood Group.

1.2.43 During the 2007 to 2008 intertidal and inshore marine surveys (refer to **Report 14A7.1 and 14A7.2, Annex 14A7.3**), flocks of between one and 55 teal were recorded, mainly moving south in October, December and January. A total of 15 flights involving 291 birds within inshore waters were observed.

1.2.44 During the 2011-2012 seabird surveys undertaken by Wood Group (refer to **Report 14A7.3-3, Annex 14A7.3**) teal was observed flying along the coast and resting/foraging on the water. Fewer observations of teal foraging on the sea were made (nine observations), with notable records of 300 teal and 100 teal observed in October from VP 9 and January from VP 1, respectively. Teal was observed on the sea at VPs 1 to 5, 8, 9, 11 and 12 in October 2011 and January 2012. A total of 784 teal were observed foraging or resting on the sea. Teal was also observed commuting in-line with the coast from VPs 1, 2, 4, 5, 6, 7, 10, 11 and 12, and observed between September 2011 to January 2012, March 2012 and July to August 2012 (inclusive). A maximum of 230 teal were observed commuting at any one time (December 2011, VP 9) with a total count of 580 teal observed commuting throughout the whole survey period. Detailed tables of teal observations are found in Table C1 and C2 within **Report 14A7.3-3, Annex 14A7.3**.

iii. Primary data

1.2.45 Teal was recorded during Winter red-throated diver surveys in October 2012 to March 2013, little tern and sandwich tern surveys in April to September 2013, Winter red-throated diver surveys in October 2013 to March 2014, Winter cormorant surveys in October 2014 to March 2015, water bird point counts and wintering bird surveys.

1.2.46 In relation to coastal sightings, all observations were of teal commuting over the sea or resting on the sea. Teal was observed from VPs 1, 10, 11, 12 and 13 only. All sightings of teal from the coastal surveys are summarised in **Table 1.13**.

Table 1.13: Teal observations during coastal Arcadis surveys 2012-2015.

Date	No. of birds	Survey type	Location
31/10/2012	4	Red-throated diver survey 2012-2013	Adjacent to proposed main platform
12/11/2013	3	Red-throated diver survey 2012-2013	Adjacent to proposed main platform
12/11/2013	10	Red-throated diver survey 2012-2013	South of site
20/08/2013	5	Little tern and sandwich tern survey 2013	North of site
12/11/2014	30	Cormorant survey 2014-2015	Adjacent to proposed main platform
20/01/2015	23	Cormorant survey 2014-2015	South of site

Date	No. of birds	Survey type	Location
17/03/2015	1	Cormorant survey 2014-2015	South of site

1.2.47 Teal was observed during the waterfowl surveys, with a peak count of 434 recorded in February 2015 on Minsmere South Levels, and the wintering wetland surveys (2018/19). **Table 1.14** shows a summary of the waterfowl survey and wetland bird survey data for teal. In addition, teal was also observed during the wintering bird surveys undertaken in 2014-2015.

Table 1.14: Summary of teal sightings from water birds point counts (2014/15) and wintering bird surveys (2018/19).

Date	Location (as per definitions set out within Table 1.3 and 4, section 1.2)	No. of birds	Survey type
04/12/2014	Area 1	22	Waterfowl survey
08/01/2015	Area 1	34	
05/02/2015	Area 1	31	
05/03/2015	Area 1	18	
11/11/2014	Minsmere South Levels	21	
08/01/2015	Minsmere South Levels	114	
05/02/2015	Minsmere South Levels	434	
05/03/2015	Minsmere South Levels	193	
18/12/2015	Area 3	9	
08/01/2015	Area 3	2	
19/02/2015	Area 3	12	
03/03/2015	Area 3	14	
04/12/2015	Area 2	47	
08/01/2015	Area 2	22	
05/02/2015	Area 2	58	
05/03/2015	Area 2	9	
22/01/2015	Reedbed within Sizewell Marshes SSSI transect	20	
02/12/2014	Proposed main platform and Sizewell Beach transect	14	
06/01/2015	Proposed main platform and Sizewell Beach transect	13	
December 2018	Sizewell Marshes SSSI (Compartment C)	20	Water bird survey

NOT PROTECTIVELY MARKED

Date	Location (as per definitions set out within Table 1.3 and 4, section 1.2)	No. of birds	Survey type
	Sizewell Marshes SSSI (Compartment D)	4	
	Sizewell Marshes SSSI (Compartment D)	3	
	Sizewell Marshes SSSI (Compartment D)	6	
	Sizewell Marshes SSSI (Compartment D)	6	
	Minsmere South Levels (TN 1)	226	
	Minsmere South Levels (TN 2)	110	
	Aldhurst Farm	12	
	Sizewell Marshes SSSI (Compartment A)	2	
	Sizewell Marshes SSSI (Compartment A)	11	
	Sizewell Marshes SSSI (Compartment B)	4	
	Sizewell Marshes SSSI (Compartment C)	11	
	Sizewell Marshes SSSI (Compartment C)	4	
January 2019	Sizewell Marshes SSSI (Compartment C)	1	
	Sizewell Marshes SSSI (Compartment C)	1	
	Sizewell Marshes SSSI (Compartment D)	6	
	Sizewell Marshes SSSI (Compartment D)	1	
	Sizewell Marshes SSSI (Compartment D)	16	
	Sizewell Marshes SSSI (Compartment D)	3	
	Sizewell Marshes SSSI (Compartment D)	10	
	Minsmere South Levels (TN 1)	14	
	Minsmere South Levels (TN 2)	51	
February 2019	Sizewell Marshes SSSI (Compartment A)	1	

Date	Location (as per definitions set out within Table 1.3 and 4, section 1.2)	No. of birds	Survey type
	Sizewell Marshes SSSI (Compartment A)	21	
	Sizewell Marshes SSSI (Compartment A)	1	
	Sizewell Marshes SSSI (Compartment B)	12	
	Sizewell Marshes SSSI (Compartment C)	2	
	Sizewell Marshes SSSI (Compartment C)	4	
	Sizewell Marshes SSSI (Compartment C)	4	
	Sizewell Marshes SSSI (Compartment D)	6	
	Sizewell Marshes SSSI (Compartment D)	3	
	Sizewell Marshes SSSI (Compartment D)	13	
	Sizewell Marshes SSSI (Compartment D)	16	
	Sizewell Marshes SSSI (Compartment D)	1	
	Sizewell Marshes SSSI (Compartment D)	1	
	Minsmere South Levels (TN 2)	260	
	Minsmere South Levels (TN 3)	18	

1.2.48 In summary, teal was observed along the coast, and within Sizewell Marshes SSSI and Minsmere South Levels, and occasionally in the vicinity of the proposed main platform. Teal was observed frequently within the survey area and often in large numbers during the Winter. Observations of teal within the survey area during the breeding season were infrequent and rare. The count numbers presented in the table above were collated during various surveys in the months identified.

e) **Shoveler**

1.2.49 Shoveler are regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This

inclusion is due the UK possessing 30-40% of the European non-breeding population (Ref. 1.2).

i. Desk-study

1.2.50 The desk-study revealed that shoveler form part of the qualifying features of several of the designated sites within 20km of the site, these are detailed in **Table 1.15**.

Table 1.15: Statutory designated sites that include shoveler within the qualification.

Designated site	Species relevant qualification detail
Minsmere to Walberswick Ramsar site	Shoveler is designated under Ramsar criterion 2 on the Minsmere to Walberswick Ramsar site for its important assemblage of rare breeding birds.
Minsmere to Walberswick SPA	Shoveler is an Annex 1 qualifying feature during the breeding and Winter season. The area supports 2.3% of the breeding population in the UK, (count as of 1990) and 1% of the UK wintering population 5 year mean peak 1991/92-1995/96.
Minsmere to Walberswick Heaths and Marshes SSSI, Alde-Ore Estuary SSSI and Sizewell Marshes SSSI	Shoveler is listed as a breeding species within these three SSSIs.

Suffolk Birds

1.2.51 The Suffolk birds reports (Ref. 1.9 - 1.15) describe shoveler as a common Winter visitor and passage migrant and an uncommon resident within the county. The 2017 Suffolk Bird Report (Ref. 1.14) stated that key sites with the highest monthly counts included RSPB Minsmere Reserve, RSPB North Warren Reserve, Alde/Ore Estuary, Snape Warren, Orfordness and Hollesley Marshes. The peak count exceeded 300 at Alde/Ore Estuary (maintaining the highest Winter records). The 2018 Suffolk Bird Report (Ref. 1.15) stated that Alde/Ore Estuary maintained the highest number of records, with other sightings at the same locations as in 2017.

RSPB

1.2.52 The RSPB provided 25 records of shoveler within 5km of the existing Sizewell power station complex. Records ranged from 2003 to 2013 and included probable or confirmed breeding records, and over wintering records. Records were located from RSPB North Warren Reserve (14 records, peak count of 156 wintering individuals and four breeding individuals) and RSPB Minsmere Reserve (11 records, all confirmed or probable breeding records, peak count of 105). Wintering records ranged

between 119 to 156 individuals (all recorded in 2003 from RSPB North Warren Reserve). Confirmed breeding numbers were between 105 pairs, and one pair between 2003 and 2013. Pairs of shoveler across Minsmere South Levels ranged from two pairs in 2016 to 21 pairs in 2018.

SBIS

1.2.53 Desk-study records provided by SBIS revealed no records for shoveler within 2km of the site.

BTO

1.2.54 The individual count sector data from the BTO WeBS data for the Minsmere (not including sea) count zone closest to the site, supported an annual five-year mean of peaks count of 240 for shoveler. High counts of shoveler occurred during the Winter period (specifically October and November). There were no records for shoveler from the Minsmere offshore count zone.

NGL

1.2.55 NGL have recorded the presence of shoveler every year for the past 14 years during WeBS counts. Shoveler was also recorded during breeding bird surveys and breeding was confirmed on the site in 2005, 2006 and 2007. A summary of the records is shown in **Table 1.16**.

Table 1.16: Records of shoveler on the EDF Energy estate recorded during surveys undertaken by NGL.

Year	No. breeding territories (April-June)	NGL WeBS peak count (January-March and September-December)
2018	2	7
2017	0	17
2016	1	5
2015	1	18
2014	0	18
2013	0	26
2012	0	4
2011	0	2
2009-10	0	4
2008-09	0	4
2007-08	0	2
2006-07	1	0

Year	No. breeding territories (April-June)	NGL WeBS peak count (January-March and September–December)
2005-06	1	2
2004-05	0	5

ii. Secondary data

1.2.56 During the intertidal and marine surveys undertaken in April 2007 to March 2008 by Wood Group (**Report 14A7.3-1 and 14A7.3-2, Annex 14A7.3**) within the coast adjacent to the site, small groups of male shoveler were recorded twice, although both observations were a long way offshore.

1.2.57 The Wood Group 2010 breeding bird survey (**Report 14A7.3-5, Annex 14A7.3**) revealed one record of shoveler. The two birds were seen in the Sizewell Marshes SSSI on 23 April 2010 but breeding was not confirmed.

1.2.58 During the Wood Group 2011-2012 seabird survey 2011-2012 (**Report 14A7.3-3, Annex 14A7.3**) shoveler was seen in November and December 2011, and January and February 2012 from VPs 1, 7 and 9. All records were of commuting shoveler. One shoveler was observed commuting from VP 1.

iii. Primary data

1.2.59 Shoveler was observed during the Arcadis red-throated diver surveys in October 2012 to March 2013 and October 2013 to March 2014. In 2012-2013, three shoveler were observed resting from VP 3 in February 2013. In 2013-2014, six shoveler were observed commuting from VP 13 in December 2012, and a shoveler was observed commuting from VP 6 in March 2013. During the cormorant surveys in 2014-2015 four shoveler were observed resting from VP 1 in January 2015.

1.2.60 Shoveler was also observed during the water bird point counts in 2015 and wetland bird surveys 2018/19. **Table 1.17** provides a summary of shoveler sightings from non-coastal surveys undertaken by Arcadis.

Table 1.17: Summary of shoveler sightings from water birds point counts (2014-2015) and wetland bird surveys (2018-19).

Date	Location (as per definitions set out within Table 1.3 and 4, section 1.2)	Number of birds	Survey type
05/02/2015	Area 1	2	Waterfowl survey

Date	Location (as per definitions set out within Table 1.3 and 4, section 1.2)	Number of birds	Survey type
11/11/2014	Minsmere South Levels	10	Waterfowl survey
04/12/2014	Minsmere South Levels	45	Waterfowl survey
08/01/2015	Minsmere South Levels	79	Waterfowl survey
05/02/2015	Minsmere South Levels	85	Waterfowl survey
05/03/2015	Minsmere South Levels	61	Waterfowl survey
December	Aldhurst Farm	3	Wetland bird survey
January	Minsmere South Levels (TN 2)	1	Wetland bird survey
February	Minsmere South Levels (TN 2)	18	Wetland bird survey

1.2.61 In summary, shoveler was present within the survey area during the Winter, predominantly within Sizewell Marshes SSSI and Minsmere South Levels. Shoveler have bred within the survey area in the past (likely to be Sizewell Marshes SSSI or Minsmere South Levels), but the last confirmed breeding record was 2007.

f) Red-throated diver

1.2.62 Red-throated diver is listed on Schedule 1 of the W&CA (Ref. 1.1) and is included on the Green List of BoCC (Ref. 1.2).

i. Desk-study

1.2.63 The desk-study revealed that red-throated diver represent one of the qualifying features of one designated site within 20km of the site, as detailed in **Table 1.18**.

Table 1.18: Statutory designated sites that include red-throated diver within the qualification.

Designated site	Species relevant qualification detail
Outer Thames Estuary SPA	Within the Outer Thames Estuary SPA, red-throated diver is designated as an annex 1 species. The site supports an estimated population of 6,466 individuals, 38% of the UK red-throated diver population (peak mean over the period 1989-2006/07).

Outer Thames Estuary documentation

1.2.64 Studies to investigate numbers of inshore water birds using the Greater Thames Estuary (between North Kent and Great Yarmouth) carried out by

the Joint Nature Conservation Committee (JNCC) over eight Winter seasons between 1988/89 and 2006/07 (Webb *et al.*, 2009), indicated that, within the Greater Thames, red-throated diver was recorded mainly in waters less than 20m deep. However, these data also suggest that red-throated diver was found considerably further offshore than previously reported, where suitable shallow sandbanks occur.

- 1.2.65 Large numbers of divers were recorded, mainly in December and January/February of each year. Red-throated diver was the dominant diver species in the Greater Thames, being present throughout the area. Within the Outer Thames Estuary SPA, birds were regularly recorded in flocks of five to ten individuals, and frequently up to 20, although the largest aggregation recorded was 150 individuals. The study showed that there were large variations in total numbers over the survey period, with numbers of birds ranging from 425 (March 2004) to 10,884 individuals (January 2003), with a mean of peak counts of 6,618 individuals within the Outer Thames Estuary SPA.

Suffolk Birds

- 1.2.66 The Suffolk birds reports (Ref. 1.9 - 1.15) describe red-throated diver as a common Winter visitor and passage migrant.
- 1.2.67 The red-throated diver population off the Suffolk coast was estimated at 1,500-3,000 birds during the 1990s (Piotrowski, 2003). Large numbers were then recorded in 2004 (over 8,000), with much lower counts during the subsequent winters of 2005 to 2007. The Suffolk Birds reports (Ref. 1.9 - 1.14) describe the highest number of red-throated divers observed offshore in the county at approximately 2,358 and 5,669 respectively, with the highest numbers within the county recorded within the locality of Thorpeness. These records were of commuting birds.
- 1.2.68 The Suffolk Birds reports highlight that red-throated diver can be seen offshore from Suffolk in all months of the year, but that the peak period is from late November to February. Numbers occurring offshore of Suffolk during the Winter months vary greatly between years, but the offshore waters between Orford Ness and Lowestoft are known to support particularly large numbers of wintering red-throated diver. It is difficult to predict the reasons behind the variations in numbers, but they are likely to be related to factors including weather conditions and the availability and distribution of prey species, such as sprat.
- 1.2.69 The 2017 Suffolk Bird Report (Ref. 1.14) stated that 2017 was a very poor year for red-throated diver. However, there were peak counts of 300 at RSPB Minsmere Reserve and 300 at Thorpeness. The 2018 Suffolk Bird Report (Ref. 1.15) stated that for the second year, there were few large

gatherings off the Suffolk coast. Sightings were reported at RSPB Minsmere Reserve and Orfordness.

RSPB

1.2.70 RSPB reported three records of red-throated diver within 5km of the existing Sizewell power station complex, all from 2003. All records were from offshore of the RSPB North Warren Reserve and ranged between 367 and 1,968 individuals.

SBIS

1.2.71 Desk-study data provided by SBIS reported six records of red-throated diver within 2km of the site within the last ten years. Sightings were offshore from RSPB Minsmere Reserve, Thorpeness, Aldringham Common and Walks/ Thorpeness Golf Course and “Sizewell”.

BTO WeBS

1.2.72 Within the Minsmere offshore BTO WeBS count zone the peak count of red-throated diver between 2008 and 2013 was 200, with an annual five-year mean-of-peaks of 78. Red-throated diver was not observed in the Minsmere (not including sea) count zone.

ii. Secondary data

1.2.73 During the Wood Group surveys, red-throated diver was observed in relatively high numbers (peak count commuting 710 birds). The largest numbers of divers were recorded in March to April 2011 and from December 2011 to April 2012, with much smaller numbers seen from August to October 2011, and none in May, June and July 2011 (refer to **Report 14A7.3-3, Annex 14A7.3**). Large numbers of birds were seen loafing and foraging on the inshore waters within the survey area when weather conditions were calm. Flight observations were primarily short distances, but there were a number of occasions where large groups of red-throated diver were seen flying these distances (up to 100 birds). **Table 1.19** shows the number (total and mean) and behaviour of red-throated diver observed at each VP between March 2011 and April 2012.

Table 1.19: Red-throated diver behaviour observed at each VP between March 2011 and April 2012 (taken from Wood Group Seabird 2011-2012 report).

VP	Commuting Total	Commuting Mean	Foraging/loafing Total	Foraging/loafing Mean
VP 1	213	15.1	128	9.1

VP	Commuting	Commuting	Foraging/loafing	Foraging/loafing
VP 2	208	14.8	62	4.4
VP 3	112	8.0	47	3.4
VP 4	464	33.1	50	3.6
VP 5	210	15.0	222	15.9
VP 6	264	18.9	157	11.2
VP 7	322	22.9	119	8.5
VP 8	379	29.0	38	2.9
VP 9	102	7.7	18	1.4
VP 10	322	24.8	57	4.4
VP 11	445	34.2	108	8.3
VP 12	956	73.5	53	4.1

1.2.74 Distribution of red-throated diver was reasonably even throughout the 12 VP locations. The largest numbers of foraging and resting divers were observed near Thorpeness (VPs 5-7), with low numbers observed offshore of the existing Sizewell power station complex (VPs 1-3). The largest numbers of commuting birds were observed at Orford Ness (VP12).

1.2.75 The distance over which red-throated diver were observed from the VPs was categorised into 1km bands (1-2km, 2-3km, 3-4km, 4-5km and 5-6km). Red-throated diver was recorded commuting in all distance bands, with the number observed decreasing with distance. The number of red-throated diver observed in each distance band for all the VPs is shown in Figure 3.3a and 3.3b, **Report 14A7.3-3, Annex 14A7.3**.

iii. Primary data

1.2.76 The peak numbers of red-throated diver recorded in the Arcadis surveys in 2012-2013 and 2013-2014 (i.e. the maximum number observed from each VP during a single survey), and the mean number observed at each VP throughout the survey period (October-March), are shown in **Table 1.20**.

Table 1.20: Peak and mean numbers of red-throated diver observed at each VP in 2012-2013 and 2013-2014 survey periods.

VP Number	Peak counts of red-throated diver observed in 2012-2013	Mean number of red-throated diver observed per survey visit 2012-2013	Peak counts of red-throated diver observed in 2013-2014	Mean number of red-throated diver observed per survey visit 2013-2014
VP 1	108	13.8	200	42.83

VP Number	Peak counts of red-throated diver observed in 2012-2013	Mean number of red-throated diver observed per survey visit 2012-2013	Peak counts of red-throated diver observed in 2013-2014	Mean number of red-throated diver observed per survey visit 2013-2014
VP 2	34	6.2	6	6.92
VP 3	28	5.4	14	7.92
VP 4	50	8.8	8	8.83
VP 5	25	5.0	55	7.83
VP 6	20	2.5	50	8.67
VP 7	72	10	24	23.00
VP 8	147	19.6	43	13.42
VP 9	167	22.7	24	9.58
VP 10	68	22.9	100	31.63
VP 11	227	42.1	200	83.88
VP 12	155	40.6	120	51.50
VP 13	133	20.3	60	18.25
VP 14	86	19.1	80	28.67
VP 15	65	14.7	700	87.50

1.2.77 The mean total number of sightings per visit (across all VPs) was 374.75 (with a range of 1 to 1,976 observed per survey visit) in 2013-2014. In comparison, during 2012-2013 this was 212.1 (with a range of 0 to 1,261 observed per visit).

1.2.78 **Table 1.21** shows temporal distribution of red-throated diver across both survey years (2012-2013 and 2013-2014).

Table 1.21: Temporal distribution of red-throated diver across both survey years (2012-2013 and 2013-2014).

Month	Dates of survey	Total number red-throated diver observed across all 15 VPs 2012-2013	Dates of survey	Total number red-throated diver observed across all 15 VPs 2013-2014
October	31/10/2012	12	17/10/2013	3
			31/10/2013	1
November	28/11/2012	20	13/11/2013	1
			26/11/2013	112
December	13/12/2012	74	05/12/2013	48

Month	Dates of survey	Total number red-throated diver observed across all 15 VPs 2012-2013	Dates of survey	Total number red-throated diver observed across all 15 VPs 2013-2014
	19/12/2013	171	17/12/2013	1,976
January	03-04/01/2013	45	09/01/2014	44
	22/01/2013	49	23/01/2014	964
February	06/02/2013	193	04/02/2014	42
	19/02/2013	281	20/02/2014	18
March	05/03/2013	1261	06/03/2014	781
	27/03/2013	429	19/03/2014	455

1.2.79 The month of October revealed low numbers of red-throated diver in both years, with numbers increasing during November, peaking in December to January, with large numbers still present in March. Figure 2 (from **Report 14A7.4-2** in **Annex 14A7.4**) displays the total number of red-throated diver recorded each month, during each survey year and at which distance bands these observations were made.

1.2.80 Data collected during the 2012-2013 survey period suggest that the southern and northern portion of the survey area (from Aldeburgh to Orford Ness (VPs 10-12) and from Minsmere to Dunwich (VPs 13-15), respectively) support the greatest number of red-throated diver. This geographic distribution was again observed during the 2013-2014 surveys, with greater numbers being recorded from Orford Ness and Dunwich.

1.2.81 Relatively low numbers of red-throated diver were observed in close proximity to the site (VPs 1-4) in both 2012-2013 and 2013-2014, with a peak count of only 101 red-throated divers observed during these survey periods. However, an exception was January 2014, when higher numbers of red-throated diver were recorded from VP 1 (total of 259 red-throated divers observed on 23 January 2014).

1.2.82 Red-throated diver was observed out to a maximum of 3km offshore during the 2013-2014 survey period (which is the estimated limit of the shore-based survey methodology that was used). This is the same as the maximum distance at which red-throated diver was observed during the 2012-2013 survey period. Figure 2, **Annex 14A7.4**, displays the number of red-throated diver observed at various distance bands from the shore (0-500m, 501-1,000m, 1,001-2,000m and >2,000m) during each survey. Red-throated diver was predominantly observed within the 501-1,000m distance band, with large numbers of divers also occasionally observed in the 1001-

2,000m band; for example, 700 birds were observed between 1,001m and 2,000m offshore in December 2013.

1.2.83 In summary, whilst red-throated diver has been observed offshore, they were more frequently recorded offshore to the north of the site (at Dunwich) and to the south (at Orford Ness).

g) Bearded tit

1.2.84 Bearded tit is listed on Schedule 1 of the W&CA (Ref. 1.1). Bearded tit is also a Green Listed BoCC (Ref. 1.2).

i. Desk-study

1.2.85 The desk-study revealed that bearded tit form part of the qualifying features of two of the designated sites within 20km of the site, as detailed in **Table 1.22**.

Table 1.22: Statutory designated sites that include bearded tit within the qualification.

Designated site	Species' relevant qualification detail
Minsmere to Walberswick Ramsar site	Within the Minsmere to Walberswick Ramsar site, the site is designated for its important assemblage of rare breeding birds associated with marsh land and reedbed, including bearded tit.
Minsmere to Walberswick Heaths and Marshes SSSI	Bearded tit is listed as a breeding species within the SSSI.

Suffolk Birds

1.2.86 The Suffolk Birds reports (Ref. 1.9 - 1.15) describe bearded tit as an uncommon resident within Suffolk. The 2017 Suffolk Bird Report (Ref. 1.14) stated that RSPB Minsmere Reserve held 34 territories and Walberswick held 22 territories. There were also records from Dunwich and Orfordness. The 2018 Suffolk Bird Report (Ref. 1.15) stated that territories were recorded at the same sites as in 2017, however exact numbers of territories were not recorded due to a 'lack of capacity for monitoring'.

RSPB

1.2.87 The RSPB reported 23 records of bearded tit within 5km of the existing Sizewell power station complex between 2003 and 2013. Eleven of these records were from RSPB Minsmere Reserve, and the other 12 were from RSPB North Warren Reserve. The maximum number recorded was 54 pairs. All records except one were of probable or confirmed breeding.

SBIS

- 1.2.88 Desk-study records provided by SBIS revealed four records of bearded tit between 2003 and 2010. These were located within RSPB Minsmere Reserve and within Sizewell Marshes SSSI.

NGL

- 1.2.89 NGL have recorded bearded tit as present on the EDF Energy estate in eight of the last 14 years, with the species recorded in 2017, 2014, 2013, 2008-2009, 2007-2008, 2006-2007, 2005-2006, and 2004-2005. Bearded tit was predominantly recorded during ringing studies. NGL data shows that birds were captured during mist-netting on three occasions, with two males caught in the Autumn/Winter of 2004-2005, five adults caught in the Autumn/Winter of 2013 and seven trapped during post breeding dispersal at Retsom's Field in 2014. Although one breeding territory was recorded in 2007 in the reedbed in Sizewell Marshes SSSI, successful breeding at this location was not proven. Two adult bearded tit were ringed in 2016 and three adult bearded tit were ringed in 2018.

ii. Secondary data

- 1.2.90 Bearded tit was reported in the second interim Wood Group report as a species present during the wintering bird surveys in 2007-2008 (refer to **Report 14A7.3-1, Annex 14A7.3**).

iii. Primary data

- 1.2.91 Bearded tit was not recorded within the survey area during the Arcadis breeding bird surveys (2014) nor the wintering bird surveys (2014-2015). Bearded tit was, however, regularly recorded using the reedbeds within Minsmere South Levels, and was recorded incidentally during the December and January 2019 marsh harrier surveys at Aldhurst Farm.
- 1.2.92 In summary, bearded tit was regularly recorded during the Winter, using the reedbeds on Minsmere South Levels. However, there have been no confirmed records of breeding. One breeding territory was recorded in 2007 in Sizewell Marshes SSSI, but breeding was not confirmed.

h) Bittern

- 1.2.93 Bittern is a Schedule 1 species listed on the species listed on Schedule 1 of the W&CA (Ref. 1.1). Bittern is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to a historical decline (but with a recent recovery), its breeding rarity within the UK (with a breeding population of

only 80 pairs), and its wintering rarity (with an estimated 600 birds present overwinter (Ref. 1.2)). Bittern is also listed as a species of principal importance for the purpose of conserving biodiversity under section 41 of the NERC Act (Ref. 2006), and the Suffolk Biodiversity Action Plan (BAP) also identified bittern as a priority species for conservation action within the county (Ref. 1.39)).

i. Desk-study

1.2.94 The desk-study revealed that bittern form part of the qualifying features of several of the designated sites within 20km of the site (**Table 1.23**).

Table 1.23: Statutory designated sites that include bittern within the qualification.

Designated site	Species relevant qualification detail
Minsmere to Walberswick SPA	Bittern is an Annex 1 qualifying feature during the breeding season, the SPA supporting seven individuals, representing at least 35% of the breeding population in Great Britain (five-year mean, 1993 to 1997). Over Winter it supports 14 individuals, representing at least 14% of the wintering population in Great Britain (Count as at 1998).
Minsmere to Walberswick Heaths and Marshes SSSI	This SSSI supports a breeding population of bittern.
Leiston to Aldeburgh SSSI	This SSSI supports a wintering population of bittern.

Suffolk Birds

1.2.95 The Suffolk Birds reports (Ref. 1.9 - 1.15) state that bittern have a slowly increasing breeding population, are a scarce resident, a passage migrant and a Winter visitor within Suffolk. The Suffolk coast holds a large percentage of the UK population of bittern, as shown in **Table 1.24** (Ref. 1.13).

Table 1.24: Occupied bittern sites between 1998-2012 in the UK and Suffolk.

Year	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12
Min. No. occupied bittern sites (UK)	9	11	14	18	20	24	31	28	27	33	41	43	47	51	53
Min. no occupied bittern sites (Suffolk coast)	4	8	10	15	14	18	19	20	20	20	24	28	26	25	25
% occupied UK bittern sites that	44	73	71	83	70	75	61	71	74	61	59	65	55	49	47

Year	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12
are along Suffolk coast															

1.2.96 The 2017 Suffolk Bird Report (Ref. 1.14) stated that RSPB Minsmere Reserve held the largest number of booming males in the county with 12 being noted in surveys and eight nests were confirmed to be active. Single sightings were also recorded at Orfordness and Boyton Marshes. The 2018 Suffolk Bird Report (Ref. 1.15) stated that there were a total of 26 booming males on the Suffolk coast, compared with 33 in 2017. At RSPB Minsmere Reserve, nine booming males and eight nests were reported.

RSPB (general desk-study)

1.2.97 The RSPB provided 66 records of bittern within 5km of the existing Sizewell power station complex; dating from 2003 to 2011. Records at RSPB Minsmere Reserve (32 records) were of between eight and ten booming or displaying males for each record. One record was of nine booming males from Minsmere to Walberswick SPA. RSPB North Warren Reserve had 32 records of booming bittern between 2003 and 2009, with between one and three bitterns recorded each time. A single record of a booming bittern from 2007 was located in Sizewell Marshes SSSI. Bittern are reported by the RSPB to use the Minsmere South Levels infrequently.

RSPB (species-specific data)

1.2.98 The RSPB provided specific nest location information for bittern in relation to the population at the RSPB Minsmere Reserve. Between four and seven bittern nests were located at the Reserve each year between 2009 and 2013.

SBIS

1.2.99 Desk-study records provided by SBIS reported five records of bittern within 2km of the site within the last ten years. One sighting, from 2012, was classed as “Sizewell Marshes SSSI”; this was likely to be within the site. All other sightings were located within RSPB Minsmere Reserve, RSPB North Warren Reserve, Leiston, Thorpeness or Aldringham.

BTO WeBS

1.2.100 Within the Minsmere BTO WeBS count zone (‘not including sea’; refer to **Figure 14A7.2**), the peak count of bittern between 2008 and 2013 was three, with an annual five-year mean of three.

NGL

1.2.101 NGL have recorded bittern during WeBS counts and incidentally on site within the EDF Energy estate, and these sightings are summarised in **Table 1.25**.

Table 1.25: Summary of bittern observations on the EDF Energy estate during monitoring undertaken by NGL.

Report date	Observation
2004-2005	Single bittern observed (incidental sighting).
2005-2006	Single bittern observed; incidental sighting in reedbed within Sizewell Marshes SSSI.
2006-2007	Single bittern observed; incidental sighting.
2007-2008	Male booming in reedbed within Sizewell Marshes SSSI for a week.
2008-2009	One bird flushed from reedbed within Sizewell Marshes SSSI.
2009	One bird flushed from reedbed within Sizewell Marshes SSSI.
2010	One bird flushed from reedbed within Sizewell Marshes SSSI, and one bird observed during BTO WeBS count.
2011	Bittern booming in April, and one bittern observed during BTO WeBS count.
2012	Bittern booming for three days in March, and one observed during WeBS count.
2013	Bittern was observed throughout the year incidentally.
2014	A male bird heard booming in the Spring in Sizewell Marshes SSSI during the breeding bird survey.
2015	Two records of bittern during BTO WeBS count (March and December). Bittern booming in the Spring.
2016	No breeding territories identified.
2017	No breeding territories identified.
2018	No breeding territories identified.

ii. Secondary data

1.2.102 Wood Group 2008 surveys recorded ten bittern sightings over 72 hours of survey work (an encounter rate of one bittern per 7.2 hours). The results of these surveys are shown in Table 3.2 and Figure 3.1 of **Report 14A7.3-6, Annex 14A7.3**. The majority of bittern activity recorded was focussed to the west of Wood Group’s VP 1 located on Minsmere South Levels. It was concluded that there was no evidence of bittern commuting to and from Sizewell Marshes SSSI, nor of female bitterns nesting in Minsmere provisioning their young with prey obtained from Sizewell Marshes SSSI.

Ditches within Minsmere South Levels were used by bittern, but this activity was approximately 1km north of the site.

1.2.103 Detailed results of Wood Group’s surveys undertaken between April 2011 and March 2012 are shown in Table 3.2c and Figure 3.2c of **Report 14A7.3-4, Annex 14A7.3**. Bittern was recorded on five occasions from VPs but was not recorded during walkover surveys. Two observations were of birds flying from RSPB Minsmere Reserve main reedbed south to Minsmere South Levels (flights 3 and 5); two records were of birds on Minsmere South Levels (flights 1 and 2); and there was one record of a bittern flight south of Goose Hill and into the reedbed area to the north-east of the woodland at Grimseys (flight 4). None of the five flights were recorded during the breeding period. The 2011-2012 data also indicated that bittern did not use Sizewell Marshes SSSI on a regular basis during either the Winter or breeding season.

iii. Primary data

1.2.104 During the 2014-2015 marsh harrier VP surveys, 14 sightings of bittern flights were recorded (see **Table 1.5-26**). Of these flights, 12 occurred in June and July 2014, and all of the observations were recorded from VP 3 (within Minsmere South Levels). The remaining two flights were recorded in March 2015, with one flight recorded from VP 3 and the other from VP 6 (Sizewell Marshes SSSI).

1.2.105 During the 2015 Summer VP surveys, seven sightings of bittern flights were recorded. All of these records were from June 2015 and were recorded from VP 3. During the arable 2015 marsh harrier surveys, a single bittern flight was recorded at VPD, south-east of Eastbridge (refer to **Figure 14A7.13**). A summary of all bittern flights recorded are listed in **Table 1.24** and shown on **Figure 14A7.13**.

Table 1.26: Bittern observations during marsh harrier VP surveys April 2014-October 2015.

Date	VP	Number of birds	Activity	Survey Type
25/06/2014	VP3	1	Flying north	Bittern, marsh harrier and hen harrier survey 2014
25/06/2014	VP3	1	Flying north over trees	
26/06/2014	VP3	1	Flew from RSPB Minsmere Reserve then landed in long grass by the windmill	
26/06/2014	VP3	1	Flew approximately 40m then landed	
26/06/2014	VP3	1	Flew towards RSPB Minsmere	

Date	VP	Number of birds	Activity	Survey Type
			Reserve	
09/07/2014	VP3	1	Flew across Minsmere South Levels then landed	
09/07/2014	VP3	1	Moving across Minsmere South Levels	
09/07/2014	VP3	1	Flew to RSPB Minsmere Reserve	
10/07/2014	VP3	1	Flying	
10/07/2014	VP3	1	Flying	
23/07/2014	VP3	1	Flying	
23/07/2014	VP3	1	Flew from RSPB Minsmere Reserve then landed in field	
05/03/2015	VP3	1	Moved across Minsmere South Levels.	
18/03/2015	VP6	1	Flew low over the top of the trees from the south and landed in the reedbed at the south-west end.	
04/06/2015	VP3	1	Moving across field	Bittern, marsh harrier and hen harrier survey 2015
17/06/2015	VP3	1	Flew to RSPB Minsmere Reserve	
17/06/2015	VP3	1	Flew from RSPB Minsmere Reserve and landed	
17/06/2015	VP3	1	Flew from RSPB Minsmere Reserve and landed	
17/06/2015	VP3	1	Flew from RSPB Minsmere Reserve and landed	
17/06/2015	VP3	1	Flew to RSPB Minsmere Reserve	
17/06/2015	VP3	1	Flew from RSPB Minsmere Reserve and landed	
16/06/2015	VPD	1	Flew from RSPB Minsmere Reserve and landed	Marsh harrier arable surveys 2015

1.2.106 A single bird was also observed in December 2018 within Minsmere South Levels during the wetland bird surveys 2018-19.

1.2.107 In summary, Suffolk supports a large proportion of the UK’s breeding bittern population. However, whilst the species is known to breed at RSPB Minsmere Reserve, occasional booming has been recorded within the survey area, and bittern have been recorded flying over Minsmere South Levels and Sizewell Marshes SSSI, they have not been confirmed as breeding within the survey area.

i) Marsh harrier

1.2.108 Marsh harrier is listed on Schedule 1 of the W&CA (Ref. 1.1). Marsh harrier is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to a historical decline (but a recent recovery), and to the fact that 50-60% of the UK breeding population is found at ten or fewer sites (Ref. 1.2).

i. Desk-study

1.2.109 The desk-study revealed that marsh harrier form part of the qualifying features of several of the designated sites within 20km of the site, as detailed in **Table 1.27**.

Table 1.27: Statutory designated sites that include marsh harrier within the qualification.

Designated site	Species relevant qualification detail
Minsmere to Walberswick Ramsar site	Marsh harrier forms a part of the site designation under criterion 2 for an important assemblage of breeding birds, with peak counts in the breeding season of 16 pairs, representing an average of 10.5% of the UK population (five-year mean 1993-1997).
Minsmere to Walberswick SPA	Marsh harrier is an Annex 1 qualifying feature during the breeding season. This area supports 16 pairs, representing at least 10% of the UK breeding population (five-year mean, 1993-1997).
Alde-Ore Estuary SPA	Marsh harrier is an Annex 1 qualifying feature during the breeding season. This area supports three pairs, representing at least 1.9% of the breeding population in the UK (five-year mean, 1993-1997).
Minsmere to Walberswick Heaths and Marshes SSSI	These SSSIs all feature marsh harrier as a breeding species.
Alde Ore Estuary SSSI	
Leiston to Aldeburgh SSSI	

Suffolk Birds

1.2.110 The Suffolk Birds reports (Ref. 1.9 - 1.15) state that marsh harrier is a fairly common Summer visitor and passage migrant, with increasing numbers noted over Winter within Suffolk. Across the county, marsh harrier was observed mostly to the east, along the coastal fringe, but have increasingly been observed to the west too. Breeding has been recorded at Benacre Broad, Easton Broad, Hen Reedbeds, Westwood Marshes, Hare’s Creek, Shotley, Boyton Marshes, Orford Ness and Lakenheath Fen.

1.2.111 The 2017 Suffolk Bird Report (Ref. 1.14) stated that the number of wintering birds increased but breeding success was not widely reported. Some of the peak counts were recorded at RSPB Minsmere Reserve, Snape, Dingle Marshes and Orfordness. Breeding was confirmed at various sites including RSPB Minsmere Reserve (nine nests), RSPB North Warren Reserve (two nests), Snape Wetlands (three breeding pairs) and Dingle Marshes (one breeding pair). Additionally, during the second Winter counts, four individuals were recorded at Sizewell Belts and 24 at RSPB Minsmere Reserve.

1.2.112 The 2018 Suffolk Bird Report (Ref. 1.15) reported eight nests at RSPB Minsmere Reserve (with 12 young fledged), two nests at RSPB North Warren Reserve (with five young) and one nest at Dingle Marshes (with one young).

RSPB (general desk-study)

1.2.113 The RSPB provided 39 records of marsh harrier (between 2003 and 2005), 21 of which were of birds nesting within 5km of the existing Sizewell power station complex. A total of 11 records were from RSPB Minsmere Reserve (with between eight and ten nests recorded per year), whilst RSPB North Warren Reserve had 14 records (11 of which were either confirmed or probable breeding marsh harriers, with one to three nests recorded each year). In addition, between two and three individuals were recorded outside the breeding season at RSPB North Warren Reserve. One record was for the area Minsmere to Walberswick in 2006, which recorded a total of 13 breeding pairs. RSPB have stated that marsh harrier frequently forage on Minsmere South Levels during both the breeding and the overwintering season.

RSPB (species-specific data)

1.2.114 Marsh harrier are known to breed at Minsmere, Dingle Marshes and RSPB North Warren Reserves. Data provided by the RSPB (in 2016) confirmed six nests in 2014 and nine in 2015 at Minsmere (although three nests failed in 2015), one nest at Dingle Marshes in both 2014 and 2015, and two nests in 2014 and one in 2015 at North Warren.

SBIS

1.2.115 Desk-study records provided by SBIS reported eight records of marsh harrier in the last ten years. Of these, five records were related to Sizewell Marshes SSSI or RSPB Minsmere Reserve. Three records were located outside the site (at Thorpeness and Aldringham Common and Walks).

NGL

1.2.116 NGL data from the annual reports provide no evidence to suggest that marsh harrier breed in Sizewell Marshes SSSI, although sightings of marsh harrier during standard BTO WeBS surveys and farmland bird surveys have been recorded on the EDF Energy estate. A summary is provided in **Table 1.28**.

Table 1.28: A summary of NGL marsh harrier sightings.

Year	NGL BTO WeBS survey peak count (January-March and September –December yearly)	Farmland bird survey peak count (January-March and October–December yearly)
2018	4	2
2017	4	1
2016	3	Unknown – 0?
2015	4	1
2014	7	1
2013	3	0
2012	1	1
2011	3	1
2010	1	1
2009	Unknown	Unknown
2008-09	Unknown	Unknown
2007-08	1	1
2006-07	Unknown	Unknown
2005-06	0	0
2004-05	0	0

ii. Secondary data

1.2.117 Wood Group 2008 surveys revealed 119 sightings of marsh harrier between April and July (inclusive). The majority of the flights were recorded within Minsmere South Levels and RSPB Minsmere Reserve. Flights to the south of Goose Hill were within the vicinity of the survey area, as shown in Table 3.1 and Figure 3.1 of **Report 14A7.3-10, Annex 14A7.3**.

1.2.118 A total of 26 sightings were located south of Goose Hill. Marsh harriers was observed throughout the survey period (April to July 2008), with most birds being males (24 observations), with only three females observed. Flights consisted of slow hunting flights and direct flights. Several hunting

flights started within, or adjacent to, the RSPB Minsmere Reserve (with birds heading south and foraging over the western areas of Minsmere South Levels), and in the area immediately to the north of Goose Hill. Further foraging activity was recorded along the seawall, with birds quartering and moving south. Hunting birds were recorded to the south of Goose Hill, where foraging was concentrated around the meadows adjacent to the eastern edge of Nursery Covert. A male marsh harrier (flight 25) was also recorded hunting along ditches in Sizewell Marshes SSSI. Direct commuting flights were recorded for birds heading north to the RSPB Minsmere Reserve (flights 7, 10, 18 and 23). Two of these northward-bound flights were observed landing within the RSPB Minsmere Reserve. One commuting flight was observed of a female heading south-west of Goose Hill as far as Kenton Hills.

- 1.2.119 Wood Group surveys in April 2011 to March 2012 consisted of walkover and VP surveys. The walkover surveys revealed marsh harriers hunting low over Sizewell Marshes SSSI on 11 occasions. Nine of these observations occurred between late September and late January. All observations consisted of single birds; male, female and juvenile birds were observed. Details of these flights are shown in Table 3.1 and Figure 3.1 of **Report 14A7.3-4, Annex 14A7.3**.
- 1.2.120 Marsh harriers was observed on all VP surveys. Only the 43 flights observed within Sizewell Marshes SSSI or flying between here and the Minsmere to Walberswick SPA, are shown in Table 3.2a and Figure 3.2a in **Report 14A7.3-4, Annex 14A7.3**. Of the 43 flights, 26 were of birds moving between RSPB Minsmere Reserve and Sizewell Marshes SSSI or the Walk Barn/Ash Wood areas. These flights took place throughout the survey period and consisted of movements of male, female and juvenile birds. During the majority of survey visits, at least three or four marsh harriers were observed hunting over the main RSPB Minsmere Reserve reedbed. These birds would periodically fly south to hunt over Minsmere South Levels. More infrequently, birds would then travel further south, or south-west, toward Sizewell Marshes SSSI or the Ash Wood/Walk Barn area.
- 1.2.121 Eleven flights of adult marsh harriers were recorded over Sizewell Marshes SSSI during the 2011/12 survey period. Most observations were from VPs located to the west of the marshes (six flights from VP5/5a, one flight from VP8 and two flights from VP7). Two flights were observed over Goose Hill, south of VP3, but no marsh harriers were seen entering or leaving the reedbed area south of VP6. During the breeding season (April to July, 2011) adult marsh harriers were seen hunting over Sizewell Marshes SSSI on seven occasions.

1.2.122 Results indicate that marsh harriers commute from Minsmere to hunt over Sizewell Marshes SSSI on a reasonably regular basis throughout much of the year. However, the level of use of Sizewell Marshes SSSI by hunting marsh harrier is low in comparison to that which occurs over RSPB Minsmere Reserve and Minsmere South Levels. From the 2011 to 2012 survey data it was suggested a marsh harrier visits Sizewell Marshes SSSI every 3.6 hours, or approximately three to four visits a day.

iii. Primary data

1.2.123 Marsh harrier surveys were undertaken by Arcadis between April 2014 and September 2014, October 2014 and March 2015 and April 2015 and October 2015 from the standard VPs (refer to **Figure 14A7.6**). In addition, between April and August 2015, surveys for marsh harrier were also undertaken from arable VPs (refer to **Figure 14A7.7**) to establish how frequently marsh harriers use this resource. A summary of the total marsh harrier flights observed at each VP location is provided in **Table 1.29**.

Table 1.29: Summary of marsh harrier flights observed from each VP location (blanks indicate where VPs were not undertaken).

VP location	April – September 2014	November 2014-March 2015	April 2015-October 2015	Arable surveys April – August 2015
VP1	14	18	9	No VP survey undertaken
VP2	11	13	9	
VP3	75	182	90	
VP4	10	22	3	
VP5	12	11	9	
VP6	1	11	5	
VPA	No VP survey undertaken			25
VPB				3
VPC				13
VPD				25
VPE				7
VPF				11

1.2.124 Marsh harrier was observed across the entire survey area. Taking into account survey effort, most flights were observed over Minsmere South Levels from VP3. The arable fields to the north of the EDF Energy estate had fewer flights than other areas, but this is likely to be due to the

differences in habitat, as no reedbed or marshy habitat is present in the arable fields.

- 1.2.125 During the April to October 2014 Summer surveys, more female marsh harrier flights were observed than male marsh harrier, with 29 males, 148 females and 32 juveniles observed during this survey period. The pattern was similar during the Winter (November 2014 to March 2015). However, during the Summer surveys undertaken in 2015, more male marsh harrier was observed than female.
- 1.2.126 A single marsh harrier was also observed during the first of the general breeding bird surveys carried out in 2014, flying over the reedbed within Sizewell Marshes SSSI. During the 2014/15 wintering bird surveys, a single marsh harrier was also observed, during the March survey, over the arable fields.
- 1.2.127 During the 2018-19 marsh harrier surveys, marsh harrier was recorded at Aldhurst Farm during the December 2018 visit only. On this occasion, a male marsh harrier was observed foraging over the wetland habitat between 10:25 and 10:33. Marsh harrier was recorded at the southern reptile receptor areas during the December visit only. Two marsh harrier flights were recorded, both of which were females. The first flight recorded a marsh harrier commuting at a height of approximately 20m from the direction of Aldhurst Farm north east across Leiston Common towards Sizewell Belts. The second flight recorded a marsh harrier commuting higher (at approximately 50m) from the north western corner of Studio reptile receptor area and heading south. As these flights were of marsh harrier heading in different directions it suggests these are separate individuals. However, as these flights were 7min apart it is a possibility that it was the same individual that circled round out of view.
- 1.2.128 Marsh harrier was also incidentally recorded within Minsmere South Levels during the wetland bird survey 2018-19, with a record of two birds in December 2018, two records of single birds in January 2019 and a record of a single bird in February. A single marsh harrier was also recorded within Sizewell Marshes SSSI during December 2018.
- 1.2.129 In summary, marsh harrier is known to breed at a variety of locations within the county, including RSPB Minsmere Reserve, and was recorded breeding at Aldhurst Farm in 2019. However, the species has not been observed breeding within the survey area for the site. Marsh harrier do, however, forage within the within the survey area during both the breeding and non-breeding season; most of this activity occurs within Minsmere South Levels, but they have also been observed foraging within the arable fields at the

northern end of the EDF Energy estate and Sizewell Marshes SSSI, and flying over Kenton and Goose Hill Woods.

j) Hen harrier

1.2.130 Hen harrier is listed on Schedule 1 of the W&CA (Ref. 1.1). Hen harrier is regarded as being of high conservation importance in the UK following its inclusion on the Red List for BoCC (Eaton, *et al.*, 2015). This inclusion is due to a severe decline in the UK population between 1800 and 1995, without a substantial recovery (Ref. 1.2). Hen harrier is also listed as a section 41 species under the NERC Act (2006) (Ref. 1.3).

i. Desk-study

1.2.131 The desk-study revealed that hen harrier form part of the qualifying features of three designated sites within 20km of the site, as detailed in **Table 1.30**.

Table 1.30: Statutory designated sites that include hen harrier within the qualification.

Designated site	Species' relevant qualification detail
Minsmere to Walberswick SPA	Hen harrier is an Annex 1 qualifying feature of this SPA during the Winter season. This area (which is largely the same as the Ramsar site) supports a total of 15 individuals, representing an average of 2% of the UK population (Ref. five-year peak mean 1985/6-1989/90).

Suffolk Birds

1.2.132 The Suffolk Birds reports (Ref. 1.9 - 1.15) state that hen harrier are a scarce Winter visitor and passage migrant. Between 2004 and 2012, a maximum of 22 hen harriers (2011) and a minimum of four (2006) were present within the county. The 2017 Suffolk Bird Report (Ref. 1.14) stated that in the county, one individual was reported in the first Winter period and eight in the second Winter period. Sightings were reported at RSPB Minsmere Reserve, Dunwich, Snape, Orfordness and Boyton Marshes on separate occasions. The 2018 Suffolk Bird Report (Ref. 1.15) stated that it was a poor year for hen harrier, with reports from 11 coastal sites and described as likely to be four wide-ranging individuals. One sighting was reported at RSPB Minsmere Reserve in May 2018.

RSPB

1.2.133 No were no RSPB records of hen harrier reported within 5km of the existing Sizewell power station complex.

SBIS

1.2.134 Desk-study records provided by SBIS revealed 13 records of hen harrier within 2km of the site in the last ten years. These included two records of hen harrier reported at “Sizewell” (although the SBIS data give no indication of exactly where these records relate to). Other hen harrier sightings were located at RSPB Minsmere Reserve, Eastbridge, Theberton, Thorpeness, Aldringham Common and Walks/Thorpeness Golf Course and Leiston.

NGL

1.2.135 NGL reported hen harriers infrequently on the EDF Energy estate and a summary of the records is provided in **Table 1.31**.

Table 1.31: NGL sightings of hen harriers.

Year	Wetland bird surveys (Peak count) Jan-Mar and Sept-Dec	Winter farmland bird surveys (Peak count) Jan-Mar and Sept-Dec	Other incidental sightings
2018	0	Unknown	
2017	2	Unknown	
2016	0	Unknown	
2015	0	1	
2014	1	0	0
2013	1	0	0
2012	0	0	0
2011	0	0	Two records (one ringtail* each in February and in March)
2010	0	0	One ringtail recorded in October
2009	Unknown	Unknown	One ringtail recorded in December
2008-09	Unknown	Unknown	0
2007-08	0	0	One male seen in December 2007
2006-07	Unknown	Unknown	0
2005-06	0	0	Two records of ringtails, one in August 2005 and another in February 2006
2004-05	0	0	0

* This is the term given to females or immature birds, owing to the white rump at the base of the tail

ii. Secondary data

1.2.136 Hen harrier was observed incidentally on two occasions during the 2011 to 2012 Wood Group marsh harrier VP surveys (refer to **Report 14A7.3-4, Annex 14A7.3**). Sightings were of juvenile/female birds hunting over Minsmere South Levels. No other hen harrier were observed during the Wood Group surveys.

iii. Primary data

1.2.137 Hen harrier was also recorded incidentally during both the Arcadis marsh harrier VP surveys in Winter 2014-2015 and the subsequent arable marsh harrier surveys in Summer 2015. Hen harrier was observed sporadically across the northern arable fields, Sizewell Marshes SSSI and Minsmere South Levels. This species is a non-breeding visitor, and only single birds at any one time were observed. A summary of the sightings is presented in **Table 1.32** and is shown on **Figure 14A7.14**.

Table 1.32: Hen harrier observations during marsh harrier VP surveys undertaken by Arcadis between April 2014 and October 2015.

Date	VP location	Time	Number of birds	Activity	Survey Type
15/10/2014	VP 3	12:10	1	Pass through	Bittern, marsh harrier and hen harrier survey 2014
13/11/2014	VP 4	10:39	1	Mobbed by crows and passed through	
13/11/2014	VP 4	16:40	1	Passing through, seen at VP 2 afterwards	
13/11/2014	VP 2	10:15	1	Quartering south of field, driven off by crows	
13/11/2014	VP 2	10:40	1	Quartering southern boundary of field also observed at VP 4	
13/11/2014	VP 2	16:41	1	Circling flight overhead	
26/11/2014	VP 1	10:43	1	Passed through	
27/11/2014	VP 3	09:15	1	Perched then flew off	
27/11/2014	VP 3	13:16	1	Passed through	
17/12/2015	VP 3	10:15	1	Passed through	
17/12/2015	VP 3	10:17	1	Circled over trees then flew south (seen afterwards at VP 6)	
17/12/2015	VP 6	10:18	1	Drifted over reedbed within Sizewell Marshes SSSI and woodland heading west (seen previously, VP 3)	

Date	VP location	Time	Number of birds	Activity	Survey Type
16/04/2015	VPB	09:28	1	Commute over field in front of Ash Wood	Marsh harrier arable surveys 2015
25/08/2015	VPF	11:31	1	Commute over Kenton Hills	

1.2.138 In summary, hen harrier are classed as a scarce Winter visitor in Suffolk and are only recorded during the non-breeding season. The species was observed infrequently within the vicinity of the site and were recorded in fields at the northern end of the EDF Energy estate, Sizewell Marshes SSSI and Minsmere South Levels.

k) Avocet

1.2.139 Avocet is listed on Schedule 1 of the W&CA (Ref. 1.1). Avocet is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to 90-100% of both the UK breeding and non-breeding populations being found in ten or fewer sites (Ref. 1.2).

i. Desk-study

1.2.140 The desk-study revealed that avocet form part of the qualifying features of several of the designated sites within 20km of the site, as detailed in **Table 1.33**.

Table 1.33: Statutory designated sites that include Avocet within the qualification.

Designated site	Species' relevant qualification detail
Minsmere to Walberswick Ramsar site	Avocet is a feature of the Minsmere to Walberswick Ramsar site as part of the assemblage of birds associated with marshland and reedbed. Avocet is also a notable wintering species, the site supporting 329 individuals, representing an average of 9.6% of the UK population (five-year peak mean, 1998/9- 2002/3).
Minsmere to Walberswick SPA	Avocet is an Annex 1 qualifying feature during the breeding and overwinter season. This site supports 91 pairs, representing at least 15.4% of the breeding population in Great Britain (RSBP 1996). The SPA also supports 278 individuals during the Winter, representing at least 21.9% of the wintering population in Great Britain (five-year peak mean 1991/2 - 1995/6).
Alde-Ore Estuary Ramsar	Avocet is a feature of this site under criterion 6, with Winter populations of 1187 individuals, representing an average of 1.6% of the Europe/north-west Africa population (five-year peak mean 1998/9 and 2002/3).
Alde-Ore SPA	Avocet is an Annex 1 qualifying feature during the breeding and Winter season. The site supports 104 pairs representing at least

NOT PROTECTIVELY MARKED

Designated site	Species' relevant qualification detail
	17.6% of the breeding population in the UK (five-year mean, 1990-1994), and 766 individuals representing at least 60.3% of the wintering population in the UK (five-year peak mean 1991/2 - 1995/6) during the Winter.
Alde-Ore Estuary SSSI	This SSSI supports populations of wintering and breeding avocet.
Minsmere to Walberswick Heaths and Marshes SSSI	This SSSI supports a breeding population of avocet.

Suffolk Birds

1.2.141 The Suffolk Birds reports (Ref. 1.9 - 1.15) state that avocet is a fairly common resident, Summer visitor and passage migrant on the Suffolk coast. Breeding success is low and variable within the county. The Alde-Ore complex is an internationally important area for wintering avocet, with a maximum of 1,206 avocet counted during BTO WeBS counts of the Alde Estuary in 2012, and 1,456 avocets counted during 2011 BTO WeBS surveys.

1.2.142 The 2017 Suffolk Bird Report (Ref. 1.14) stated that the breeding population was around 250 pairs. Sightings were reported at various locations including RSPB Minsmere Reserve, Hazlewood Marshes, Dunwich, Orfordness and Walberswick. The 2018 Suffolk Bird Report (Ref. 1.15) stated that the breeding population slightly decreased to 237 pairs. Sightings were reported at the same sites as in 2017.

RSPB

1.2.143 The RSPB reported 17 records of avocet within 5km of the existing Sizewell power station complex between 2003 and 2013, ranging from three to 1,157 individuals. Most records reported avocet as confirmed or probable breeders with a peak count of 130 breeding avocet within RSPB Minsmere Reserve, three at RSPB North Warren Reserve and 206 pairs at Minsmere to Walberswick. Three records were of unknown breeding status, overwintering or passage migrants, with a peak count of 1,157. Most of these records were from RSPB Minsmere Reserve, or Minsmere to Walberswick, with the exception of two records from the Alde-Ore Estuary. The RSPB reported that avocet has not bred on the South Levels since 2010, although avocet regularly use the area for feeding.

SBIS

- 1.2.144 Desk-study records provided by SBIS reported six records of avocet within 2km from the site within the last ten years. These were located at RSPB Minsmere Reserve, Thorpeness, Aldringham Walks/Thorpeness Golf Course and one record at “Sizewell”.

BTO WeBS

- 1.2.145 The individual count sector data from the BTO WeBS data for the Minsmere count zone closest to the site (not including sea) supported an annual five-year mean-of-peaks count of 139 birds recorded in March 2008-2009. High counts of avocet occurred during the passage and breeding period (specifically March, April, May, June and July). There were no records for avocet from the Minsmere offshore count zone.

NGL

- 1.2.146 NGL have not recorded the use of the EDF Energy estate by avocet in the past 14 years.

ii. Secondary data

- 1.2.147 During intertidal and inshore marine surveys undertaken by Wood Group (refer to **Report 14A7.3-1** and **14A7.3-2, Annex 14A7.3**), avocet was recorded on five occasions. The birds were recorded in groups of one to two birds commuting in line with the coast over inshore waters, during April to July 2007. Between August 2007 and March 2008, only five avocet were observed (on 23 March 2008). The avocet were commuting south, 350m offshore.
- 1.2.148 During the Wood Group 2011-2012 seabird survey (refer to **Report 14A7.3-3, Annex 14A7.3**) a total of 92 avocet were observed flying parallel with the coastline (the remainder were observed from VPs 4, 5, 6, 8 and 9, south of the site). Avocet was predominantly observed between April and September 2011, with observations also occurring in March and April 2012 (refer to Annex C in **Report 14A7.3-3, Annex 14A7.3**).

iii. Primary data

- 1.2.149 Avocet was recorded during red-throated diver surveys undertaken by Arcadis in Winter 2012-2013, little tern and sandwich tern surveys in 2013, red-throated diver surveys in Winter 2013-2014, and cormorant surveys in Winter 2014-2015. There were six observations of avocet recorded in total, with five of these being records of avocet commuting over the sea inshore (observed from VPs 1, 3, 14 and 15 (south of the site)). One record was of

avocet roosting, and these birds were recorded from VP 8 (Thorpeness). These records are summarised in **Table 1.34**.

Table 1.34: Sightings of avocet during Arcadis surveys between Winter 2012 and October 2015.

Date	VP	Start	End	No. of birds	Behaviour	Onshore or Inshore waters	Survey type
05/03/2013	VP14	15:45	16:30	2	Commute	Inshore	Red-throated diver surveys 2012-2013
11/06/2013	VP15	06:15	07:00	2	Commute	Inshore	Little tern and sandwich tern surveys 2013
19/03/2014	VP1	09:50	10:35	2	Commute	Inshore	Red-throated diver surveys 2013-2014
19/03/2014	VP3	07:00	07:45	1	Commute	Inshore	
12/11/2014	VP3	07:00	07:45	1	Commute	Inshore	Cormorant surveys 2014-2015
17/03/2015	VP8	14:10	14:55	7	Roosting	Inshore	

1.2.150 In summary, avocet are closely associated with the Minsmere to Walberswick SPA and Ramsar and during site surveys were only observed offshore, and all records of avocet in this area were of commuting birds rather than being records of foraging or roosting behaviour.

i) Ruff

1.2.151 Ruff is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a moderate decline of 41% in the UK breeding population in the last 25 years, a longer-term decline of 62% since the first BoCC review (1996), a breeding range decline of 62% in the last 25 years, its breeding rarity with the UK breeding population consisting of 0-11 pairs and its wintering rarity with the UK non-breeding population consisting of only 820 birds (Ref. 1.2).

i. Desk-study

1.2.152 The desk-study revealed that ruff form part of the qualifying features of one of the designated sites within 20km of the site, as detailed in **Table 1.35**.

Table 1.35: Statutory designated sites that include bearded tit within the qualification.

Designated site	Species' relevant qualification detail
Alde-Ore Estuary SPA	Within the Alde –Ore Estuary SPA, the site is designated for

Designated site	Species' relevant qualification detail
	wintering ruff and supports 0.4% of the UK population 5 year peak mean 1991/92-1995/96.

Suffolk Birds

1.2.153 The Suffolk Birds reports (Ref. 1.9 - 1.15) describe ruff as a fairly common passage migrant with a small number of birds overwintering. The 2017 Suffolk Bird Report (Ref. 1.14) stated that the highest number of records were reported at RSPB Minsmere Reserve (peak count of 22). Other sightings included RSPB North Warren Reserve, Hollesley Marshes and Walberswick. The 2018 Suffolk Bird Report (Ref. 1.15) stated that a peak count of 15 were reported at RSPB Minsmere Reserve.

RSPB

1.2.154 The RSPB reported a single record of ruff within 5km of Sizewell power station complex, with eight birds recorded at RSPB North Warren Reserve in 2003.

SBIS

1.2.155 Desk-study records provided by SBIS reported three records of ruff within 2km of the site. These records were located at RSPB Minsmere Reserve and Thorpeness.

BTO

1.2.156 The individual count sector data from the BTO WeBS data for the Minsmere (not including sea), supported an annual five-year mean peak count of nine birds. High counts of ruff occurred during the passage and breeding period (specifically: March and April). The BTO WeBS count area for Minsmere (including the sea) recorded no ruff.

NGL

1.2.157 NGL have not recorded the presence of ruff on the EDF Energy estate up until 2018.

ii. Secondary data

1.2.158 No ruff was recorded during the surveys undertaken by Wood Group.

iii. Primary data

- 1.2.159 No ruff was recorded within the EDF Energy estate during the surveys carried out by Arcadis; however, ruff was observed feeding on the scrapes on the Minsmere South Levels during the marsh harrier arable surveys (from VP 3).
- 1.2.160 In summary, ruff was rarely observed within the survey area, with only a small number of records from Minsmere South Levels. Therefore, it is concluded that this species does not breed or over Winter within the site.

m) Little tern

- 1.2.161 Little tern is listed on Schedule 1 of the W&CA (Ref. 1.1). Little tern is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to a moderate breeding range decline of 30% since the first BoCC review, and its breeding localisation, with 60-70% of the UK population found in ten or fewer sites (Ref. 1.2). The Suffolk BAP identified little tern as a priority species for conservation action in the county (Ref. 1.39).

i. Desk-study

- 1.2.162 The desk-study revealed that little tern form part of the qualifying features of several of the designated sites within 20km of the site detailed in **Table 1.36**.

Table 1.36: Statutory designated sites that include little tern within the qualification.

Designated site	Species' relevant qualification detail
Minsmere to Walberswick SPA	Little tern is an Annex 1 feature of the Minsmere to Walberswick SPA. The site supports 28 pairs representing at least 1.2% of the breeding population of the UK (five-year mean, 1992-1996).
Alde-Ore Estuary SPA	Little tern is an Annex 1 qualifying feature of the Alde-Ore Estuary SPA. The site supports 48 pairs, representing at least 2% of the breeding population in the UK (five-year mean, 1993-4, and 1996-8).
Outer Thames Estuary SPA	An extension to the SPA is also under consultation. The extension would comprise foraging areas for little tern (which currently form part of breeding colonies in adjacent SPA's)
Alde-Ore Estuary SSSI	Little tern are an important qualifying feature of the Alde-Ore Estuary SSSI.

Suffolk Birds

- 1.2.163 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe little tern as a common Summer visitor and passage migrant. Within the county of Suffolk, little tern have historically had breeding colonies at the following locations (date in parenthesis indicates the last known attempted breeding at the site): Kessingland (2013), Benacre (2013), Covehithe (2005), Easton (2010), Walberswick (2010), Dingle marsh (2009), RSPB Minsmere Reserve (2009), Slaughden beach (2013), Orford Ness (2006), Havergate Island (2006), Shingle street (2012), Kings Fleet on the river Deben–Bawdsey (2005), Deben (2013), Felixstowe (2012), Landguard point (2004), Shotley (2004) and Trimley marshes (2005).
- 1.2.164 The 2017 Suffolk Bird Report (Ref. 1.14) stated that sightings were reported at RSPB Minsmere Reserve (peak count of 29). Two pairs at Walberswick nested but were unsuccessful and no other nesting attempts were reported in the county. The 2018 Suffolk Bird Report (Ref. 1.15) stated that sightings were reported at RSPB Minsmere Reserve (with a lower peak count of three in 2018), but no breeding attempts were made here. Breeding pairs were only reported at Benacre and Kessingland.

RSPB (general desk-study)

- 1.2.165 The RSPB reported seven records of little tern within 5km of the existing Sizewell power station complex between 2003 and 2009, ranging from one pair to 41 pairs. All records were of confirmed or probable breeders from RSPB Minsmere Reserve.

RSPB (species-specific data)

- 1.2.166 RSPB provided specific little tern breeding data. The species has not bred at RSPB Minsmere Reserve since 2009, and this is thought to be due to a reduction in the width of the beach, and the shingle ridge becoming steeper. RSPB enhanced the wader scrape for little tern in 2014, by improving predator fencing (RSPB personal communication, Jacqui Miller).
- 1.2.167 The Suffolk little tern group provided data on little tern breeding attempts within the county (Peason, *et al.*, 2013). RSPB Minsmere Reserve beach and Slaughden are the little tern colony locations nearest the site. Little tern bred at RSPB Minsmere Reserve between 2004 and 2009, but there was only one nest during the last attempt in 2009, and this failed to fledge any young. Nests have had limited success at this site, with the only years during which young successfully fledged being 2004 (15 fledged young) and 2008 (33 fledged young). At Slaughden, colonies established in 2005 and 2013, but neither of these fledged young.

- 1.2.168 The RSPB provided information regarding the Benacre little tern colony stating the colony is usually at the eastern end of Benacre Broad, located on an area of sand and shingle between the broad and sea.

SBIS

- 1.2.169 Desk-study records provided by SBIS reported eight records of little tern within 2km of the site. These records were located at RSPB Minsmere Reserve, Thorpeness, the rigs associated with Sizewell A and B power stations, “Sizewell” and Aldringham Common and Walks/Thorpeness Golf Course.

BTO WeBS

- 1.2.170 The individual sector data from the BTO WeBS count for the Minsmere (not including sea) count zone, supported an annual five-year mean-of-peaks of 27 little tern. High counts of little tern occurred during the breeding period (specifically, May, June and July). The BTO WeBS count area for Minsmere offshore (i.e. “including the sea”) count zone did not hold five-year average records of little tern.

NGL

- 1.2.171 NGL have not recorded the presence of little tern on the EDF Energy estate up until 2018.

ii. Secondary data

- 1.2.172 During Wood Group’s 2007 intertidal survey (refer to **Report 14A7.3-2, Annex 14A7.3**), little tern was recorded on 13 occasions. Records were mainly from the most northerly grid square; this was located nearer the breeding colony that established at RSPB Minsmere Reserve in 2007 but was 2km to the north of the survey location. Only two foraging records were recorded for little tern, and these were located to the south, in the areas associated with the Sizewell B power station outfall.

- 1.2.173 The Wood Group second interim report (refer to **Report 14A7.3-1, Annex 14A7.3**) reported a single record of little tern, in which 11 little tern were observed migrating south, approximately 150m offshore, as well as a single bird foraging around the Sizewell B power station outfall during three of the six VP surveys between August 2007 and March 2008.

- 1.2.174 Specific surveys were undertaken for little tern in 2010 (refer to **Report 14A7.3-7, Annex 14A7.3**); these included foraging surveys and colony surveys at RSPB Minsmere Reserve beach and Dingle Marshes, north of the site. No breeding was observed at RSPB Minsmere Reserve beach in

2010, whilst breeding was attempted but was unsuccessful at Dingle Marshes. Foraging activity was concentrated in shallow water close offshore within the direct vicinity of the colony. Foraging flights of little tern were recorded frequently in 2010, with a total of 21 flights from VP 1 and VP 2, and a peak count of 28 birds observed on 20 July 2010.

- 1.2.175 During the colony survey work carried out by Wood Group in 2011 (refer to **Report 14A7.3-3, Annex 14A7.3**), Dingle Marshes was the favoured breeding site for little tern, with 26 pairs present. Attempts to establish a colony at both RSPB Minsmere Reserve and Slaughden (Orford Ness) were unsuccessful, and no nesting was observed. This had also been the situation in 2010.
- 1.2.176 The VP surveys in 2011 (refer to **Report 14A7.3-3, Annex 14A7.3**) recorded little tern foraging along the coast between Dunwich and Orford Ness during the period 10 May 2011 to 24 June 2011. This included a peak count of 51 commuting little tern observed from VP1 in May 2011, and a peak of 18 individuals observed foraging from VP10 (south of the site). Within the vicinity of the site much of the foraging activity was close offshore (within 300m), but little tern was only recorded in this area in May 2011. Little tern was primarily seen moving up and down the shoreline, diving for prey items in the shallows. The surveys also indicated that the inshore waters between the site and Orford Ness (to the south) did not provide significant feeding grounds for little tern from the nearby breeding colonies.
- 1.2.177 Results from the 2011 colony surveys undertaken at Dingle Marshes, Minsmere and Slaughden (refer to **Report 14A7.3-3, Annex 14A7.3**), indicated that much of the little tern foraging activity was concentrated within 1km of each colony. Elsewhere, foraging activity was sporadic and involved only small numbers of birds (generally fewer than five). Neither the colony nor VP survey results indicated that little tern was regularly flying further out to sea to feed.

iii. Primary data

- 1.2.178 Little tern was recorded during the Arcadis little tern and sandwich tern survey 2013 (refer to **Report 14A7.4-3, Annex 14A7.4**). The species was recorded (either commuting or foraging) at total of eight times at VPs 7, 8, 10, 11 and 12 (south of the site) and at VP 13 (north of the site). The peak count of little tern was eight birds observed foraging on 12 June 2013 from VP 10 (south of the site). A colony attempted to establish at Slaughden Beach early June 2013, south of Aldeburgh and south of the site. However, this was deserted by the time of the nest survey in late June 2013.

1.2.179 In summary, whilst little tern are known to commute and forage offshore of the site, the amount of activity varies significantly depending on the location of the nearest breeding colony each year, as the species tends to forage in close proximity of its breeding sites. Given that the most recent colony within close proximity of the survey area was at RSPB Minsmere Reserve in 2009, the number of birds within the Zone of Influence of the proposed scheme is small.

n) Sandwich tern

1.2.180 Sandwich tern is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to its moderate decline in the UK breeding population of 25% and its breeding localisation with 90-100% of the UK breeding population located in ten sites (Ref. 1.2).

i. Desk-study

1.2.181 Sandwich tern form part of the qualifying features of three of the designated sites within 20km of the site, as detailed in **Table 1.37**.

Table 1.37: Statutory designated sites that include sandwich tern within the qualification.

Designated site	Species relevant qualification detail
Alde-Ore Estuary SPA	Within the Alde-Ore Estuary SPA, sandwich tern are designated under Annex I of the Directive. The site supports 169 pairs representing at least 1.2% of the breeding population in the UK (five-year mean 1991-1995).
Alde-Ore Estuary SSSI	Sandwich tern is listed as a qualifying feature of the Alde-Ore Estuary SSSI.

Suffolk Birds

1.2.182 The Suffolk Birds Reports (Ref. 1.9 - 1.15) describe sandwich tern as a common passage migrant and a declining Summer visitor. The 2017 Suffolk Bird Report (Ref. 1.14) stated that a significant flock gathered at RSPB Minsmere Reserve (peak count of 300). It was confirmed that 13 breeding pairs fledged four young at Minsmere. Prior to this, breeding had not been confirmed in the county since 2009. The 2018 Suffolk Bird Report (Ref. 1.15) stated that another large flock was reported at RSPB Minsmere Reserve (peak count of 375). Breeding pairs were recorded at Minsmere, with only two young fledging from 32 nesting pairs.

RSPB

- 1.2.183 The RSPB reported two records of sandwich tern within 5km of the existing Sizewell power station complex. The two records occurred in 2008 (one apparently occupied nest) and 2009 (unknown number of occupied nests) at RSPB Minsmere Reserve and were of probable breeding, although no chicks are thought to have been reared in either year.

SBIS

- 1.2.184 Desk-study records provided by SBIS reported nine records of sandwich tern within 2km of the site. These records were located at RSPB Minsmere Reserve, Thorpeness, Aldringham Walks and Common and “Sizewell”

BTO

- 1.2.185 The individual count sector data from the BTO WeBS data for the Minsmere (not including sea) count zone closest to the site and incorporating the south of Minsmere South Levels, supported an annual five-year mean of peaks count of 267 sandwich tern. High counts of sandwich tern occurred during the breeding period (specifically July and August). The BTO WeBS count zone for Minsmere (including the sea) supported an annual five-year mean of peaks count of one for sandwich tern.

RSPB species specific data

- 1.2.186 In addition, the RSPB provided information about sandwich tern within the Alde-Ore Estuary. Within the Alde-Ore Estuary, sandwich terns have not bred since the early 2000s, however, birds are known to ‘loaf’ in the area at the end of the breeding season (Ref. 1.40).

NGL

- 1.2.187 NGL have not recorded the presence of sandwich tern on the EDF Energy estate up until 2019.

ii. Secondary data

- 1.2.188 During the April-July 2007 surveys carried out by Wood Group (refer to **Report 14A7.3-2, Annex 14A7.3**) 28 sandwich tern were observed using or commuting over waters within 300m the coast. There were two records of single foraging birds offshore from the Sizewell A and B power station complex, with the remaining birds commuting directly through the area offshore.

1.2.189 Sandwich tern was recorded in August and September during the April 2007 to March 2008 bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), with a peak count of six birds recorded. No foraging was recorded to the north, and an adult and a juvenile were the only sandwich terns observed foraging around the Sizewell B power station outfall.

1.2.190 Sandwich terns was recorded offshore during the 2011-2012 seabird surveys (refer to **Report 14A7.3-3, Annex 14A7.3**) undertaken from March 2011-April 2012 inclusive, with returning birds first noted on 13 April 2012. Small numbers of sandwich terns were seen foraging offshore (peak count of two birds) or commuting (peak count of 17 birds) along the coastline. Sandwich tern was observed both close inshore and more than 1-2km from the shoreline. Peak numbers were recorded in July and August 2011 when up to ten sandwich terns were counted at any one time, although usually only one to two birds were recorded together. The most favoured feeding areas were over the shallow waters offshore of Thorpeness and between Slaughden beach and Orford Ness where up to 11 birds were occasionally noted. These birds were also seen resting on nearby lagoons adjacent to the Orford Ness lighthouse and Slaughden beach where peak counts of ten to 12 birds were recorded.

iii. Primary data

1.2.191 Sandwich tern was recorded during the little tern survey 2013 (refer to **Report 14A7.4-3, Annex 14A7.4**) between April and August 2013. A total of 52 observations were made, with small groups, with a maximum eight individuals observed at one time. Sandwich terns was predominantly observed commuting, and only 11 observations were of foraging birds. Observations were concentrated around the coast adjacent to RSPB Minsmere Reserve and offshore south of Aldeburgh.

1.2.192 In summary, sandwich tern are observed offshore and have been observed foraging offshore of the Sizewell B power station. Breeding within close proximity to the survey area is rare, and the last record was in 2009.

o) Common tern

1.2.193 Common tern is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This is due to the breeding localisation of common tern with 60 - 70% of the UK population being located in ten or fewer sites. An extension of the Outer Thames Estuary SPA is also under consultation. The extension would comprise foraging areas for common tern (which currently form part of breeding colonies in adjacent SPA's).

i. Desk-study

Suffolk birds

- 1.2.194 The Suffolk Birds reports (Ref. 1.9 - 1.15) described common tern as a common Summer visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that sightings were recorded at RSPB Minsmere Reserve, with reports of breeding at Minsmere (76 pairs fledged 58 young), Orfordness and RSPB Havergate Island. The 2018 Suffolk Bird Report (Ref. 1.15) stated that 40 young fledged from 120 pairs at Minsmere, one pair also nested at Orfordness.

RSPB

- 1.2.195 The RSPB reported 12 records of common tern within 5km of the existing Sizewell power station complex. All of these records related to either confirmed, or probable, breeding. These records were located at both RSPB Minsmere Reserve and the Alde-Ore Estuary. Peak counts at Minsmere RSPB and Alde-Ore Estuary were 191 pairs in 2009 and 51 pairs in 2006, respectively.

SBIS

- 1.2.196 Desk-study recorded provided by SBIS reported ten records of common tern within 2km of the site, eight of which were from within the last ten years. Records were offshore from RSPB Minsmere Reserve, Thorpeness, Aldringham Walks and Common, rigs associated with Sizewell A and B stations, and “Sizewell”.

BTO

- 1.2.197 For the Minsmere (not including sea) BTO WeBS count zone, the annual five-year mean of peaks was 157 birds. The annual five-year mean peak within the Minsmere offshore count zone was one bird.

NGL

- 1.2.198 The NGL did not record common tern within the EDF Energy estate.

ii. Secondary data

- 1.2.199 Common tern was recorded frequently along the coast and was recorded foraging on the Sizewell B power station outfall during the 2007 Wood Group surveys (refer to **Report 14A7.2, Annex 14A7.3**). The peak count was 57 birds on the 6 August (refer to **Report 14A7.1, Annex 14A7.3**).

1.2.200 Common tern was also recorded frequently during the seabird survey in 2011-2012 (refer to **Report 14A7.2, Annex 14A7.3**). The peak count of foraging common tern was 110 birds. The birds were observed around the Sizewell B power station outfall. The peak count of common tern commuting offshore was 183 from VP1.

iii. Primary data

1.2.201 Common tern was recorded on 29 occasions during the little tern coastal surveys (refer to **Report 14A7.4-3, Annex 14A7.4**). A peak count of 80 birds was recorded from VP13 (Orford Ness). Within the vicinity of the site (VPs 1, 2 and 3) a peak count of 40 common tern were observed at VP1 during the little tern survey in 2013.

1.2.202 In summary, common tern was observed within the survey area during the breeding season, along the coast, with the majority of the observations of birds foraging offshore of the Sizewell B power station.

p) Woodlark

1.2.203 Woodlark is listed on Schedule 1 of the W&CA (Ref. 1.1). Woodlark is listed on the Green List of BoCC (Ref. 1.2), it is listed as a section 41 species under the NERC Act (2006) (Ref. 1.3) and is also a Suffolk BAP priority species (Ref. 1.38).

1.2.204 The woodlark population in Suffolk is located in two broad areas: on the Suffolk coast (Sandlings SPA); and in the Breckland (north-west Suffolk, extending into Norfolk). Despite a substantial increase in numbers recorded nationally between the two national surveys (1997 and 2006), numbers in Suffolk have declined (Ref. 1.41), and a total of only 370 territories were located in the county during the 2006 survey (Ref. 1.41), compared with the 403-457 estimated in 1997.

1.2.205 Since the national census, declines in woodlark numbers in coastal areas of Suffolk have been recorded (Adam Rowland (RSPB), personal communication). This has been linked to the maturation of existing plantations combined with unsuitable forest management practices and a lack of new planting. At present, the scale of the county decline is unclear.

i. Desk-study

1.2.206 The desk-study revealed that woodlark form part of the qualifying features of four of the designated sites within 20km of the site, as detailed in **Table 1.38**.

Table 1.38: Statutory designated sites that include woodlark within the qualification.

Designated site	Species' relevant qualification detail
Minsmere to Walberswick SPA	Woodlark is a feature of the Minsmere to Walberswick SPA, which supports 20 pairs during the breeding season, representing at least 1.3% of the breeding population in the UK (RSPB, five-year mean 95-99).
Sandlings SPA	Woodlark is also a feature of the Sandlings SPA. The site supports 54 pairs, representing at least 10.3% of the breeding population in the UK (count as at 1997).
Pakefield to Easton Barents SSSI	These SSSIs support habitat suitable for breeding woodlark, and are mentioned on their citations.
Sandlings SSSI	
Aldeburgh to Leiston SSSI	
Snape Warren SSSI	

Suffolk birds

1.2.207 The Suffolk Birds reports (Ref. 1.9 - 1.15) describe woodlark as a fairly common breeding species, but scarce on passage and in Winter. The UK woodlark population was estimated at being 1,633 occupied territories in 1997 (Ref. 1.41). At that time, it was estimated that almost 30% of woodlark territories (403-457) were in Suffolk, with 209-245 territories being located in the Sandlings SPA. A repeat of the national survey in 2006 produced a much-increased total of 3,064 territories (Ref. 1.42).

1.2.208 The 2017 Suffolk Bird Report (Ref. 1.14) stated that woodlark territories were recorded at RSPB Minsmere Reserve (24) and the Dunwich area (16). Sightings were also recorded at Sutton and Hollesley Commons. The 2018 Suffolk Bird Report (Ref. 1.15) stated that woodlark pairs were recorded in Dunwich Forest (15 pairs) and Minsmere (17 pairs).

RSPB

1.2.209 The RSPB provided specific data for woodlark within the Minsmere to Walberswick SPA and the Sandlings SPA. Between nine and 22 woodlarks were recorded within RSPB Minsmere Reserve between 2003 and 2013. At Dunwich (to the north of the site), woodlark was recorded in four of the ten years for which data was supplied, with a peak count of eight woodlark recorded in 2012 in Dunwich Forest. Within the Sandlings SPA (RSPB North Warren Reserve), woodlark has been recorded every year between 2003 and 2013; however, numbers have steadily declined during this time, with a maximum of 53 recorded in 2003 and only eight recorded in 2013.

1.2.210 RSPB provided data for 2014 and 2015. A total of 34 woodlark records were recorded in Minsmere RSPB Reserve, with a peak count of 21 pairs in 2015. Other records of woodlark were from Dingle Marshes, where four records were reported, a peak count of nine pairs was recorded in 2014, North Warren, where a total of four records were reported, with a peak count of seven pairs was recorded, and Snape, where six records were reported with a peak count of ten pairs. A total of 13 records of woodlark were provided for RSPB Minsmere Reserve, with a peak count of 20 pairs in 2014.

1.2.211 RSPB also provided data for 2015–2018. A total of 89 woodlark records were recorded in Minsmere RSPB Reserve throughout 2015-2018, with a peak count of 27 in 2016. Other records of woodland were from Dunwich Area, where 64 records were reported between 2015 and 2018 with a peak count of 18 in 2016; Hollesley Common, where 64 records were reported between 2015 and 2018 with a peak count of 17 in 2017 and 2018.

SBIS

1.2.212 Desk-study records provided by SBIS reported 61 records of woodlark within 2km of the site between 1994 and 2010. These records ranged from “Sizewell” (likely to be the site), RSPB Minsmere Reserve, Eastbridge, Aldringham Common/Walks, Thorpeness, Leiston and Sizewell common. Ten records were from the last ten years, and these records covered a similar geographic area.

NGL

1.2.213 NGL recorded woodlark as present within the EDF Energy estate in seven of the last 14 years of bird surveys. A summary of these records is shown in **Table 1.39**.

Table 1.39: Summary of woodlark observations on the EDF Energy estate during monitoring undertaken by NGL.

Year	No. breeding territories (April-June)	Winter farmland bird surveys (peak count) (January-March and October – December)
2018	0	2
2017	0	0
2016	1	0
2015	0	0
2014	1	7

Year	No. breeding territories (April-June)	Winter farmland bird surveys (peak count) (January-March and October – December)
2013	0	3
2012	0	0
2011	0	0
2010	0	21
2009	0	11
2008	1	54
2007	2	9
2006	3	1
2005	3	4

ii. Secondary data

- 1.2.214 The Wood Group first interim bird report (refer to **Report 14A7.3-2, Annex 14A7.3**) reported woodlark territories in the 2007 territory mapping survey as well as incidentally (i.e. outside formal survey work). Woodlark was only regularly recorded in two locations - in arable fields adjacent to the northern edge of Kenton Hills, and adjacent to the south side of the recently planted Great Mount Wood. Singing was recorded in both areas, and these have been indicated as territory locations on Figure 3-2, **Report 14A7.3-2, Annex 14A7.3**.
- 1.2.215 Wood Group breeding bird surveys undertaken in 2010 (refer to **Report 14A7.3-5, Annex 14A7.3**) revealed a single woodlark flying north-west over the area immediately to the north of Sizewell B power station on 19 March; in addition, a male was heard singing on 23 April in fields south of Ash Wood Cottages, but was not heard subsequently.
- 1.2.216 Woodlark was recorded during the Wood Group surveys of the arable reversion areas in 2012 (refer to **Report 14A7.3-8, Annex 14A7.3**). A single woodlark was heard singing 100-200m south-west of Walk Barn on 19 April 2012. This bird was not recorded on subsequent visits or by SWT wardens.
- 1.2.217 The second interim Wood Group bird report covering August 2007 to March 2008 reported woodlark during walkover Winter surveys (refer to **Report 14A7.3-1, Annex 14A7.3**). During the September 2007 survey, two woodlark were recorded in a field on the south-east side of Fiscal Policy woodland; in November a flock of 12 to 13 birds was noted on two occasions in a field to the east of Old Abbey Farm, and eight birds were

recorded in flight over fields to the south and south-east of Fiscal Policy woodland. In January 2008, four woodlark were present to the south of Fiscal Policy woodland (but a flock of 18 birds reported at this time as being in the area by SWT could not be located). In March 2008, a single woodlark was recorded in the field to the south-east of Eastbridge Farm, with an additional two birds in the field west of Lower Abbey Farm. Woodlark are likely to have been on territory by the time this final survey was conducted.

iii. Primary data

1.2.218 No woodlark was recorded during surveys undertaken by Arcadis.

1.2.219 In summary, whilst woodlark are occasionally observed within the survey area, larger and more robust populations are present at Dunwich Forest, Minsmere to Walberswick and the Sandlings SPA, to the north and the south of the survey area, respectively.

q) Lesser black-backed gull

1.2.220 Lesser black-backed gull is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2) (Ref. BTO, 2015). This inclusion is due to its breeding localisation with 70-80% of the UK breeding population found in ten or fewer sites, and the fact that the UK possesses 20-30% of the European breeding population (1.2).

i. Desk-study

1.2.221 Lesser black-backed gull form part of the qualifying features of three of the designated sites within 20km of the site, as detailed in **Table 1.40**.

Table 1.40: Statutory designated sites that include lesser black-backed gull within the qualification.

Designated site	Species relevant qualification detail
Alde-Ore Estuary Ramsar site	Within the Alde-Ore Estuary Ramsar site lesser black-backed gull are designated under criterion 6, with 5,790 apparently occupied nests, representing an average of 3.9% of the UK breeding population (Seabird 2000 census, JNCC) (Ref. 1.43).

Suffolk Birds

1.2.222 The Suffolk Birds reports (Ref. 1.9 - 1.15) identifies lesser black-backed gull as a very common Summer visitor and passage migrant, with increasing numbers overwinter. The 2017 Suffolk Bird Report (Ref. 1.14) stated that the bulk of the breeding birds were recorded at Lantern Marshes

(Orfordness). The report did not state all locations of sightings reported. The 2018 Suffolk Bird Report (Ref. 1.15) stated that 97 pairs were recorded at Orfordness, along with records at Hollesley Marshes and on the River Alde.

RSPB

- 1.2.223 The RSPB reported 14 records of lesser black-backed gull within 5km from the existing Sizewell power station complex.

SBIS

- 1.2.224 Desk-study records provided by SBIS revealed no records of lesser black-backed gull within 2km of the site.

BTO

- 1.2.225 Within the Minsmere (not including sea) BTO WeBS count zone the annual five-year mean of peaks of lesser black-backed gull was 45. Lesser black-backed gull was observed in the Minsmere offshore count zone, with an annual five-year mean of peaks of two.

NGL

- 1.2.226 NGL (2005-2018) have only recorded the presence of lesser black-backed gull on the EDF Energy estate in one of the last ten years of bird surveys. This record was of a single bird recorded during the farmland bird surveys in 2007-2008.

ii. Secondary data

- 1.2.227 During the April-July 2007 surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), lesser black-backed gull was recorded throughout the intertidal and marine surveys along the coast. Lesser black-backed gulls occurred in greatest numbers around the Sizewell A and B power station outfalls, although frequently birds were recorded loafing rather than actively feeding. There were 40 lesser black-backed gulls feeding around the Sizewell A and B power station outfalls on 23 July 2007, with 11 further counts of ten to 30 birds from this area recorded during the survey period. Very low numbers of lesser black-backed gulls were recorded using the waters surveyed from VP1, with a peak count of five birds loafing on 15 April 2007.

- 1.2.228 Throughout the intertidal and marine surveys undertaken in September 2007 to March 2008 (refer to **Report 14A7.3-1, Annex 14A7.3**), lesser black-backed gull was recorded regularly and showed a strong association with the Sizewell A and B power station outfalls, though lesser black-

backed gull was recorded infrequently between November 2011 and January 2012. A peak count of 15 birds was recorded.

- 1.2.229 During the Wood Group seabird survey (refer to **Report 14A7.3-3, Annex 14A7.3**) in 2011-2012, lesser black-back gulls was recorded resting or foraging at every VP. Small numbers of lesser black-backed gulls (generally one to five birds) were recorded loafing around the Sizewell A and B power station outfalls and on the nearby rigs associated with the Sizewell A and B power stations. Elsewhere within the survey area, groups of up to 50 lesser black-backed gulls were seen resting on the beach adjacent to the Lantern Marshes, Orford Ness gull colony (adjacent to VP10 and VP11) or at nearby Orford Ness lighthouse (adjacent to VP12), located south of the site. Numbers of lesser black-backed gulls declined in the survey area in the Autumn and remained at a low level from November 2011 to March 2012. Large numbers of lesser black-backed gulls were observed commuting north or south, but only those that were utilising the area in some way were reported. Results from the VP surveys provide no evidence to indicate that the Sizewell A and B power station outfalls or other areas of inshore waters within the survey area provide important resting or foraging areas for lesser black-backed gulls. It is likely that many birds breeding at local colonies feed widely along the coast and in pig rearing fields, such as those at Blythburgh.

iii. Primary data

- 1.2.230 Lesser black-backed gull was recorded during red-throated diver surveys in the Winter of October 2012-March 2013, little tern surveys 2013, red-throated diver surveys in the Winter of October 2013-March 2014 and cormorant surveys in the Winter of October 2014-March 2015. Lesser black-backed gull was recorded at every VP and was recorded commuting, foraging and resting in offshore waters and resting on inshore waters. All sightings of lesser black-backed gull from these surveys are summarised in **Table 1.5-59, section 8**.
- 1.2.231 Lesser black-backed gull was recorded as part of the breeding bird surveys on the site. Four birds were recorded flying over along the coast in May 2014. Lesser black-backed gull was recorded during the wintering bird surveys undertaken in 2014, a solitary bird was recorded flying along the coast in November 2014.
- 1.2.232 Lesser black-backed gull was also recorded as part of the Winter waterfowl point counts and transects, with three birds recorded in the December 2014 survey, a further three recorded in the January 2015 survey, four birds recorded in February 2015, and 240 birds recorded in March 2015. All of these birds were recorded roosting on the Minsmere South Levels.

- 1.2.233 Lesser black-backed gull was recorded twice at Minsmere South Levels during the wetland bird surveys 2018-19, with a single record in January and six birds recorded in February.
- 1.2.234 During the arable marsh harrier surveys undertaken in 2015 within the arable fields at the northern end of the EDF Energy estate, lesser black-backed gulls was observed from VPA (peak count one bird), VPB (peak count three birds), VPC (peak count two birds), VPD (peak count one bird) and VPF (peak count two birds).
- 1.2.235 In summary, lesser black-backed gulls was observed flying over the arable fields at the northern end of the EDF Energy estate, roosting within Minsmere South Levels and commuting, foraging and loafing along the coast near the Sizewell B power station outfall. Lesser black-backed gulls was not recorded breeding within the survey area.

r) **Nightjar**

- 1.2.236 Nightjar regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to a moderate breeding range decline of 45% since the first BoCC review (Ref. 1.2). Nightjar is listed as a priority species in section 41 of the NERC Act (2006) (Ref. 1.3) and the Suffolk BAP identified nightjar as a priority species for conservation action in the county (Ref. 1.38).

i. **Desk-study**

- 1.2.237 Nightjar form part of the qualifying features of several of the designated sites within 20km of the site, as detailed in **Table 1.41**.

Table 1.41: Statutory designated sites that include nightjar within the qualification.

Designated site	Species relevant qualification detail
Minsmere to Walberswick SPA	Nightjar are designated as Annex 1 species, supporting 24 pairs representing at least 0.7% of the breeding UK population (Count, as at 1990).
Sandlings SPA	During the breeding season this area regularly supports 3.2% of the UK breeding population (Count, as at 1992).
Minsmere to Walberswick Heaths and Marshes SSSI, Leiston to Aldeburgh SSSI, Sanderlings SSSI, Snape Warren SSSI and Tunstall Forest SSSI	All of these SSSI's provide breeding habitat for nightjar.

Suffolk Birds

1.2.238 The Suffolk Birds reports (Ref. 1.9 - 1.15) described nightjar as a locally fairly common visitor and a scarce migrant. The 2004 – 2013 reports showed nightjar to be present in the vicinity of the survey area. A summary of this information is presented in **Table 1.42**.

Table 1.42: Number of nightjar pairs (N/A=no data available) recorded at three Reserves in close proximity to the site taken from ‘Suffolk Birds ‘reports.

Location	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
RSPB Minsmere Reserve	14	16	13	22	22	22	13	15	13	11	13	10	9
Aldringham Walks & Common/RSPB North Warren Reserve	14	10	12	12	13	10	8	8	7	2	2	3	n/a
Walberswick and Westleton NNR	n/a	n/a	20	21	19	9	n/a	11	n/a	n/a	n/a	n/a	n/a

1.2.239 The 2017 Suffolk Bird Report (Ref. 1.14) stated that sightings were reported at Aldringham (within 5km of Sizewell) and territories were recorded at RSPB Minsmere Reserve (11 territories) and Dunwich (seven territories). The 2018 Suffolk Bird Report (Ref. 1.15) stated that a total of 65 territories were recorded in The Sandlings and Minsmere held 10 territories.

RSPB

1.2.240 The RSPB reported 23 records of nightjar within 5km of the existing Sizewell power station complex between 2003 and 2013. Eleven records were from RSPB Minsmere Reserve ranging between eight and 22 churring males, one record of 44 churring males was from Minsmere to Walberswick SPA. Ten records of between one and 12 singing males were recorded at RSPB North Warren Reserve and one record of 97 churring males was from the Sandlings SPA.

1.2.241 In 2014-2015, RSPB recorded the following records: four nightjar records within RSPB Minsmere Reserve, where a peak count of eight displaying males were recorded in 2014 and 2015, four nightjar records from Dingle Marshes/Dunwich Forest, with a peak count of four displaying males in 2014/2015, two records of RSPB North Warren Reserve, one nightjar was recorded in each year and six records in Snape, with a peak count of six displaying males recorded in 2014.

1.2.242 Nightjar (churring males) was observed at North Warren/ Aldringham Walk in 2016, 2017 and 2018, with a peak count of five in 2018.

RSPB (species-specific data)

1.2.243 The RSPB also provided data specifically for woodlark and nightjar. This revealed four records of nightjar in Dunwich Heath to the north of the site in 2003 (12 displaying males), 2007 (one displaying male), 2010 (two displaying males) and 2011 (seven displaying males). Nightjar was also recorded in Dingle marshes in 2009 (11 displaying males), 2011 (three displaying males), 2012 (two displaying males) and 2013 (three displaying males).

SBIS

1.2.244 The SBIS held seven records of nightjar within 2km of the site. These records were from 1999, 2003, 2004, 2005 and 2010 and locations for these results ranged from RSPB Minsmere Reserve, Aldringham Walks and Common to Thorpeness. Within the last ten years there were only two nightjar records (2005, 2010), both were from Aldringham Walks and Common.

NGL

1.2.245 NGL (2005-2018) reports show no nightjar was present on the EDF Energy estate monitored by NGL from 2007-2012, however, there was no specific reference to nightjar surveys being undertaken.

ii. Secondary data

1.2.246 Wood Group reported no nightjars during either survey undertaken in May or June 2010.

iii. Primary data

1.2.247 Targeted nightjar surveys were carried out in 2014 and 2015 to identify the presence of nightjars within Goose Hill and Kenton Hills. No nightjar was recorded during these surveys. No other nightjar activity was recorded as part of the 2014 breeding bird surveys.

1.2.248 In summary, nightjar have not been recorded within the survey area, however nightjar is present in Reserves to the north (e.g. Dunwich Heath) and south (e.g. RSPB North Warren Reserve) of the survey area.

s) Seabird assemblage species associated with the Alde-Ore Estuary SPA

t) Introduction

1.2.249 This section comprises bird species which are listed under the assemblage qualification for the Alde-Ore Estuary SPA. Qualifying species in their own right are set out in **section 1.2** above.

u) Black-headed gull

1.2.250 Black-headed gull is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to a decline of the UK non-breeding population of 33-41% in the last 25 years and the fact that the UK possesses 60-70% of the European non-breeding population (Ref. 1.2).

i. Desk-study

1.2.251 The desk-study revealed that black-headed gull form part of the qualifying features of two of the designated sites within 20km of the site, as detailed in **Table 1.43**.

Table 1.43: Statutory designated sites that include black-headed gull within the qualification.

Designated site	Species relevant qualification detail
Alde-Ore Estuary SPA	The Alde-Ore Estuary SPA qualifies under Article 4.2 of the Directive by regularly supporting a seabird assemblage of international importance. During the breeding season, the area regularly supports 59,118 individual seabirds (Count period ongoing) including black-headed gull.

Suffolk Birds

1.2.252 The Suffolk Birds reports (Ref. 1.9 - 1.15) describes black-headed gull as a very common resident, Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that an estimated 2000 pairs bred at RSPB Minsmere Reserve. It is stated that these birds were likely to have relocated to Minsmere from Orfordness, where Lantern Marshes had been drained. At Orfordness, only five nests were reported in 2017 compared with 240 pairs in 2016 and 718 in 2015. The 2018 Suffolk Bird Report (Ref. 1.15) stated that gatherings of note included Minsmere (3077) and Hazlewood Marshes (1000).

RSPB

- 1.2.253 The RSPB reported 11 records of black-headed gull within 5km of the existing Sizewell power station complex. These records were all from RSPB Minsmere Reserve and relate to either confirmed or probable breeding with between 126 and 1,943 apparently occupied nests identified.

SBIS

- 1.2.254 Desk-study recorded provided by SBIS reported no records of black-headed gull within 2km of the site.

NGL

- 1.2.255 NGL have recorded the presence of black-headed gull on the EDF Energy estate in seven of the past 14 years of bird surveys. These records comprised eight birds recorded in 2005-2006 during farmland Winter bird counts; a peak count of 42 birds in 2007-2008 during farmland Winter bird counts; 14 birds during a farmland Winter bird count; a peak count of 41 black-headed gulls during a WeBS count in 2010; 27 black-headed gulls during a farmland Winter bird count in 2011; a peak count of 55 black-headed gull during the WeBS count in 2014; a peak count of 16 during the WeBS count in 2015; and a peak count of three black-headed gull during the WeBS count in 2017.

ii. Secondary data

- 1.2.256 During the April-July 2007 bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), black-headed gull was recorded throughout the survey period, and was found particularly associated with the Sizewell A and B power station outfalls, with a peak count of 71 birds foraging around the Sizewell A and B power station outfalls in May 2007, and 14 other counts of 10 to 43 feeding birds recorded in this area during the survey period. Some birds were also observed commuting to and from RSPB Minsmere Reserve along the coast.

- 1.2.257 During the 2007-2008 intertidal and inshore marine surveys (refer to **Report 14A7.1** and **Report 14A7.2, Annex 14A7.3**), 21 observations of black-headed gulls, involving 100 to 400 birds, were recorded between August 2007 and early January 2008. The highest counts of loafing and foraging birds were recorded in association with the Sizewell A and B power station outfalls, with 148 to 300 black-headed gulls recorded foraging and loafing around the Sizewell A and B power station outfalls on five occasions. Large flocks of loafing and foraging black-headed gulls were recorded occasionally away from the Sizewell A and B power station

outfalls, with a peak count of 40 and 100 birds present in December 2007 and January 2008 respectively.

1.2.258 During the Wood Group 2011-2012 seabird survey (**Report 14A7.3-3, Annex 14A7.3**), black-headed gull was recorded foraging and loafing at every VP, except for VP12. The main area of activity was between the RSPB Minsmere Reserve breeding population and the Sizewell B power station outfall, with a peak count of 500 birds foraging on the Sizewell B power station outfall in June 2011 (although more typical counts were of 30 to 100 birds). During Winter, the numbers declined with a peak count of 69 birds foraging in December 2011. The main congregation of black-headed gulls in Winter were located offshore of RSPB North Warren Reserve, where 1,000 birds were recorded resting on the sea in December 2011. Large numbers of black-headed gulls were also observed commuting north or south, but only those that were utilising the area in some way were reported.

iii. Primary data

1.2.259 Black-headed gull was recorded during Winter red-throated diver surveys in October 2012 to March 2013, little tern surveys April to September 2013, red-throated diver surveys in October 2013 to March 2014 and cormorant surveys in October 2014 to March 2015. Black-headed gull was recorded from every VP and was recorded commuting, foraging and resting within offshore water and resting within onshore waters. The peak count of black-headed gull was 1,500 birds observed foraging and roosting on 20 January 2015 from VP 2. All sightings of black-headed gull from the coastal surveys are summarised in **Table 1.44**.

1.2.260 Black-headed gull was also recorded as present on the site during both the 2014 breeding bird survey, the 2014-2015 wintering bird survey, and as a secondary species during the arable harrier surveys in 2015. All records of black-headed gull present on the site during the 2014 breeding bird and the 2014-2015 wintering bird survey are shown in **Table 1.44**.

Table 1.44: Summary of all black-headed gull sightings recorded during the Arcadis site breeding bird survey 2014, wintering bird survey 2014-15 and arable harrier surveys 2015.

Date	No. birds recorded	Survey area	Survey
29/04/2015	15	Proposed main platform and Sizewell Beach	Site breeding birds 2014
15/05/2014	2		
14/05/2014	2	Upper Abbey Farm arable fields	
05/06/2014	7		

Date	No. birds recorded	Survey area	Survey
05/06/2014	3	Goose Hill	
13/11/2014	1	Proposed main platform and Sizewell Beach	Site wintering birds 2014-15
02/12/2014	10		
06/01/2015	11		
03/02/2015	2		
04/03/2015	1		
13/11/2014	5	Upper Abbey Farm arable fields	Site wintering birds 2014-15
19/05/2015	8	VPA	Marsh harrier arable survey 2015
02/06/2015	2		
18/06/2015	3		
06/07/2015	8		
12/08/2015	2		
28/04/2015	2	VPB	Marsh harrier arable survey 2015
18/06/2015	4	VPC	Marsh harrier arable survey 2015
22/07/2015	17		
10/08/2015	2		
19/05/2015	4	VPD	Marsh harrier arable survey 2015
02/06/2015	3		
16/06/2015	3		
10/08/2015	4		
14/08/2015	1		
21/05/2015	1	VPE	Marsh harrier arable survey 2015
18/06/2015	7		
14/08/2015	1		
20/05/2015	2		
03/06/2015	9		
16/06/2015	13		
06/07/2015	4		
21/07/2015	10		

1.2.261 Black-headed gulls was recorded during the 2014-2015 waterfowl surveys, with five records of black-headed gull present, four of these records were of

birds present on Minsmere South Levels, and a single record of birds present at Sizewell Marshes SSSI. Black-headed gull was also recorded during the wetland bird surveys (2018-19) within Minsmere South Levels. All records of black-headed gull present during the waterfowl survey 2014-2015 and wetland bird surveys 2018-2019 are shown in **Table 1.45**.

Table 1.45: Summary of all black-headed gull sightings recorded during the Arcadis waterfowl survey 2014-2015 and wetland bird survey 2018-19.

Date	Location (as per definitions set out within Table 1.3 and 4, section 1.2)	No. birds recorded	Survey type
11/11/2014	Minsmere South Levels	15	Waterfowl survey
08/01/2015	Minsmere South Levels	138	
05/02/2015	Minsmere South Levels	70	
05/03/2015	Minsmere South Levels	164	
11/11/2014	Area 2	2	
December 2018	Minsmere South Levels (TN 1)	1	Wetland bird survey
January 2019	Minsmere South Levels (TN 1)	1	
January 2019	Minsmere South Levels (TN 2)	18	
February 2019	Minsmere South Levels (TN 3)	74	

1.2.262 In summary, black-headed gull has been recorded in flight across the survey area and was regularly recorded within the site. Specifically, black-headed gull was observed foraging near the Sizewell B power station, where this species was also known to breed.

v) **Herring gull**

1.2.263 Herring gull is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a decline of 60% in the UK breeding population in the last 25 years, a longer-term decline of 53-60% since the first BoCC review and the fact that the UK possesses 20-30% of the European non-breeding population (Ref. 1.2). Herring gull is also listed as a priority species in section 41 of the NERC Act (2006) (Ref. 1.3) and the Suffolk BAP identifies herring gull as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

1.2.264 The desk-study revealed that herring gull form part of the qualifying features of one of the designated sites within 20km of the site, as detailed in **Table 1.46**.

Table 1.46: Statutory designated sites that include herring gull within the qualification.

Designated site	Species relevant qualification detail
Alde-Ore Estuary SPA	The Alde-Ore Estuary SPA qualifies under Article 4.2 of the Directive by regularly supporting a seabird assemblage of international importance. During the breeding season, the area regularly supports 59,118 individual seabirds (Count period ongoing), including herring gull.

Suffolk Birds

1.2.265 The Suffolk Birds reports (Ref. 1.9 - 1.15) describes herring gull as a very common resident, Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that 69 breeding pairs were reported at Orfordness. The report did not state all locations of sightings reported. The 2018 Suffolk Bird Report (Ref. 1.15) stated that 68 pairs nested on Orfordness, producing 45 chicks.

RSPB

1.2.266 The RSPB reported 12 records of herring gull within 5km of the existing Sizewell power station complex. These records were located at both RSPB Minsmere Reserve and RSPB North Warren Reserve, with nine of these records being of confirmed or probable breeding (including one and three apparently occupied nests). The remaining three records occurred in Winter at RSPB North Warren Reserve, with between eight and 55 individuals recorded.

SBIS

1.2.267 Desk-study records provided by SBIS reported six records of herring gull within 2km of the site. These records were located at RSPB Minsmere Reserve, Thorpeness, Aldringham Walks and Common, Thorpeness Golf Club and “Sizewell”.

NGL

1.2.268 NGL have recorded the presence of herring gull on the EDF Energy estate in six of the past 14 years of bird surveys. These records comprised two birds recorded during the wetland bird survey in 2004-2005; a further record

of two birds during the farmland bird survey in 2007-2008; one herring gull observed during the WeBS count in 2014; a peak count of two herring gull observed during the WeBS count in 2015; one herring gull observed during the WeBS count in 2017 and two records of herring gull in the WeBS count in 2018.

ii. Secondary data

- 1.2.269 During the April-July 2007 bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), herring gull was recorded throughout the survey period, occurring in greatest numbers around the Sizewell A and B power station outfalls, although frequently birds were recorded loafing rather than actively feeding. There was a peak herring gull count of 130 birds at the existing Sizewell A and B power station outfalls on 15 April, with five additional counts of 50 or more loafing and feeding birds. The peak count of herring gull within Minsmere South Levels and along the coast was 20 loafing birds on 13 May 2007.
- 1.2.270 During the 2007-2008 intertidal and inshore marine surveys (refer to **Report 14A7.3-1 and 14A7.3-2, Annex 14A7.3**), herring gull was regularly showing a strong association with the existing Sizewell A and B power station outfalls as a feeding resource. Herring gull was noted throughout the survey period, with a peak count of 153 herring gull in January 2011, to the south along the coast. Herring gull was recorded in lower numbers to the north of the survey area.
- 1.2.271 During the 2011-2012 seabird survey (**Report 14A7.3-3, Annex 14A7.3**) herring gull was recorded foraging and loafing from every VP. The Sizewell A and B power station outfalls attracted flocks of juvenile herring gulls, which rested on the sea surrounding the Sizewell A and B power station outfalls structure. Adult and juvenile birds were also seen resting on the nearby rigs associated with the Sizewell A and B power stations. Numbers at the Sizewell A and B power station outfalls were generally lower during the breeding season, with ten to 30 herring gulls usually present, although larger numbers were sometimes recorded, including 135 herring gull there in March 2011 and 75 in June 2011. On Aldeburgh beach a mixed flock of approximately 50 to 100 large gulls (including herring gulls) was present during the breeding season around the fishing boats on the shingle. Numbers of large gulls increased after the breeding season, with congregations of mainly herring gulls and great black-backed gulls present around the Sizewell B power station outfall, offshore, and on the beach at Aldeburgh. Large numbers of herring gulls were recorded foraging around the Sizewell A and B power station outfalls, resting on the rigs associated with the Sizewell A and B power stations, from November 2011 to early April 2012, including 320 present in March 2012 and 300 in April 2012.

Large numbers of herring gulls were observed commuting north or south but only those that were utilising the area in some way were reported.

iii. Primary data

1.2.272 Herring gull was recorded during red-throated diver surveys in October 2012 to March 2013, little tern and sandwich tern surveys April to September 2013, red-throated diver surveys in October 2013 to March 2014 and cormorant surveys in October 2014-March 2015. Herring gull was recorded from every VP and was recorded commuting, foraging and resting offshore and resting onshore. The peak count of herring gull was 2,515 birds recorded foraging and resting on 17 March 2015 from VP2. All sightings of herring gull from the coastal surveys are summarised in **Table 1-61, section 8.**

1.2.273 Herring gull was recorded as present on the site during the 2014 breeding bird survey, the 2014-15 wintering bird survey and as a secondary species during marsh harrier arable surveys. Although herring gull was present throughout the breeding season, the lack of suitable breeding habitat (e.g. cliffs or flat roofed buildings at sufficient height) on the site suggests this species is unlikely to be present as a breeding species within the site. All records of herring gull during the 2014 breeding bird, the 2014-2015 wintering bird survey and marsh harrier arable surveys are shown in **Table 1.47.**

Table 1.47: A summary of all herring gull sightings recorded during the Arcadis site breeding bird survey 2014 and wintering bird survey 2014-2015.

Date	No. birds recorded	Survey area	Survey
29/04/2014	5	Proposed main platform and Sizewell Beach	Site breeding bird survey 2014
15/05/2014	7		
05/06/2014	10		
29/04/2014	8	Goose Hill	Site breeding bird survey 2014
05/06/2014	1		
05/06/2014	9	Upper Abbey Farm arable fields	Site breeding bird survey 2014
13/11/2014	14	Proposed main platform and Sizewell Beach	Site wintering bird surveys 2014-15
02/12/2014	46		
06/01/2014	16		
03/02/2015	10		
04/03/2015	2		

Date	No. birds recorded	Survey area	Survey
13/11/2014	5	Arable fields	Site wintering bird surveys 2014-15
03/02/2015	1		
30/04/2015	1	VPA	Marsh harrier arable surveys
19/05/2015	3		
02/06/2015	6		
18/06/2015	2		
06/07/2015	3		
12/08/2015	5		
28/04/2015	3		
05/05/2015	31		
22/07/2015	6	VPC	
10/08/2015	7		
28/08/2015	1		
16/06/2015	1	VPD	
14/08/2015	2		
27/08/2015	3		

1.2.274 Herring gull was recorded during the 2014-2015 waterfowl surveys, with six records of herring gull. Five of these records were of birds present on Minsmere South Levels and a single record of birds present at Sizewell Marshes SSSI. Two records were also noted during the wetland bird surveys 2018-19. All records of herring gull present during the waterfowl surveys 2014-2015 survey and wetland bird survey 2018-19 are shown in **Table 1.48**.

Table 1.48: A summary of all herring gull sightings recorded during the Arcadis waterfowl surveys and wetland bird survey.

Date	Location (as per definitions set out within Table 1.3: Locations within the survey area where bird species have been recorded. and 4, section 1.2)	No. birds	Survey type
11/11/2014	Minsmere South Levels	7	Waterfowl survey
04/12/2014	Minsmere South Levels	13	
08/01/2015	Minsmere South Levels	9	
05/02/2015	Minsmere South Levels	60	

Date	Location (as per definitions set out within Table 1.3: Locations within the survey area where bird species have been recorded. and 4, section 1.2)	No. birds	Survey type
05/03/2015	Minsmere South Levels	93	
11/11/2015	Area 2	3	
January 2019	Minsmere South Levels (TN 2)	6	Wetland bird survey
February 2019	Minsmere South Levels (TN 3)	19	

1.2.275 In summary, herring gull have been observed within along the coast, within the fields at the northern end of the EDF Energy estate, Minsmere South Levels and Sizewell Marshes SSSI. This species was unlikely to breed within the site due to unsuitable breeding habitat. This species was observed in low numbers throughout the majority of the site. Herring gulls was recorded in high numbers foraging offshore around the Sizewell A and B power station outfall.

1.3 Wetland Assemblage species listed within one or more designated sites

a) Shelduck

1.3.1 Shelduck is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to a moderate decline of 41% in the UK breeding population in the last 25 years, its wintering localisation with 50-60% of the UK non-breeding population found in ten or fewer sites, and the fact that the UK possesses 20-30% of the both the European breeding population and the non-breeding population (Ref. 1.2).

i. Desk-study

1.3.2 The desk-study revealed that shelduck form part of the qualifying features of five of the designated sites within 20km of the site, as detailed in **Table 1.44**.

Table 1.44: Statutory sites that include shelduck on the designation.

Designated site	Species relevant qualification detail
Alde-Ore Estuary SPA	Within the Alde-Ore Estuary SPA shelduck is designated as part of the assemblage qualification under article 4.2. Over Winter, the area regularly supports 24,962 individual waterfowl (five-year peak mean 1991/2 - 1995/6) including shelduck.

NOT PROTECTIVELY MARKED

Designated site	Species relevant qualification detail
Minsmere to Walberswick Heaths and Marshes SSSI	The mudflat on the Blythe Estuary, which forms part of this SSSI, provide an important feeding ground for shelduck.
Alde-Ore Estuary SSSI	Shelduck is designated as a wintering species within this SSSI.

Suffolk Birds

1.3.3 The Suffolk Birds report (Ref. 1.9 - 1.15) describe shelduck as a locally common resident, Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that monthly counts from key sites were reported at Alde/Ore Estuary and Hazlewood Marshes. The peak count in February 2017 at Alde/Ore Estuary was 1123 sightings, which was the highest for 10 years. Various sites held breeding pairs including Sizewell (five pairs) and Orfordness (20 broods). The 2018 Suffolk Bird Report (Ref. 1.15) stated that the peak count (1123) was recorded at Alde/Ore Estuary. Breeding was recorded at Sizewell, although was not stated exactly where. Sightings were also reported at RSPB Minsmere Reserve.

RSPB

1.3.4 Data from the RSPB reported 23 records of shelduck within 5km of Sizewell power station complex. These records were located both at RSPB Minsmere Reserve and RSPB North Warren Reserve. Twenty records were of confirmed, or probable breeding with a peak count of 19 pairs at RSPB North Warren Reserve in 2005 and a peak count of 16 pairs in 2005 on RSPB Minsmere Reserve. The remaining three records were of Winter peak counts at RSPB North Warren Reserve, with counts ranging from 13-15 individuals.

SBIS

1.3.5 Desk-study records provided by SBIS reported eight records of shelduck within 2km of the site. These records were located at RSPB Minsmere Reserve, Thorpeness, Aldringham Walks and Common and Thorpeness Golf Club. One record of two breeding pairs in 2012 was from “Sizewell South Marsh”, this is likely to be the Minsmere South Levels.

BTO

1.3.6 The individual count sector data from the BTO WeBS data for the Minsmere (not including sea) count zone closest to the site, supported an annual five-year mean of peaks count of 72 shelduck. The BTO WeBS count zone for

Minsmere (including the sea) supported an annual five-year mean of peaks count of one bird.

NGL

1.3.7 NGL (2005-2018) only recorded shelduck as present on the EDF Energy estate in nine years of bird surveys from the past 14 years. A summary of the records are shown in **Table 1.50**.

Table 1.49: Summary of shelduck observations on the EDF Energy estate during monitoring undertaken by NGL.

Year	No. breeding territories (April-June)	NGL Wetland bird survey peak count (January-March and September-December)
2018	2	0
2017	5	0
2016	2	0
2015	1	2
2014	1	0
2013	1	0
2012	2	1
2011	3	0
2010	2	0
2009	1	0

ii. Secondary data

1.3.8 During the 2007 bird surveys from April to July carried out by Wood Group (refer to **Report 14A7.3-2, Annex 14A7.3**), a total of five birds were recorded commuting along the coast spread over three dates. During the August 2007-March 2008 surveys (refer to **Report 14A7.3-1, Annex 14A7.3**) two shelduck were observed commuting parallel to the coast to the inshore waters.

1.3.9 During the seabird survey undertaken by Wood Group (refer to **Report 14A7.3-3, Annex 14A7.3**) in 2011-2012, shelduck were recorded on 14 occasions. All of these records consisted of birds commuting along the coast with flocks ranging from individual birds to ten birds. All sightings were along the coast.

iii. Primary data

- 1.3.10 Shelduck was regularly recorded during the coastal surveys undertaken by Arcadis. These records comprised; 20 records during the red-throated diver survey in October 2012-March 2013 (refer to **Report 14A7.4-1, Annex 14A7.4**); three records during the little tern survey 2013; 11 records during the red-throated diver survey 2013-2014; and 21 records during the cormorant survey of 2014-2015. The majority of shelduck records were of birds commuting along the coast, however, there were three records of birds resting on the sea and a single record of three birds foraging on the sea. Shelduck was recorded from every VP, with a peak count of 20 birds recorded commuting past VP2 on 12 November 2014. All records of shelduck during the coastal Arcadis surveys are summarised in **section 7**.
- 1.3.11 There were two records of shelduck during the breeding bird surveys undertaken in 2014, with two birds recorded foraging to the north of Goose Hill during the May visit, and a single bird commuting north over the Sizewell Beach adjacent to Sizewell B power station, also during the May visit.
- 1.3.12 During the 2014-2015 waterfowl survey, there were two records of shelduck, both of which occurred on the Minsmere South Levels. One record was of nine birds present during the February 2015 survey and the other record was of four birds present during the March 2015 survey. A single shelduck was also recorded within Minsmere South Levels during the wetland bird surveys 2018-19.
- 1.3.13 In summary, shelduck have been observed commuting along the coast, are present within Minsmere South Levels during the Winter and have been recorded within Minsmere South Levels occasionally during the breeding season.

b) Wigeon

- 1.3.14 Wigeon is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to its non-breeding localisation, with 50-60% of the non-breeding population found at ten or fewer sites, and because 30-40% of the European non-breeding population is found in the UK (Ref. 1.2).

i. Desk-study

- 1.3.15 The desk-study revealed that wigeon form part of the qualifying features of four designated sites within 20km of the site, as detailed in **Table 1.51**.

Table 1.50: Statutory designated sites that include wigeon within the qualification.

Designated site	Species relevant qualification detail
Alde-Ore Estuary SPA	Within the Alde-Ore Estuary SPA wigeon is designated as part of the assemblage qualification under article 4.2. Over Winter, the area regularly supports 24,962 individual waterfowl (five-year peak mean 1991/2 - 1995/6) including wigeon.
Minsmere to Walberswick Heaths and Marshes SSSI	The mudflat on the Blythe Estuary, part of this SSSI provides a feeding ground for wigeon.
Alde-Ore Estuary SSSI	The Alde-Ore Estuary SSSI supports populations of wintering wigeon.

Suffolk Birds

1.3.16 The Suffolk Birds reports (Ref. 1.9 - 1.15) describes wigeon as a common Winter visitor and passage migrant, with a few birds over summering and occasionally breeding. The 2017 Suffolk Bird Report (Ref. 1.14) stated that monthly counts from key sites were reported at various sites including RSPB Minsmere Reserve, Sizewell, RSPB North Warren Reserve and Alde/Ore Estuary. The 2018 Suffolk Bird Report (Ref. 1.15) described very similar records to the 2017 report, however Sizewell was not mentioned.

RSPB

1.3.17 Data from the RSPB reported five records of wigeon, all of which were located at RSPB North Warren Reserve. Two records were of confirmed, or probable breeding of a single pair at RSPB North Warren Reserve in 2005 and 2007. The other three records related to peak counts of wintering birds with between 1,820 to 3,720 birds recorded wintering at RSPB North Warren Reserve in 2003.

SBIS

1.3.18 Desk-study records provided by SBIS reported no records of wigeon within 2km of the site.

BTO

1.3.19 Within the Minsmere (not including sea) BTO WeBS count zone the annual five-year mean of peaks was 729. The BTO WeBS count zone for Minsmere (including the sea) supported a five-year annual mean peak count of 53 wigeon.

NGL

1.3.20 NGL recorded wigeon as present as a Winter visitor to the EDF Energy estate in every year of the past 14 years of bird surveys. A summary of these records are shown in **Table 1.52**.

Table 1.51: Summary of wigeon observations on the EDF Energy estate during monitoring undertaken by NGL.

Year	Wetland bird survey peak count (January-March and September –December)
2018	137
2017	130
2016	19
2015	120
2014	110
2013	410
2012	11
2011	59
2009-10	36
2008-09	60
2007-08	27
2006-07	66
2005-06	75
2004-05	68

ii. Secondary data

1.3.21 During the August 2007 to March 2008 bird surveys carried out by Wood Group (refer to **Report 14A7.3-1, Annex 14A7.3**) a single flock of 24 wigeon were seen foraging in a field to the north-east of Eastbridge. Wigeon flocks of between two to 22 birds were recorded moving both north and south parallel to the coast, mainly in October, but also in December, January and February. Many of these flocks were noted beyond the survey area, but there were two flights involving 15 birds through the inshore waters. During the seabird survey undertaken by Wood Group in 2011-2012 (refer to **Report 14A7.3-3, Annex 14A7.3**), wigeon were regularly recorded. Peak counts of foraging and resting wigeon from VP1-3 were 50, 100 and 95 respectively. For commuting birds from VP 1, 2 and 3, peak counts of wigeon were seven, two and 14 respectively.

iii. Primary data

- 1.3.22 Wigeon was regularly recorded during the coastal surveys undertaken by Arcadis comprising 24 records during the red-throated diver surveys 2012-2013; one record during the little tern survey of 2013; eight records of red-throated diver surveys 2013-2014; and 15 records of wigeon during the cormorant survey in 2014-2015. The majority of records were of birds either commuting along the coast or resting on the sea, with 28 and 22 records respectively and there were three records of foraging birds. Wigeon was recorded from every VP with a peak count of 336 at VP1 on 20/01/2015. All wigeon records from the coastal surveys are summarised in **Table 1-58, section 8**.
- 1.3.23 Wigeon was also regularly recorded during the waterfowl surveys, with eight records of wigeon being present. Four of these records were located on Minsmere South Levels, with the remaining records located at Rookyard Pits Wood. Wigeon was also recorded within the Minsmere South Levels during the wetland bird surveys (2018-19).
- 1.3.24 All wigeon records from the waterfowl survey 2014-2015 and wetland bird survey 2018-19 are shown in **Table 1.53**.

Table 1.52: A summary of wigeon sightings during the waterfowl survey 2014-15 and wetland bird survey 2018-19.

Date	No. birds	Location (as per definitions set out within Table 1.3 and 4, section 1.2)	Survey type
11/11/2014	34	Minsmere South Levels	Waterfowl survey
08/01/2015	271	Minsmere South Levels	
05/02/2015	387	Minsmere South Levels	
05/03/2015	348	Minsmere South Levels	
18/12/2014	9	Area 3	
08/01/2015	2	Area 3	
19/02/2015	12	Area 3	
03/03/2015	14	Area 3	
December 2018	92	Minsmere South Levels (TN 1)	Wetland bird survey
	60	Minsmere South Levels (TN 2)	
January 2019	54	Minsmere South Levels (TN 2)	

Date	No. birds	Location (as per definitions set out within Table 1.3 and 4, section 1.2)	Survey type
	270	Minsmere South Levels (TN 3)	
February 2019	208	Minsmere South Levels (TN 2)	
	27	Minsmere South Levels (TN 5)	

1.3.25 In summary, wigeon was observed predominately within Minsmere South Levels, Sizewell Marshes SSSI and along the coast, and was recorded more frequently during the Winter compared to the breeding season.

c) **Dunlin**

1.3.26 Dunlin is regarded as being of high conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to a decline in the UK non-breeding population of 49% since the first BoCC review (1996), a decrease of 27% in its breeding range, its breeding localisation with 70-80% of the UK breeding population found in ten or fewer sites and its wintering localisation with 50-60% of the UK non-breeding population found in ten or fewer sites (Ref. 1.2).

i. **Desk-study**

1.3.27 Dunlin form part of the qualifying features of two of the designated sites within 20km of the site, as detailed in **Table 1.54**.

Table 1.53: Statutory designated sites that include dunlin within the qualification.

Designated site	Species relevant qualification detail
Alde Ore Estuary SPA	Within the Alde Ore Estuary SPA dunlin are designated within Annex 1 forming part of the important assemblage. This area over Winter regularly supports 24,962 individual waterfowl (five-year peak mean 1991/2 - 1995/6), including dunlin.
Minsmere to Walberswick Heaths and Marshes SSSI	Within the Minsmere to Walberswick Heaths and Marshes SSSI the mudflat on the Blyth Estuary provide an important feeding ground for dunlin.

Suffolk Birds

1.3.28 The Suffolk Birds reports (Ref. 1.9 - 1.14) describes dunlin as a very common Winter visitor and passage migrant. The 2017 Suffolk Bird Report

(Ref. 1.14) stated that sightings were reported at RSPB Minsmere Reserve, Hazlewood Marshes and Alde/Ore Estuary.

RSPB

- 1.3.29 The RSPB reported three records of dunlin within 5km of the existing Sizewell power station complex. These records were all recorded at RSPB North Warren Reserve during 2003. A peak count of 900 birds was recorded in January, a peak count of 26 birds was recorded in February and a peak count of 100 birds was recorded in March.

SBIS

- 1.3.30 Desk-study records provided by SBIS reported four records of dunlin within 2km of the site. These records were located at RSPB Minsmere Reserve, Thorpeness and Aldringham Walks and Common and Thorpeness Golf Club, south of the site.

NGL

- 1.3.31 NGL have not recorded the presence of dunlin on the EDF Energy estate up until 2018.

ii. Secondary data

- 1.3.32 During the Wood Group April-July 2007 bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), two records of dunlin were observed, with both records occurring on 23 July 2007. The records were of two separate groups of four birds commuting along the coast. Between August 2007 and March 2008, small numbers of birds were recorded on passage to inshore waters, with a peak count of 28 birds.

- 1.3.33 During the Wood Group 2011-2012 seabird survey (refer to **Report 14A7.3-3, Annex 14A7.3**), dunlin was recorded on 23 occasions. Of these records, 22 consisted of birds commuting along the coast with flocks ranging from an individual to 15 birds. The other record was of 25 birds roosting on Orford Ness.

iii. Primary data

- 1.3.34 Dunlin was recorded as part of the red-throated diver surveys in the 2012-2013 and October 2013 to March 2014 Winter surveys, the little tern survey (April to September 2013), and the cormorant surveys (October 2014 to March 2015). Most records relate to birds commuting along the coast All sightings of dunlin from the coastal Arcadis surveys 2012-2015 are summarised in **Table 1.55**.

Table 1.54: A summary of the dunlin records from the coastal Arcadis surveys 2012-2015.

Date	VP	Start	End	No. of birds	Behaviour	Onshore/ Inshore	Survey type
22/01/2013	VP 8	14:45	15:30	4	Commute	Inshore	Red-throated diver survey 2012-13
22/01/2013	VP 13	11:00	11:45	2	Foraging/ Resting	Inshore	
14/05/2013	VP 10	11:55	12:40	25	Rest/Forage	On shore	Little tern survey 2013
20/08/2013	VP 12	12:45	13:30	20	Commute	Inshore	
05/12/2014	VP 9	13:50	14:35	50	Forage	On shore	Red-throated diver survey 2013-14
23/01/2014	VP 12	9:20	10:05	12	Commute	Inshore	
19/03/2014	VP 1	9:50	10:35	5	Commute	Inshore	
12/11/2014	VP 3	7:00	7:45	5	Commute	Inshore	Cormorant survey 2014-15
12/11/2014	VP 4	8:10	8:55	10	Commute	Inshore	
12/11/2014	VP 5	9:10	9:55	10	Commute	Inshore	
25/11/2014	VP 10	12:00	12:45	4	Commute	Inshore	
20/01/2015	VP 10	12:30	13:15	6	Rest	On shore	
17/02/2015	VP 14	8:30	9:15	6	Commute	Inshore	

1.3.35 A single dunlin was recorded within Minsmere South Levels during the December 2018 wetland bird surveys but were not observed during any further Arcadis surveys.

1.3.36 In summary, dunlin was predominantly observed along the coast and was more frequently observed commuting, rather than foraging or resting on shore.

d) Lapwing

1.3.37 Lapwing is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a decline of 57% in the UK breeding population in the last 25 years, a decline of 63% since the first BoCC review and its listing as a European Red List species (Ref. 1.2). Lapwing is also listed as a as a priority species in section 41 of the NERC Act (2006) (Ref. 1.3) and the Suffolk BAP identified lapwing as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

1.3.38 The desk-study revealed that lapwing form part of the qualifying features of two of the designated sites within 20km of the site as detailed in **Table 1.56**.

Table 1.55: Statutory designated sites that include lapwing within the qualification.

Designated site	Species relevant qualification detail
Alde-Ore Estuary SPA	Within the Alde-Ore Estuary SPA lapwing form part of the assemblage qualification, supporting a wetland of international importance. The area qualifies under Article 4.2 of the Directive (Ref. 79/409/EEC) by regularly supporting at least 20,000 waterfowl, including lapwing.
Sizewell Marshes SSSI	Sizewell Marshes SSSI supported a historical a breeding population of lapwing as part of the assemblage. However, anecdotal evidence from NGL suggests breeding waders have declined and are no longer present.

Suffolk Birds

1.3.39 The Suffolk Birds reports (Ref. 1.9 - 1.14) describes lapwing as a very common Winter visitor and passage migrant and as a declining breeding species. The 2017 Suffolk Bird Report (Ref. 1.14) stated that there were counts of 100 or more at various sites including: RSPB Minsmere Reserve and RSPB Havergate Island. Breeding was confirmed at Sizewell SWT, RSPB Minsmere Reserve, RSPB North Warren Resreve, Aldeburgh Marshes, Dingle Marshes, Orfordness and Hollesley Marshes.

RSPB

1.3.40 The RSPB reported 25 records of lapwing within 5km of the existing Sizewell power station complex. These records were split between RSPB North Warren Reserve and RSPB Minsmere Reserve and consisted of between 12 and 2,880 birds. All but three of these records were of probable, or confirmed breeding.

SBIS

1.3.41 Desk-study records provided by SBIS reported 12 records of lapwing within 2km of the site. These records were located at RSPB Minsmere Reserve, Thorpeness, Westleton Walks, Eastbridge, Aldringham Walks and Common, Thorpeness Golf Club and “Sizewell”. The records at “Sizewell” comprised a breeding pair within Sizewell Marshes SSSI in 2011, and a pair in “Sizewell South Marsh”.

BTO

1.3.42 Within the Minsmere (not including sea) BTO WeBS count zone the annual five-year mean of peaks for lapwing was 416. Lapwing was not observed in the Minsmere offshore count zone.

NGL

1.3.43 NGL have recorded lapwing on the EDF Energy estate in every year’s bird surveys for the past 14 years. A summary of the results are shown in **Table 1.57**.

Table 1.56: A summary of NGL lapwing records.

Year	No. breeding territories (April-June)	NGL WeBS survey peak count (Jan-Mar and Sept -Dec)	Farmland bird survey peak count (Jan-Mar and Sept -Dec)	Incidental peak count
2004-05	0	0	2	200
2005-06	1	0	2	
2006-07	1	Unknown	Unknown	
2007-08	1	2	56	
2008-09	1	0	Unknown	
2009-10	2	0	Unknown	
2010-11	3	0	1	
2011	1	0	10	120
2012	0	6	1	
2013	1	11	37	
2014	1	55	0	
2015	0	15	41	
2016	0	65	5	
2017	2	4	2	
2018	0	17	23	

ii. Secondary data

1.3.44 During the Wood Group April-July 2007 surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), three breeding lapwing territories were present within the survey area. These were on the boundary between the EDF Energy estate and RSPB Minsmere Reserve in 2007 and 2010.

1.3.45 Between August 2007 and March 2008 (refer to **Report 14A7.3-1, Annex 14A7.3**), lapwing flocks were regularly recorded using the arable fields on the northern part of the EDF Energy estate, with a peak count of 75 birds recorded in a field to the north-east of Upper Abbey Farm. During the intertidal and inshore marine bird survey, only a single flock of lapwing was recorded, with 28 birds flying north approximately 50m from the shore on 10 December 2007 along the coast.

1.3.46 During the Wood Group 2011-2012 seabird survey undertaken (refer to **Report 14A7.3-3, Annex 14A7.3**), lapwing was recorded on a single occasion, with a flock of 11 birds recorded commuting past in February 2012.

iii. Primary data

1.3.47 Lapwing was occasionally recorded during the offshore surveys, with three records during the red-throated diver surveys October 2012 to March 2013 (refer to **Report 14A7.4-1, Annex 14A7.4**); two records during the little tern survey April-September 2013; two records during the red-throated diver survey October 2013 to March 2014 (refer to **Report 14A7.4-2, Annex 14A7.4**); and four records of lapwing during the cormorant survey undertaken October 2014 to March 2015. These consisted of six records of lapwing commuting along the coast, three records of birds resting on the shore, one record of foraging and one record of a single bird observed on a nest behind the seawall. Lapwing records were spread widely, with birds observed from VPs 1, 2, 5, 6, 7, 10, 11, 13, and 15. All lapwing sightings from the coastal Arcadis surveys 2012-2015 are summarised in **Table 1-57**.

1.3.48 Lapwing was also recorded on the site during the 2014 breeding bird survey, with two birds recorded during the June survey within the arable fields. Although the site contained suitable habitat for breeding lapwing, the lack of any records prior to June would indicate that breeding did not take place within the site; however, it is likely that the site is used as a foraging resource by pairs breeding on the Minsmere South Levels.

1.3.49 Lapwing was recorded during the wintering bird surveys of the site, with eight birds recorded commuting over Goose Hill in November 2014, and a single bird present in an arable field near Upper Abbey Farm during the March 2015 survey.

1.3.50 Lapwing was regularly recorded as being present on the Minsmere South Levels during the 2014-2015 waterfowl survey and 2018-2019 wetland bird survey, with a single bird present in November 2014, 24 birds recorded in December 2014, 38 birds recorded in January 2015, 97 birds recorded in February 2015, 115 birds recorded in March 2015, as well as a peak count

of 34 birds in December 2018, a peak count of eight birds in January 2019, and a peak count of 228 in February 2019.

1.3.51 A summary of the lapwing records during the coastal surveys is presented in **Table 1.58**.

Table 1.57: A summary of the lapwing records from the coastal Arcadis surveys 2012-15.

Date	VP	Start	End	No. of birds	Behaviour	Onshore/ Inshore waters	Survey type
03/01/2013	VP 13	9:00	9:45	3	Commute	Inshore	Red-throated diver survey 2012-13
22/01/2013	VP 2	7:15	8:00	1	Commute	Inshore	
22/01/2013	VP 6	15:30	16:15	1	Rest	On shore	
29/05/2013	VP 11	15:10	15:55	2	Breed	On shore	Little tern survey 2013
30/03/2013	VP 15	8:00	8:45	1	Rest	On shore	
26/11/2013	VP 1	11:30	12:15	1	Rest	On shore	Red-throated diver survey 2013-14
17/12/2013	VP 15	12:00	12:45	15	Forage	On shore	
12/11/2014	VP 10	13:05	13:50	13	Commute	Inshore	Cormorant survey 2014-15
12/11/2014	VP 15	13:10	13:55	26	Commute	On shore	
12/11/2014	VP 7	13:15	14:00	11	Commute	Inshore	
17/02/2015	VP 5	6:57	7:42	1	Commute	Inshore	

1.3.52 In summary, lapwing have been observed within the survey area in Winter within the fields at the northern end of the EDF Energy estate and commuting over along the coast. Lapwing was recorded during the breeding season within the site, but no breeding was confirmed. Lapwing are not considered to be breeding within Sizewell Marshes SSSI.

e) **Black-tailed godwit**

1.3.53 Black-tailed godwit is listed on Schedule 1 of the W&CA (Ref. 1.1). Black-tailed godwit is regarded as being of high conservation importance in the UK following its inclusion on the UK Red List for birds. This inclusion is due to a number of factors: an historical decline between 1980 and 1995 (with a lack of any recent recovery); a moderate decline of 35% in its UK breeding range; its European conservation status being listed as ‘vulnerable’; its breeding rarity, with a UK breeding population of only 61-66 pairs; and its

wintering localisation, with 90-100% of the UK non-breeding population located at ten or fewer sites (Ref. 1.2).

1.3.54 Black-tailed godwit is also listed under section 41 of the NERC Act (2006) (Ref. 1.3), and the Suffolk BAP identified black-tailed godwit as a priority species for conservation action within the county (Ref. 1.38).

i. Desk-study

1.3.55 The desk-study revealed that black-tailed godwit form part of the qualifying features of five of the designated sites within 20km of the site, as detailed in **Table 1.59**.

Table 1.58: Statutory designated sites that include black-tailed godwit within the qualification.

Designated site	Species' relevant qualification detail
Alde-Ore Estuary SPA	The Alde-Ore Estuary SPA supports 24,962 individual waterfowl (five-year peak mean 1991/2 - 1995/6), and black-tailed godwit forms part of the designated important wintering waterbird assemblage.
Minsmere to Walberswick Heaths and Marshes SSSI	This SSSI supports a breeding population of black-tailed godwit.

Suffolk Birds

1.3.56 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe black-tailed godwit as a common Winter visitor and passage migrant, and a former breeder. The 2017 Suffolk Bird Report (Ref. 1.14) stated that sightings were recorded at RSPB Minsmere Reserve, Alde/Ore Estuary and Hollesley Marshes

RSPB

1.3.57 The RSPB reported ten records of black-tailed godwit within 5km of Sizewell power station complex, nine of which were located at the RSPB Minsmere Reserve and a single record from RSPB North Warren Reserve. All RSPB Minsmere Reserve records were of possible or probable breeding, although the outcome of these breeding attempts was unknown.

SBIS

1.3.58 Desk-study data provided by SBIS reported five records of black-tailed godwit within 2km of the site. These records were located at RSPB Minsmere Reserve, Thorpeness, Leiston, and a single record in 2012 of two birds at Sizewell Marshes SSSI.

BTO

- 1.3.59 The individual count sector data from the BTO WeBS data for the Minsmere (not including sea) count zone closest to the site, indicated a mean annual five-year peak count of 114 for black-tailed godwit. High counts of black-tailed godwit occurred during the breeding period (specifically April and June). The BTO WeBS count area for Minsmere (including the sea) did not hold any records of black-tailed godwit.

NGL

- 1.3.60 NGL have recorded the presence of black-tailed godwit on the EDF Energy estate on a single occasion, with two birds recorded during the 2012 wetland bird survey (although no spatial information was provided).

ii. Secondary data

- 1.3.61 Black-tailed godwit was not recorded during the surveys carried out by Wood Group.

iii. Primary data

- 1.3.62 Black-tailed godwit was only recorded once during the surveys undertaken by Arcadis, with 31 birds recorded feeding on the scrapes at the northern end of the Minsmere South Levels during the December 2014 waterfowl surveys.

- 1.3.63 In summary, whilst black-tailed godwit have been recorded within the EDF Energy estate, this was only on one occasion, and was only two birds (although no spatial information was provided). More records are available from the Minsmere WeBS counts, although these are not spatial data, and the count zone is very large. Whilst some of these records could relate to Minsmere South Levels, the only confirmed record from this area is from the Arcadis December 2014 waterfowl surveys.

1.4 Other seabird species recorded

a) Introduction

- 1.4.1 This section comprises seabird species which have been recorded during the surveys. These species are not currently specifically listed on an assemblage qualification of any of the designated sites within 20km of the site.

b) Eider

1.4.2 Eider is regarded as being of medium conservation concern following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to its European conservation status being listed as vulnerable (1.2).

i. Desk-study

Suffolk Birds

1.4.3 The Suffolk Birds reports (Ref. 1.9 - 1.14) describes eider as an uncommon Winter visitor and passage migrant. Eider has also been recorded as a breeding species. The 2017 Suffolk Bird Report (Ref. 1.14) stated that there were sightings reported at RSPB Minsmere Reserve, Slaughden, RSPB Havergate Island and Orfordness.

RSPB

1.4.4 The RSPB reported no records of eider within 5km of the existing Sizewell power station complex.

SBIS

1.4.5 Desk-study records provided by SBIS reported no records of eider within 2km of the site.

NGL

1.4.6 NGL have not recorded the presence of eider on the EDF Energy estate within the last 14 years.

ii. Secondary data

1.4.7 Wood Group recorded a single eider as part of the intertidal and inshore marine surveys (refer to **Report 14A7.3-2, Annex 14A7.3**) in July 2007.

1.4.8 Wood Group reported the presence of eider on two occasions between August 2007 and March 2008, with single birds recorded commuting along the coast (refer to **Report 14A7.3-1, Annex 14A7.3**).

1.4.9 During the Wood Group 2011-2012 seabird surveys (refer to **Report 14A7.3-3, Annex 14A7.3**), eider was recorded on ten survey dates, with a total of 41 birds recorded. A peak count of nine birds was recorded from VP9 (Orford Ness) in March 2012.

iii. Primary data

1.4.10 There was a single record of eider during the cormorant survey 2014-2015. The single bird was observed commuting along the coast from VP 5 (Thorpeness) on 25 November 2014.

1.4.11 In summary, eider duck have been recorded occasionally offshore.

c) Long-tailed duck

1.4.12 Long-tailed duck is listed on Schedule 1 of the W&CA (Ref. 1.1). Long-tailed duck is of high conservation concern in the UK following its inclusion on the UK Red List. This inclusion is due to it being listed as ‘vulnerable’ by the International Union for Conservation of Nature (IUCN) and to its European conservation status also being listed as ‘vulnerable’ (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.4.13 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe long-tailed duck as an uncommon Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that small numbers were reported regularly offshore at RSPB Minsmere Reserve, along with sightings at Dunwich, Thorpeness, Slaughden, Iken, and Hazlewood Marshes.

RSPB

1.4.14 The RSPB reported no records of long-tailed duck within 5km of the current Sizewell power station complex.

SBIS

1.4.15 Desk-study records provided by SBIS reported a total of six records of long-tailed duck within 2km of the site. These records were located offshore at RSPB Minsmere Reserve, Thorpeness and “Sizewell”.

BTO WeBS

1.4.16 Long-tailed duck has not been recorded in either of the BTO WeBS Minsmere count zones.

NGL

1.4.17 NGL have not recorded the presence of long-tailed duck on the main EDF Energy estate up until 2018.

ii. Secondary data

1.4.18 Wood Group did not record long-tailed duck during any of the surveys undertaken.

iii. Primary data

1.4.19 Long-tailed duck was recorded on five occasions during the coastal Arcadis surveys between 2013 and 2015. A peak count of two birds was recorded on three separate occasions. A summary of all long-tailed duck records is shown in **Table 1.60**.

Table 1.59: A summary of long-tailed duck sightings recorded during the coastal Arcadis surveys 2012-15.

Date	VP	Start	End	No. of birds	Behaviour	Onshore or Inshore waters	Survey type
12/11/2013	VP9	13:25	14:10	2	Rest	Inshore	Red-throated diver survey 2013-2014
12/11/2014	VP1	8:15	9:00	2	Commute	Inshore	Cormorant survey 2014-2015
25/11/2014	VP12	9:10	9:55	1	Commute	Inshore	
16/12/2014	VP15	14:10	14:55	1	Commute	Inshore	
04/02/2015	VP11	11:45	12:30	2	Commute	Inshore	

1.4.20 In summary, long-tailed duck have only been recorded during the targeted Arcadis coastal surveys between 2013 and 2015, and only on five occasions (and with no more than two birds observed).

d) Common scoter

1.4.21 Common scoter is listed on Schedule 1 of the W&CA (Ref. 1.1). Common scoter is regarded as being of high conservation importance in the UK following its inclusion on the Red List for BoCC (Ref. 1.2). This inclusion is due to the following factors: a severe decline in the UK breeding population of 63% in the last 25 years; a longer-term decline of 81% in the UK breeding population since the first BoCC review; a decline of 58% in its breeding range in the last 25 years; a decline of 50% in its breeding range since the first BoCC review; its breeding rarity, with the UK population being only 52 pairs; and its wintering localisation, with 90-100% of the UK non-breeding population found in ten or fewer sites (Ref. 1.2). In addition, common scoter is also listed under section 41 of the NERC Act (2006) (Ref. 1.3).

i. Desk-study

Birds of Suffolk

- 1.4.22 The Suffolk Birds reports 1.9 - 1.14) describe common scoter as a declining non-breeding resident, Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that inshore feeding flocks were reported at various locations, including RSPB Minsmere Reserve, Thorpeness, Aldeburgh, Slaughden and Dunwich.

RSPB

- 1.4.23 The RSPB reported no records of common scoter within 5km of the existing Sizewell power station complex.

SBIS

- 1.4.24 Desk-study data provided by SBIS reported a total of ten records of common scoter within 2km of the site. These records were located offshore at RSPB Minsmere Reserve, Thorpeness, Aldringham Common and Walks, and “Sizewell”.

BTO WeBS

- 1.4.25 Annual five-year mean of peaks for common scoter in the Minsmere count area (including the sea) was 62 between 2008 and 2013. One common scoter was recorded in the Minsmere count zone (not including the sea) during the five-years of survey.

NGL

- 1.4.26 NGL have not recorded the presence of common scoter on the EDF Energy estate.

ii. Secondary data

- 1.4.27 Wood Group recorded common scoter during three of their surveys: the intertidal surveys in 2008 (peak count of five birds), as reported in Wood Group’s first interim report (refer to **Report 14A7.3-2, Annex 14A7.3**); the offshore and intertidal surveys carried out from August 2007 to March 2008 (peak count 150 birds), as reported in the second interim bird report (refer to **Report 14A7.3-1, Annex 14A7.3**); and during the seabird survey in 2011-2012 (peak count of 32 from VP 6, peak count of eight in August 2011 from VP 3) (refer to **Report 14A7.3-3, Annex 14A7.3**).

iii. Primary data

- 1.4.28 Common scoter was also recorded during the Arcadis little tern and sandwich tern surveys in 2013, during both of the red-throated diver surveys (2012 to 2013 and 2013 to 2014), and during the cormorant surveys (2014-2015).
- 1.4.29 During the little tern and sandwich tern survey, a peak count of 180 common scoter was recorded in June 2013, from VP 14, with a peak count of 100 recorded from the VPs along the coast.
- 1.4.30 During the red-throated diver surveys, a peak count of 50 common scoter was recorded from VP 14 (south of the site) in November 2012, with a peak count of 20 common scoter recorded from VP 3. In 2013-2014 red-throated diver surveys a peak count of 250 was recorded from VP 8 (south of the site), with a peak count of 100 common scoter recorded from VP 2. During the cormorant surveys in 2014-2015, a peak count of 95 common scoter were recorded from VP 2. Common scoter was frequently recorded on all three surveys during the Winter.
- 1.4.31 In summary, common scoter have been observed in small numbers offshore within the survey area.

e) Velvet scoter

- 1.4.32 Velvet scoter is listed on Schedule 1 of the W&CA (Ref. 1.1), is regarded as being of high conservation importance in the UK following its inclusion on the Red List for BoCC (Ref. 1.2). This inclusion is due to the following factors: it is listed as 'vulnerable' by IUCN (IUCN, 2015); its European conservation status being listed as 'vulnerable'; and its wintering localisation, with 90-100% of the UK non-breeding population found in ten or fewer sites (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.4.33 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe velvet scoter as an uncommon Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that there were a small number of records from various sites including Sizewell, RSPB Minsmere Reserve, Aldeburgh and Dunwich.

RSPB

- 1.4.34 The RSPB reported two records of velvet scoter within 5km of the existing Sizewell power station complex, with three birds recorded in January 2003 and a single bird in February 2003. Both sightings were recorded at offshore at RSPB North Warren Reserve.

SBIS

- 1.4.35 Desk-study records provided by SBIS reported a total of six records of velvet scoter within 2km of the site. These records were located offshore at RSPB Minsmere Reserve, Thorpeness, Aldringham Common and Walks, and “Sizewell”.

BTO WeBS

- 1.4.36 Velvet scoter was not recorded in either of the BTO WeBS Minsmere count zones.

NGL

- 1.4.37 NGL have not recorded the presence of velvet scoter on the EDF Energy estate up until 2018.

ii. Secondary data

- 1.4.38 Wood Group recorded velvet scoter offshore of the site. The two velvet scoter records consisted of a solitary bird seen in November 2008, and a flock of four birds observed in December 2007, with both sightings offshore of the EDF Energy estate (refer to **Report 14A7.3-1, Annex 14A7.3**).

iii. Primary data

- 1.4.39 Velvet scoter was recorded during both the red-throated diver surveys (2013 to 2014) and the cormorant surveys (also 2014 to 2015). There were seven records of velvet scoter in total, with the peak count (of four commuting birds) being seen from VP12 on 12 November 2014. Birds were seen from VPs 1, 9, 10, 12, 14 and 15, and were recorded either commuting along the coast or resting on the sea. A summary of all the velvet scoter sightings is shown in **Table 1.61**.

Table 1.60: A summary of all of the velvet scoter records during the coastal Arcadis surveys 2012-15.

Date	VP	Start	End	Number of birds	Behaviour	Onshore/Inshore waters	Survey type
12/11/2013	VP 1	12:45	13:30	1	Rest	Inshore	Red-throated diver survey 2013-2014
26/11/2013	VP 9	14:00	14:45	2	Rest	Inshore	Red-throated diver survey 2013-2014
12/11/2014	VP 12	9:10	9:55	4	Commute	Inshore	Cormorant survey 2014-2015
25/11/2014	VP 10	12:00	12:45	2	Commute	Inshore	Cormorant survey 2014-2015
03/12/2014	VP 12	9:15	10:00	2	Commute	Inshore	Cormorant survey 2014-2015
20/01/2015	VP 15	13:00	13:45	2	Rest	Inshore	Cormorant survey 2014-2015
17/02/2015	VP 14	8:30	9:15	2	Commute	Inshore	Cormorant survey 2014-2015

1.4.40 In summary, velvet scoter have been observed only very occasionally offshore during the coastal surveys, and generally either offshore to the north or to the south (rather than directly offshore from the site).

f) Goldeneye

1.4.41 Goldeneye is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to its breeding rarity with a UK population of only 200 pairs (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.4.42 The Suffolk Birds reports (Ref. 1.9 - 1.14) describes goldeneye as a fairly common Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that monthly counts from key sites included Alde/Ore Estuary. The report did not state all locations of sightings reported.

RSPB

- 1.4.43 The RSPB reported a single record of goldeneye within 5km of the existing Sizewell power station complex. This record was of a single bird located at RSPB North Warren Reserve in January 2003.

SBIS

- 1.4.44 Desk-study records provided by SBIS reported eight records of goldeneye within 2km of the site, with seven records within the last ten years. These records were located at RSPB Minsmere Reserve, Thorpeness and Aldringham Walks and Common.

NGL

- 1.4.45 NGL have not recorded the presence of goldeneye on the EDF Energy estate in the last 14 years.

ii. Secondary data

- 1.4.46 The Wood Group seabird survey (**Report 14A7.3-3, Annex 14A7.3**) recorded two records of goldeneye, with a peak count of three birds recorded commuting from VP11 (Orford Ness) in January 2012. A female goldeneye was also recorded offshore in December 2011

iii. Primary data

- 1.4.47 Goldeneye was recorded on two occasions during the first Winter red-throated diver survey 2012-2013 (refer to **Report 14A7.4-1, Annex 14A7.4**), with a peak count of two birds recorded commuting from VP 15 (Dunwich Beach) on 28 November 2012.

- 1.4.48 Goldeneye was recorded on a single occasion during the second Winter red-throated diver survey 2013-2014, with two birds recorded commuting from VP 2 on 12 November 2013. During the cormorant survey 2014-2015, a single goldeneye was also commuting from VP 12 (Orford Ness) on 3 December 2014.

1.4.49 In summary, goldeneye was recorded on an occasional basis, with all sightings being recorded offshore.

g) Black-throated diver

1.4.50 Black-throated diver is listed on Schedule 1 of the W&CA (Ref. 1.1). Black-throated diver is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to its breeding and non-breeding rarity with a UK population of only 200 pairs (Ref. 1.2). Black-throated diver was only recorded as an incidental sighting, this is detailed below.

1.4.51 Wood Group reported black-throated diver on one occasion in December 2011 during the seabird survey (**Report 14A7.3-3, Annex 14A7.3**).

1.4.52 The 2017 Suffolk Bird Report (Ref. 1.14) describe black-throated diver as an uncommon Winter visitor and passage migrant. The report stated that only three records were received in 2017 and could be the same individual, all more than 35km from Sizewell.

h) Great northern diver

1.4.53 Great northern diver is listed on Schedule 1 of the W&CA (Ref. 1.1). Great northern diver is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to its Vulnerable European status and great northern diver is a species of non-breeding importance (Ref. 1.2). Great northern diver was only recorded as an incidental sighting, this is detailed below.

1.4.54 Wood Group reported great northern diver on one occasion in 2008 (**Report 14A7.3-1, Annex 14A7.3**).

1.4.55 The 2017 Suffolk Bird Report (Ref. 1.14) describe great northern diver as an uncommon Winter visitor and passage migrant. The report stated that there were sparse recordings including sightings at RSPB Minsmere Reserve, Slaughden, Hazlewood Marshes and Dunwich.

i) Black tern

1.4.56 Black tern is listed on Schedule 1 of the W&CA (Ref. 1.1). Black tern is regarded as being of low conservation importance in the UK following its inclusion on the Green List of BoCC (Ref. 1.2). This inclusion is due to its Vulnerable European status and black tern is a species of non-breeding importance (Ref. 1.2). Black tern was only recorded as an incidental sighting, this is detailed below.

1.4.57 Wood Group reported black tern on seven occasions between July and August 2011 during the seabird surveys. A peak count of 31 birds was recorded on 24 August 2011 around the Sizewell B power station outfall (**Report 14A7.3-1, Annex 14A7.3**).

1.4.58 The 2017 Suffolk Bird Report (Ref. 1.14) describe black tern as a fairly common passage migrant. The report stated that the majority of sightings were at sites including Sizewell, RSPB Minsmere Reserve and Walberswick.

j) **Roseate tern**

1.4.59 Roseate tern is a Schedule 1 species as listed in the W&CA (Ref. 1.1) and, is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This is due to its severe breeding population decline over 25 years and in the longer-term, moderate breeding range decline over 25 years and breeding rarity in the UK. Roseate tern was only recorded as an incidental sighting, this is detailed below.

1.4.60 During the Wood Group seabird survey on 18 July 2011 a single bird was recorded resting on the beach at Dingle during the little tern and sandwich tern surveys (for further details refer to **Report 14A7.3-3, Annex 14A7.3**).

k) **Kittiwake**

1.4.61 Kittiwake is regarded as being of high conservation importance following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a severe decline in the UK breeding population of 74% in the last 25 years, and in the longer-term a decline of 62% in the UK breeding population since the first BoCC review, and its European conservation status being listed as vulnerable (Ref. 1.2).

i. **Desk-study**

1.4.62 The rigs associated with the Sizewell A and B power stations have been designated as a county wildlife site due to the presence of breeding kittiwake. This site is one of only two sites in Suffolk where kittiwake breed (the other being Lowestoft docks).

Suffolk Birds

1.4.63 The Suffolk Birds reports (Ref. 1.9 - 1.14) described kittiwake as a very common passage migrant and winter visitor with a small number breeding. The 2017 Suffolk Bird Report (Ref. 1.14) states that 100 kittiwake were recorded at Sizewell and another 100 in and around the RSPB Minsmere

Reserve area. The report noted that breeding is usually attempted on the existing Sizewell power station, however no breeding data was recorded in the county in 2017. The 2018 Suffolk Bird Report (Ref. 1.15) stated that breeding was noted at Sizewell offshore rigs, with a peak count of 240 nests. Outside of the breeding season, 200 individuals were recorded at Minsmere Beach.

RSPB

1.4.64 RSPB reported no records of kittiwake within 5km of the existing Sizewell power station complex.

SBIS

1.4.65 SBIS reported no records of kittiwake within 2km of the site.

NGL

1.4.66 NGL have recorded kittiwake in each of the last ten years. These records are all of breeding attempts on the Rigs associated with the Sizewell A power station. There have been no records of kittiwake from 2014-2018. A summary of NGL kittiwake records are shown in **Table 1.62**.

Table 1.61: Summary of NGL kittiwake records.

Year	No. nesting pairs	Notes
2013	Present	No count reported
2012	Present	No count reported
2011	Present	No count reported
2010	Present	No count reported
2009	Present	No count reported
2008-09	Present	No count reported
2007-08	265	N/a
2006-07	256	N/a
2005-06	Approximately 250	N/a
2004-05	200	Some nests washed away during heavy rain

ii. Secondary data

1.4.67 Wood Group reported the presence of breeding kittiwake during the intertidal bird survey in 2007 (refer to **Report 14A7.3-2 in Annex 14A7.3**). The number of nesting pairs was not counted and birds were only recorded

loafing in the vicinity of the rigs, and no feeding was recorded in the inshore waters or around the Sizewell B power station outfall.

1.4.68 Wood Group reported the presence of kittiwake throughout the winter of 2007/2008 (refer to **Report 14A7.3-1** in **Annex 14A7.3**), except for November and December 2007 when birds were absent. Birds were mostly recorded loafing around the rigs, although foraging by small groups of birds was recorded. A peak of 129 birds were recorded in February 2008.

1.4.69 The Wood Group seabird survey 2011-2012 (refer to **Report 14A7.3-3** in **Annex 14A7.3**) recorded kittiwake regularly. In particular birds were recorded associated with the rigs, with nesting birds first being present on 24 March 2012. Birds were observed using the rigs to nest until 9 September 2011, after which all young had fledged and no more birds were observed using the rigs. The estimated number of birds using the rigs to nest was 300 pairs, although this is not an accurate count as large areas of the rigs are not visible from the shore and to carry out an accurate survey a boat would be needed. Kittiwake was also recorded away from the rigs, especially during the non-breeding season, with a peak count of 191 recorded offshore between Slaughden and Orford Ness.

iii. Primary data

1.4.70 Kittiwake was recorded regularly throughout the little tern survey in the Summer of 2013, with the majority of birds recorded in the vicinity of the rig structures. Peaks counts for birds present on the rigs were 300 and 300+ birds recorded on 28 May and 9 July 2013 respectively. Birds were also recorded away from the rig structures, but it should be noted that the peak count for VPs away from the rigs (over 500m) was only eight birds recorded on 8 August from Dunwich cliffs.

1.4.71 Kittiwake was recorded during the 2012-2013 first red-throated diver survey, however kittiwake was only recorded during four separate survey visits, all during March 2013, with birds presumably returning to nest on the rigs. The peak count for these records was 140 birds recorded from VP 3 on 27 March 2013. The earliest record of birds nesting was on 4 March 2013, with 20 birds recorded nesting on the rigs.

1.4.72 The second winter red-throated diver survey 2013-2014 (refer to **Report 14A7.4-2**, **Annex 14A7.4**) again only recorded kittiwake during the surveys undertaken in March 2014, with birds recorded during three separate survey visits. The peak count was of 100 birds recorded from VP 3 on 19 March 2014.

1.4.73 The cormorant survey 2014-2015 recorded kittiwake on two separate survey dates in February and March 2015. The peak count was 90 birds recorded from VP 3 in the vicinity of Sizewell B power station rig.

1.4.74 In summary, kittiwake are associated with the rig structures and are known to frequently breed in these locations.

l) Fulmar

1.4.75 Fulmar is regarded as being of medium conservation importance following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to its European conservation status being listed as endangered and its breeding localisation with 50-60% of the UK breeding population found in ten or fewer sites (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.4.76 The Suffolk Birds reports (Ref. 1.9 - 1.14) described fulmar as a declining passage migrant and is also recorded as a former breeding species in the county. The 2017 Suffolk Bird Report (Ref. 1.14) states that a low number of records were submitted in 2017, with maximum day counts below 10. There were no sightings reported within 10km of Sizewell.

RSPB

1.4.77 The RSPB reported no records of fulmar within 5km of the existing Sizewell power station complex.

SBIS

1.4.78 Desk-study records provided by SBIS revealed no records of fulmar within 2km of the site.

NGL

1.4.79 NGL have not recorded fulmar as present on the EDF Energy estate in the last 14 years.

ii. Secondary data

1.4.80 Wood Group recorded fulmar infrequently as part of the intertidal and inshore marine surveys (refer to **Report 14A7.3-2, Annex 14A7.3**). However, no birds were recorded in the inshore waters. The Wood Group 2011-2012 seabird survey (refer to **Report 14A7.3-3, Annex 14A7.3**)

reported ten records of fulmar, with a peak count of four birds recorded from VP 3 in April 2012.

iii. Primary data

1.4.81 The second Winter red-throated diver survey 2013-2014 (refer to **Report 14A7.4-2, Annex 14A7.4**) recorded fulmar on three occasions, with all records occurring in March 2014. There was a peak count of two birds recorded at both VP 4 (Sizewell Hall) on 18 March 2014, and VP12 (Orford Ness) on 19 March 2014. There was also a single record of fulmar during the cormorant survey 2014-2015, with a solitary bird recorded commuting from VP3) on 17 March 2015.

1.4.82 In summary, fulmar records within the survey area were restricted to the coast.

m) Manx shearwater

1.4.83 Manx shearwater is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to a breeding range decline of 28% since the first BoCC review (1996), its breeding localisation with 90-100% of the UK population in ten or fewer sites and the fact that the UK possesses 80-90% of the European population (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.4.84 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe Manx shearwater as an uncommon passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) states that 32 sightings were reported in the county in 2017, including one report at Slaughden (approximately 7km south of Sizewell).

RSPB

1.4.85 The RSPB reported no records of Manx shearwater within 5km of the existing Sizewell power station complex.

SBIS

1.4.86 Desk-study records provided by SBIS reported eight records of Manx shearwater within 2km of the site, with seven of these records within the last ten years. These records were found at RSPB Minsmere Reserve, Thorpeness, Aldringham Walks and Common and “Sizewell” (likely to be offshore from the site).

NGL

1.4.87 NGL have not recorded the presence of Manx shearwater on the EDF Energy estate in the last 14 years.

ii. Secondary data

1.4.88 The Wood Group seabird survey recorded a single record of Manx shearwater, with a single bird recorded commuting from VP 12 (Orford Ness) in November 2011.

iii. Primary data

1.4.89 Manx shearwater was not recorded during any Arcadis bird surveys.

1.4.90 In summary, Manx shearwater was only recorded rarely along the coast.

n) Gannet

1.4.91 Gannet is regarded as being of medium conservation importance following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to its breeding localisation with 90-100% of the UK breeding population found in ten or fewer sites and the UK possessing 30-40% of the European breeding population (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.4.92 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe gannet as a common passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) states that peak counts of 1060 in the north-east of the county and 256 in the south-east. Specific locations of records were not noted within the report.

RSPB

1.4.93 The RSPB reported three records of gannet within 5km of the existing Sizewell power station complex. All of these records were of birds located at RSPB North Warren Reserve in 2003, with a peak count of 200 birds in February 2003.

SBIS

1.4.94 SBIS reported no records of gannet within 2km of the site.

NGL

1.4.95 NGL have not recorded the presence of gannet on the EDF Energy estate in the last 14 years.

ii. Secondary data

1.4.96 Wood Group recorded gannet infrequently as part of the intertidal and inshore marine surveys (refer to **Report 14A7.3-2, Annex 14A7.3**) in the inshore waters, with birds more frequently recorded further offshore.

1.4.97 During the intertidal surveys (refer to **Report 14A7.3-1 and 14A7.3-2, Annex 14A7.3**), gannet was recorded offshore, although no details or numbers or locations were provided.

1.4.98 The Wood Group 2011-2012 seabird survey (refer to **Report 14A7.3-3, Annex 14A7.3**) reported gannet as one of the most commonly counted seabird species, with 840 birds recorded over 39 survey dates. There was only one record of foraging gannet, with a single bird seen foraging around the Sizewell B power station outfall in January 2012. The majority of records were of birds commuting through the survey area at a distance of over 1km from the shore.

iii. Primary data

1.4.99 The first red-throated diver survey 2012-2013 (refer to **Report 14A7.4-1, Annex 14A7.4**) recorded gannet on 17 occasions, with a peak count of 37 birds recorded commuting from VP 7 (Aldeburgh) on 27 March 2013.

1.4.100 The little tern survey 2013 (refer to **Report 14A7.4-3, Annex 14A7.4**) recorded a single record of gannet, with a flock of 60 birds seen commuting along the coast from VP 8 (Aldeburgh) on 24 June 2013.

1.4.101 The second Winter red-throated diver survey 2013-2014 (refer to **Report 14A7.4-2, Annex 14A7.4**) recorded gannet on 30 occasions, with a peak count of 16 birds recorded commuting from VP 5 in March 2014.

1.4.102 There were 27 records of gannet during the cormorant survey 2014-2015, with a peak count of 26 birds recorded from VP 11 (Orford Ness) on 25 November 2014.

1.4.103 In summary, gannet was recorded within the survey area on rare occasions. Gannet was observed most frequently foraging in the vicinity of the Sizewell B power station outfall near the site.

o) Arctic skua

1.4.104 Arctic skua is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a severe decline of 79% in the UK breeding population in the last 25 years and a longer-term decline of 44% in the UK breeding population since the first BoCC review (Eaton *et al.*, 2015).

i. Desk-study

Suffolk Birds

1.4.105 The Suffolk Birds reports (Ref. 1.9 - 1.14) described arctic skua as a decreasing passage migrant with a few overwintering. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at RSPB Minsmere Reserve, Slaughden and Southwold.

RSPB

1.4.106 The RSPB reported no records of arctic skua within 5km of the existing Sizewell power station complex.

SBIS

1.4.107 Desk-study records provided by SBIS revealed no records of arctic skua within 2km of the site.

NGL

1.4.108 NGL have not recorded the presence of arctic skua on the EDF Energy estate in the last 14 years.

ii. Secondary data

1.4.109 During the Wood Group intertidal and inshore marine surveys (refer to **Report 14A7.3-1, Annex 14A7.3**) arctic skua was mainly recorded outside of the survey area. However, there were two records of arctic skua interacting with other seabirds in the inshore waters

1.4.110 The Wood Group seabird survey (refer to **Report 14A7.3-3, Annex 14A7.3**) recorded the presence of arctic skua on 12 survey dates, with a total of 31 birds recorded.

iii. Primary data

1.4.111 No arctic skua was recorded as part of the Arcadis bird surveys.

p) Guillemot

1.4.112 Guillemot is regarded as being of medium conservation importance following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to its breeding localisation with 50-60% of the UK breeding population found in ten or fewer sites, and the fact that the UK possesses 50-60% of the European breeding population (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.4.113 The Suffolk Birds reports (Ref. 1.9 - 1.14) described guillemot as a common passage migrant and Winter visitor. The 2017 Suffolk Bird Report (Ref. 1.14) states that a peak count of 609 was reported in the county, however the locations of sightings were not stated within the report.

RSPB

1.4.114 The RSPB reported two records of guillemot within 5km of the existing Sizewell power station complex. Both of these records were of birds located at RSPB North Warren Reserve in 2003, with a peak count of 2,019 birds in January 2003.

SBIS

1.4.115 SBIS reported no records of guillemot within 2km of the site.

NGL

1.4.116 NGL have not recorded guillemot on the EDF Energy estate in the last 14 years.

ii. Secondary data

1.4.117 During the Wood Group 2007 surveys (refer to **Report 14A7.3-1, Annex 14A7.3**), a single guillemot was recorded offshore in November 2007.

1.4.118 During the Wood Group 2011-2012 seabird surveys (refer to **Report 14A7.3-3, Annex 14A7.3**), three guillemot were recorded, with each record of a single bird commuting or loafing on the coast. A further 82 birds were recorded as either guillemot or razorbill.

iii. Primary data

- 1.4.119 During the first Winter red-throated diver survey 2012-2013 (refer to **Report 14A7.4-1, Annex 14A7.4**), a single guillemot was seen foraging/commuting from VP9 (Orford Ness) on 27 March 2013.
- 1.4.120 During the second Winter red-throated diver survey 2013-2014 (refer to **Report 14A7.4-2, Annex 14A7.4**), guillemot was recorded on two occasions, with both records of solitary birds seen commuting from VP 1 and VP 15 (Dunwich) on 12 November 2014.
- 1.4.121 In summary, guillemots was only recorded offshore throughout the survey period.

q) Razorbill

- 1.4.122 Razorbill is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to its breeding localisation with 70-80% of the UK breeding population found in ten or fewer sites and the fact that the UK possesses 20-30% of the European breeding population (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.4.123 The Suffolk Birds reports (Ref. 1.9 - 1.14) described razorbill as an uncommon passage migrant and Winter visitor. The 2017 Suffolk Bird Report (Ref. 1.14) states that the total number of records were 22 in 2017. The peak count was five at Southwold, other locations were not stated within the report.

RSPB

- 1.4.124 The RSPB reported two records of razorbill within 5km of the existing Sizewell power station complex. Both of these records were located at RSPB North Warren Reserve in 2003, with a peak count of three birds recorded in February.

SBIS

- 1.4.125 SBIS reported no records of razorbill within 2km of the site.

NGL

- 1.4.126 NGL have not recorded the presence of razorbill on the EDF Energy estate in the last 14 years.

ii. Secondary data

1.4.127 Wood Group recorded razorbill on a single occasion as part of the intertidal and inshore marine surveys (refer to **Report 14A7.3-1, Annex 14A7.3**). A single bird was recorded feeding around the Sizewell A and B power station outfalls in October 2007.

1.4.128 During the Wood Group seabird survey 2011-2012 (refer to **Report 14A7.3-3, Annex 14A7.3**), 82 razorbill/guillemots were recorded. Of these, a total of 29 razorbills were observed, with a peak count of 16 birds recorded at VP 12 (Orford Ness) in December 2011.

iii. Primary data

1.4.129 The Arcadis first Winter red-throated diver survey 2012-2013 (refer to **Report 14A7.4-1, Annex 14A7.4**), recorded razorbill on a single occasion, with a solitary bird observed commuting from VP 5 (Sizewell Hall) on 19 December 2012.

1.4.130 There was also a single record of an unidentified auk species during the cormorant survey 2014-2015, with a single bird seen commuting on 25 November 2014.

1.4.131 In summary, razorbill was recorded occasionally along the coast throughout the survey period.

r) Arctic tern

1.4.132 Arctic tern is regarded as being of medium conservation importance following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to a moderate decline of 38% in the UK breeding population in the last 25 years and a decline in its breeding range of 29% since the first BoCC review (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.4.133 The Suffolk Birds reports (Ref. 1.9 - 1.14) described arctic tern as a fairly common passage migrant which last bred in 2008 in the county. The 2017 Suffolk Bird Report (Ref. 1.14) states that a small number of sightings were recorded at various locations. Peak counts of two were reported at RSPB Minsmere Reserve, Hazlewood Marshes, Orfordness and Hollesley Marshes.

RSPB

- 1.4.134 The RSPB reported a single record of arctic tern within 5km of the existing Sizewell power station complex. This record was of a probable breeding attempt located at RSPB Minsmere Reserve in 2008.

SBIS

- 1.4.135 Desk-study records provided by SBIS reported nine records of arctic tern within 2km of the site, seven of which were within the last ten years. These records were located at RSPB Minsmere Reserve, Thorpeness, Aldringham Walks and Common, “Sizewell” and rigs associated with the existing Sizewell A and B power stations.

NGL

- 1.4.136 NGL have not recorded the presence of arctic tern on the EDF Energy estate in the last 14 years.

ii. Secondary data

- 1.4.137 Wood Group recorded arctic tern as part of the intertidal and inshore marine surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), with small numbers of birds identified foraging offshore during May 2007. Arctic terns was also recorded during the intertidal survey carried out by Wood Group (refer to **Report 14A7.3-1, Annex 14A7.3**), with very low numbers of juveniles recorded during August and September 2007, and the last birds recorded in mid-October 2007.

- 1.4.138 The Wood Group seabird survey 2011-2012 (refer to **Report 14A7.3-3, Annex 14A7.3**) also reported arctic terns during four survey visits (in August). The peak count of nine birds was recorded on 4 August 2011.

iii. Primary data

- 1.4.139 Arctic tern was not recorded during any Arcadis bird surveys.

- 1.4.140 In summary, arctic tern was recorded occasionally along the coast during the survey period.

s) Little gull

- 1.4.141 Little gull is regarded as being of low conservation importance in the UK following its inclusion on the Green List of BoCC (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.4.142 The Suffolk Birds reports (Ref. 1.9 - 1.14) described little gull as a fairly common passage migrant that regularly over summers with small numbers over winter. The 2017 Suffolk Bird Report (Ref. 1.14) states that 106 were reported around Sizewell rigs. Additionally, small numbers were reported at RSPB Minsmere Reserve, Aldeburgh Marshes and Hollesley Marshes.

RSPB

- 1.4.143 The RSPB reported one records of little gull within 5km of the current Sizewell power station complex. This record was of 226 individuals at RSPB North Warren Reserve, in January 2013.

BTO

- 1.4.144 Little gull was recorded in the WeBS count areas for Minsmere (not including the sea), where a five-year mean peak count was four.

SBIS

- 1.4.145 Desk-study records provided by SBIS reported 14 records of little gull within 2km of the site. These records were located at RSPB Minsmere Reserve, Thorpeness, Aldringham Walks and Common/Thorpeness Golf Course, “Sizewell rigs” and “Sizewell”.

NGL

- 1.4.146 NGL have not recorded the presence of little gull on the EDF Energy estate up until 2018.

ii. Secondary data

- 1.4.147 Little gull was recorded during the intertidal surveys undertaken in April 2007 to March 2008, where a peak count of eight little gull was recorded around the Sizewell B power station outfall in July 2007. Between August 2007 and March 2008 little gull was recorded between August and October 2007, with a peak count of 75 birds being recorded. Little tern was recorded during the sea bird survey sin 2011-2012, where little gull was reported foraging around the outfall with black-headed gulls. A peak count of 585 was recorded in September 2011.

iii. Primary data

- 1.4.148 Little gull was recorded during the Arcadis red-throated diver surveys in 2013, a peak count of 140 little gull were recorded at VP 1 and little gull was observed from VPs 1, 2, 3, 4, 5 and 8 (refer to **Figure 14A7.3**).
- 1.4.149 Little gull was recorded during the Arcadis red-throated diver surveys in 2014, four birds were recorded from VP3 in November (refer to **Figure 14A7.3**).
- 1.4.150 In summary, little gull was observed along the coast, specifically adjacent to the site and associated with the outfall.

t) Mediterranean gull

- 1.4.151 Mediterranean gull is listed on Schedule 1 of the W&CA (Ref. 1.1). Mediterranean gull is regarded as being of medium conservation importance in the UK following its inclusion on the UK Amber List of BoCC (Ref. 1.2). This inclusion is due to its breeding localisation, with 50-60% of the UK breeding population found in ten or fewer sites (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.4.152 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe Mediterranean gull as an uncommon resident, a Winter visitor and passage migrant, and a rare breeder. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at RSPB Minsmere Reserve (peak count of 535). Records were also reported at Hollesley Marshes.

RSPB

- 1.4.153 The RSPB reported eight records of Mediterranean gull within 5km of the current Sizewell power station complex. These records were all of probable or confirmed breeding birds at RSPB Minsmere Reserve, and consist of between two and six pairs.

BTO

- 1.4.154 The mean five-year peak count for the BTO WeBS Minsmere (not including sea) count zone was 22. No Mediterranean gull was recorded in the Minsmere count area including the sea.

SBIS

- 1.4.155 Desk-study records provided by SBIS reported 12 records of Mediterranean gull within 2km of the site. These records were located at RSPB Minsmere Reserve, Thorpeness, Aldringham Walks and Common/Thorpeness Golf Course, Leiston, Leiston Common and “Sizewell”.

NGL

- 1.4.156 NGL have not recorded the presence of Mediterranean gull on the EDF Energy estate up until 2018.

ii. Secondary data

- 1.4.157 The Wood Group first interim bird report for the time period April to July 2007 (refer to **Report 14A7.3-2, Annex 14A7.3**), reported only occasional sightings of Mediterranean gull, with a peak count of two birds in June 2007. Most birds were recorded commuting to and from the breeding population at RSPB Minsmere Reserve. In the Wood Group second interim bird report (refer to **Report 14A7.3-1, Annex 14A7.3**), between August 2007 to March 2008 Mediterranean gull was recorded in September (one bird), October (two birds), November 2007 (two birds), and in January 2008 (one birds). There was one record of a feeding bird off the northern grid square, and one record of a feeding bird associated with the Sizewell A and B power station outfalls. All other records of Mediterranean gull were of birds commuting or migrating through the inshore waters.
- 1.4.158 During the Wood Group 2011-2012 seabird survey undertaken (refer to **Report 14A7.3-3, Annex 14A7.3**), Mediterranean gull was recorded on 14 occasions; four of these records were of individual birds either roosting or foraging off the coast, and the remaining records were of one or two birds commuting along the coast.

iii. Primary data

- 1.4.159 Mediterranean gull was not recorded as part of the bird surveys undertaken by Arcadis between October 2012 and October 2015.
- 1.4.160 In summary, Mediterranean gull have been observed occasionally within the survey area during the breeding season; however, none were recorded breeding within the survey area, and the closest breeding record is for RSPB Minsmere Reserve.

u) Common gull

1.4.161 Common gull is regarded as being of medium conservation importance following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to 40-50% of the UK non-breeding population found in the UK (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.4.162 The Suffolk Birds reports (Ref. 1.9 - 1.14) described common gull as a very common Winter visitor, and passage migrant and as a scarce breeding species. The 2017 Suffolk Bird Report (Ref. 1.14) states that a peak count of 8000 birds were reported at RSPB Minsmere Reserve in January 2017.

RSPB

1.4.163 The RSPB reported a single record of common gull within 5km of the existing Sizewell power station complex. This record was of a single individual at RSPB North Warren Reserve in 2003.

SBIS

1.4.164 SBIS reported no records of common gull within 2km of the site.

NGL

1.4.165 NGL have not recorded common gull as present on the EDF Energy estate within the past 14 years.

ii. Secondary data

1.4.166 Wood Group did not report common gull as using the EDF Energy estate during any bird surveys. However, common gull was frequently recorded during the coastal surveys, although specific numbers were not reported (refer to **Reports 14A7.3-1, 14A7.3-2 and 14A7.3-3, Annex 14A7.3**).

iii. Primary data

1.4.167 Common gull was recorded during the first Winter red-throated diver survey 2012-2013 (refer to **Report 14A7.4-1, Annex 14A7.4**) on 37 occasions, with a peak count of 300 birds recorded from VP 14 (Dunwich Cliffs) in February 2013.

- 1.4.168 Common gull was recorded during the little tern survey 2013 (refer to **Report 14A7.4-3, Annex 14A7.4**) on two occasions, with a peak count of 15 birds recorded from VP 4 (Sizewell Hall) in February 2013.
- 1.4.169 Common gull was recorded during the second Winter red-throated diver survey 2013-2014 (refer to **Report 14A7.4-2, Annex 14A7.4**) on 27 occasions, with a peak count of 450 birds recorded from VP 7 (Thorpeness) in March 2014.
- 1.4.170 Common gull was recorded during the cormorant survey 2014-2015 on 57 occasions, with a peak count of 752 birds recorded from VP 2 in February 2015.
- 1.4.171 Common gull was recorded in two of the five survey visits during the 2014-2015 Winter bird surveys. These records were both located on the proposed main platform and Sizewell Beach, with a peak count of nine birds during the December 2014 visit.
- 1.4.172 Common gull was also recorded as part of the wintering waterfowl survey, with a single record of six birds recorded on the Minsmere South Levels during the March 2015 survey visit.
- 1.4.173 Common gull was also recorded within Minsmere South Levels during the wetland bird surveys 2018-2019, with one record of 168 birds in January 2019 and a second record of 45 birds in February.
- 1.4.174 Common gull was recorded during the arable harrier survey 2015 on a single occasion, with two birds recorded from VPB in May 2015.
- 1.4.175 In summary, common gull was present across the survey area, with more sightings within along the coastal habitats. Sightings were more prevalent during the Winter and this species is not thought to breed within the survey area.

v) **Great black-backed gull**

- 1.4.176 Great black-backed gull is regarded as being of medium conservation importance following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to a moderate decline in the UK breeding population of 29% since the first BoCC review, and a moderate decline of 33-58% in the UK non-breeding population in the last 25 years (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.4.177 The Suffolk Birds reports (Ref. 1.9 - 1.14) described great black-backed gull as a common Winter visitor and passage migrant. A few birds have over summered and great black-backed gull has recently been recorded as a breeding species. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at RSPB Minsmere Reserve and Orfordness.

RSPB

- 1.4.178 The RSPB reported no records of great black-backed gull within 5km of the existing Sizewell power station complex.

SBIS

- 1.4.179 SBIS reported no records of great black-backed gull within 2km of the site.

NGL

- 1.4.180 NGL have not recorded great black-backed gull as present on the EDF Energy estate in the last 14 years.

ii. Secondary data

- 1.4.181 Wood Group did not report great black-backed gull as using the EDF Energy estate during any bird surveys. However, great black-backed gull was frequently recorded offshore during the coastal surveys, although specific numbers were not reported (refer to **Reports 14A7.3-1, 14A7.3-2 and 14A7.3-3, Annex 14A7.3**).

iii. Primary data

- 1.4.182 Great black-backed gull was recorded during a solitary survey visit during the 2014-2015 wintering bird surveys. This was of a two birds loafing on the Sizewell Beach adjacent to Sizewell A power station during the December 2014 survey visit.
- 1.4.183 Great black-backed gull was recorded on 124 occasions during the first Winter red-throated diver survey 2012-2013 (refer to **Report 14A7.4-1, Annex 14A7.4**), with a peak count of 125 birds recorded commuting/foraging/resting from VP 3 in November 2012.
- 1.4.184 Great black-backed gull was recorded on a total of 32 occasions during the little tern survey 2013, with a peak count of 75 birds recorded commuting along the coast from VP 5 in June 2013.

- 1.4.185 During the second Winter red-throated diver survey 2013-2014 (refer to **Report 14A7.4-2, Annex 14A7.4**), great black-backed gull was seen on 98 occasions. A peak count of 57 birds were recorded commuting/foraging around the rigs associated with the Sizewell A and B power stations from VP 2 in February 2014.
- 1.4.186 Great black-backed gull was also recorded during the cormorant survey 2014-2015 on 123 occasions. The peak count was 200 birds, and the birds were recorded resting from VP2 in January 2015.
- 1.4.187 Great black-backed gull was also recorded on two occasions during the wetland bird surveys 2018-2019, with two birds observed in January 2019 and 47 in February 2019.
- 1.4.188 In summary, the majority of the records of great black-backed gull within the survey area were concentrated along the coast.

w) **Green list seabird assemblage species**

- 1.4.189 In addition to the seabird assemblage species described above, a number of other Green Listed BoCC (Ref. 1.2) seabird assemblage species have also been recorded during the Wood Group and Arcadis surveys. Species accounts have not been included for these species, however, an indication of the surveys in which each of the species have been observed (during the Wood Group and Arcadis surveys) are provided in **Table 1.63** and **Table 1.64**.

Table 1.62: Green list seabird assemblage species observed during Wood Group surveys.

Species	Intertidal bird survey	Intertidal survey	Seabird survey 2011-12
Sooty shearwater (<i>Ardenna grisea</i>)	✓		
Pomarine skua (<i>Stercorarius pomarinus</i>)			✓
Great skua (<i>Stercorarius skua</i>)		✓	✓
Little auk (<i>Alle alle</i>)		✓	✓

Table 1.63: Green list seabird assemblage species observed during Arcadis surveys

Species	Red-throated diver survey 1 st Winter 2012-13	Little tern survey 2013	Red-throated diver survey 2 nd Winter 2013-14	Cormorant survey 2014-15
Pomarine skua				✓
Great skua			✓	

1.5 Other wildfowl and wader species recorded

a) Introduction

1.5.1 This section comprises waterfowl and wader species which have been recorded during the surveys. These species are not currently specifically listed on an assemblage qualification of any of the designated sites within 20km of the site.

b) Mute swan

1.5.2 Mute swan is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2) as the non-breeding Winter population within the UK is of international importance (Ref. 1.2).

i. Desk-study

Suffolk birds

1.5.3 The Suffolk Birds reports (Ref. 1.9 - 1.14) described mute swan as a common resident. The 2017 Suffolk Bird Report (Ref. 1.14) states that five breeding pairs of mute swan were recorded at Sizewell SWT.

RSPB

1.5.4 The RSPB reported 22 records of mute swan within 5km of the existing Sizewell power station complex. All of these records related to either confirmed, or probable, breeding. These records were located at both RSPB Minsmere Reserve and RSPB North Warren Reserve. Peak counts at Minsmere and RSPB North Warren Reserves comprised 12 pairs in 2008 and 2004, and six pairs in 2007 and 2008, respectively.

SBIS

1.5.5 SBIS did not report any records of mute swan within 2km of the site.

BTO WeBS

1.5.6 For the Minsmere (not including sea) BTO WeBS count zone, the annual five-year peak mean was 40 birds. Mute swan was not recorded within the Minsmere offshore count zone.

NGL

1.5.7 NGL have recorded mute swan as a breeding species and during the Winter in each of the last 14 years on the EDF Energy estate. A summary of NGL mute swan records is shown in **Table 1.65**.

Table 1.64: A summary of NGL mute swan records.

Year	No. breeding territories April-June	WeBS count (peak count) Jan-Mar and Sept-Dec
2018	3	9
2017	5	9
2016	5	12
2015	3	12
2014	5	15
2013	5	15
2012	2	12
2011	2	11
2010	4	7
2009	6	8
2008-09	4	11
2007-08	5	14
2006-07	5	12
2005-06	7	14
2004-05	3	17

ii. Secondary data

1.5.8 Mute swan was observed during the dabbling duck survey undertaken by Wood Group in 2007 (refer to **Report 14A7.3-2, Annex 14A7.3**). Five mute swan breeding territories were recorded within the survey area.

1.5.9 A total of three mute swan were observed commuting within the intertidal area during intertidal and inshore marine bird surveys (refer to **Report 14A7.3-1, Annex 14A7.3**). Mute swan was also observed in the ditch system across the EDF Energy estate.

1.5.10 Wood Group reported a single mute swan during the breeding bird survey in 2010 (refer to **Report 14A7.3-5, Annex 14A7.3**). Wood Group also reported a single mute swan breeding territory within Sizewell Marshes SSSI during the arable reversion breeding bird survey in 2012 (refer to **Report 14A7.3-8, Annex 14A7.3**).

iii. Primary data

1.5.11 Two mute swans were observed from VP 13 (Orford Ness) during the little tern survey in 2013 (refer to **Report 14A7.4-3, Annex 14A7.3**).

1.5.12 During the red-throated diver surveys in 2013-2014 (refer to **Report 14A7.4-2, Annex 14A7.4**) a total of four mute swans were observed, one from VP 8 and three from VP 11. During the cormorant intertidal survey four mute swans were observed from VP 15 (Dunwich).

1.5.13 A total of three mute swans were recorded during the 2014 breeding bird survey, these records were located within Sizewell Marshes SSSI. A single mute swan was also recorded in February 2015, within Sizewell Marshes SSSI, during the Winter bird surveys.

1.5.14 Mute swan was recorded frequently during the waterfowl surveys (2014-2015) and wetland bird surveys (2018-2019) and a summary of these sightings is presented in **Table 1.65: Mute swan records during waterfowl surveys in 2014-2015 and wetland bird surveys (2018-2019)**.

1.5.15 .

Table 1.65: Mute swan records during waterfowl surveys in 2014-2015 and wetland bird surveys (2018-2019).

Date	Location (as per definitions set out within Table 1.3: Locations within the survey area where bird species have been recorded. and 4, section 1.2)	Number of birds	Survey type
11/11/2014	Area 1	6	Waterfowl surveys
08/01/2015	Area 1	1	
05/02/2015	Area 1	7	
05/03/2015	Area 1	2	
11/11/2014	Minsmere South Levels	7	
04/12/2014	Minsmere South Levels	4	
08/01/2015	Minsmere South Levels	8	
05/02/2015	Minsmere South Levels	3	

Date	Location (as per definitions set out within Table 1.3: Locations within the survey area where bird species have been recorded. and 4, section 1.2)	Number of birds	Survey type
05/03/2015	Minsmere South Levels	4	
27/11/2014	Area 3	2	
18/12/2014	Area 3	4	
19/02/2015	Area 3	3	
03/03/2015	Area 3	3	
11/11/2014	Area 2	1	
04/12/2014	Area 2	2	
08/01/2015	Area 2	2	
05/02/2015	Area 2	2	
05/03/2015	Area 2	3	
December 2018	Sizewell Marshes SSSI (Compartment C)	1	Wetland bird surveys
	Sizewell Marshes SSSI (Compartment D)	1	
	Minsmere South Levels (TN 2)	3	
	Minsmere South Levels (TN 3)	1	
January 2019	Sizewell Marshes SSSI (Compartment A)	2	
	Sizewell Marshes SSSI (Compartment C)	5	
	Sizewell Marshes SSSI (Compartment D)	2	
	Minsmere South Levels (TN 5)	4	
February 2019	Sizewell Marshes SSSI (Compartment A)	2	
	Sizewell Marshes SSSI (Compartment C)	5	
	Minsmere South Levels (TN 7)	4	
	Minsmere South Levels (TN 7)	2	
	Aldhurst Farm	present	

1.5.16 In summary, mute swan was present within the survey area during the breeding season and non-breeding season. Mute swan was recorded

within along the coast and within Minsmere South Levels and Sizewell Marshes SSSI.

c) **Whooper swan**

1.5.17 Whooper swan is listed on Schedule 1 of the W&CA (Ref. 1.1). Whooper swan is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This is due to its breeding rarity (with a UK population of nine to 14 pairs) and its wintering localisation (with more than 90-100% of the UK non-breeding population found in ten or fewer sites (Ref. 1.2)).

i. **Desk-study**

Suffolk Birds

1.5.18 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe whooper swan as an uncommon Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at RSPB Minsmere Reserve, Southwold and Woodbridge.

RSPB

1.5.19 The RSPB reported no records of whooper swan within 5km of the existing Sizewell power station complex.

SBIS

1.5.20 Desk-study records provided by SBIS reported six records of whooper swan within 2km of the site. These records were located at RSPB Minsmere Reserve, Thorpeness and Eastbridge.

BTO WeBS

1.5.21 The five-year mean peak count for whooper swan within the Minsmere (not including sea) count zone was three. Whooper swan was not recorded in the Minsmere offshore count zone.

NGL

1.5.22 NGL have not recorded the presence of whooper swan on the EDF Energy estate.

ii. **Secondary data**

1.5.23 Wood Group recorded whooper swan offshore of the site during their surveys. However, all records of whooper swan occurred on 17 December

2007, with a flock of 17 birds recorded commuting inland, and a separate flock of five birds commuting along the coast.

iii. **Primary data**

1.5.24 There was a single record of whooper swan during the coastal surveys undertaken by Arcadis, with three birds recorded commuting along the coast from VP 3 on 3 January 2013 as part of the first Winter red-throated diver survey 2012-2013.

1.5.25 In summary, whooper swan have only been observed very rarely off the coast in the vicinity of the site.

d) **Pink-footed goose**

1.5.26 Pink-footed goose is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This is due to both its wintering localisation, with 90-100% or more of the UK non-breeding population found in ten or fewer sites and the fact that 70-80% of the European non-breeding population is found in the UK (Ref. 1.2).

i. **Desk-study**

Suffolk Birds

1.5.27 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe pink-footed goose as an uncommon Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at RSPB North Warren Reserve, Dingle Marshes and Hollesley Marshes.

RSPB

1.5.28 The RSPB reported a single record of pink-footed goose within 5km of the existing Sizewell power station complex. This record was of a flock of 60 birds located at RSPB North Warren Reserve in January 2003.

SBIS

1.5.29 SBIS reported no records of pink-footed goose within 2km of the site.

NGL

1.5.30 NGL have only recorded pink-footed goose as present on the EDF Energy estate on two occasions, with a single bird recorded in March 2014 and another single bird recorded in October 2013. Both observations were recorded during the BTO WeBS count.

ii. Secondary data

1.5.31 During the Wood Group seabird survey (2011-12), a single flock of two birds was recorded commuting from VP 9 (Orford Ness) in November 2011.

iii. Primary data

1.5.32 Pink-footed goose was not recorded during any of the Arcadis bird surveys.

1.5.33 In summary, pink footed goose was recorded rarely within the survey area, and occasionally off the coast.

e) Greylag goose

1.5.34 Greylag goose is regarded as being of medium conservation importance following its inclusion on the Amber List of BoCC (Ref. 1.2). This is due to its wintering localisation, with 50-60% of the UK non-breeding population found in ten or fewer sites (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.5.35 The Suffolk Birds reports (Ref. 1.9 - 1.14) described greylag goose as a common resident from a feral flock. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at multiple locations including RSPB North Warren Reserve, Aldeburgh, Hollesley Marshes and Orfordness. Additionally, breeding greylag geese were reported at Dingle Marshes.

RSPB

1.5.36 The RSPB reported 24 records of greylag goose within 5km of the existing Sizewell power station complex. These records were at both RSPB Minsmere Reserve and RSPB North Warren Reserve, with all but three records were of either confirmed, or probable, breeding. Peak breeding counts were of 42 pairs at RSPB North Warren Reserve in 2005. No information on number of birds at RSPB Minsmere Reserve were recorded.

SBIS

1.5.37 Desk-study records provided by SBIS reported six records of greylag goose within 2km of the site. These records were located at RSPB Minsmere Reserve, Thorpeness, Lower Abbey Farm marshes, and "Sizewell".

NGL

1.5.38 NGL have regularly recorded greylag goose as present on the site within the last 14 years. A summary of NGL greylag goose records is shown in **Table 1.67**.

Table 1.66: A summary of NGL greylag goose records.

Year	No. breeding territories (April-June)	Winter farmland bird survey peak count (Jan-Mar and Sept-Dec)	WeBS survey peak count (Jan-Mar and Sept-Dec)
2018	0	Unknown	4
2017	0	Unknown	4
2016	5	Unknown	44
2015	0	97	120
2014	0	0	65
2013	0	150	34
2012	0	6	2
2011	0	245	77
2010	1	0	87
2009	0	Unknown	Unknown
2008-09	1	Unknown	152
2007-08	1	0	16
2006-07	0	Unknown	95
2005-06	0	6	177
2004-05	2	200	172

ii. Secondary data

1.5.39 During the 2007 Wood Group bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), greylag goose was present on the EDF Energy estate during April 2007 surveys. These birds were recorded on the large pool in the reedbed within Sizewell Marshes SSSI, although the number of birds was not recorded. This was the only record of greylag goose recorded during the Wood Group surveys.

iii. Primary data

1.5.40 Greylag goose was recorded on one survey visit during the 2014-2015 wintering bird surveys. This was of two birds commuting over the Sizewell Beach adjacent to Sizewell B power station and was recorded during February 2015.

- 1.5.41 Greylag goose was recorded once during the waterfowl survey 2014-2015, with a count of six birds recorded on the Minsmere South Levels in March 2015.
- 1.5.42 Greylag goose was recorded during the arable harrier survey 2015, with birds noted as being present from VPB in April 2015.
- 1.5.43 Greylag goose was also recorded on a single occasion during the Arcadis coastal surveys, with a flock of five birds recorded commuting along the coast from VP 5 during the second Winter red-throated diver survey 2013-2014.
- 1.5.44 Greylag goose was also recorded on six occasions during the wetland bird surveys 2018-19 within Minsmere South Levels. A peak count of 19 birds was recorded.
- 1.5.45 In summary, greylag goose has been recorded within the survey area most frequently over Winter, where greylag geese have been recorded within the fields at the northern end of the EDF Energy estate and along the coast. Breeding greylag goose has been recorded occasionally.

f) **Barnacle goose**

- 1.5.46 Barnacle goose is regarded as being of medium conservation importance following its inclusion on the Amber List of BoCC (Ref. 1.2). This is due to its wintering localisation, with at 70-80% of the UK non-breeding population found in ten or fewer sites (Ref. 1.2).

i. **Desk-study**

Suffolk Birds

- 1.5.47 The Suffolk Birds reports (Ref. 1.9 - 1.14) described barnacle goose as a scarce Winter and passage migrant and increasingly common feral resident. The 2017 Suffolk Bird Report (Ref. 1.14) states that 22 breeding pairs were reported at RSPB Minsmere Reserve. Peak counts were reported at RSPB North Warren Reserve, Thorpeness and Southwold.

RSPB

- 1.5.48 The RSPB reported nine records of barnacle goose within 5km of the existing Sizewell power station complex. These records were from both RSPB Minsmere Reserve and RSPB North Warren Reserve, and all but one record related to either confirmed, or probable, breeding. Peak breeding counts of barnacle goose at RSPB Minsmere Reserve was 47

pairs in both 2009 and 2010. The solitary record from RSPB North Warren Reserve was of a flock of nine birds in January 2003.

SBIS

- 1.5.49 Desk-study recorded provided by SBIS reported seven records of barnacle goose within 2km of the site. These records were located at RSPB Minsmere Reserve, Thorpeness, Aldringham Walks and Common, Thorpeness Golf Course and “Sizewell”.

NGL

- 1.5.50 NGL have only recorded barnacle goose as present on the EDF Energy estate in three of the last 14 years. These records were in Winter 2010, with a peak count of 39 birds recorded during the wetland bird survey; in 2011, with a count of 23 birds in January 2011 recorded during the wintering farmland bird survey; and in 2014, with a count of seven in September 2015 recorded during the wintering farmland bird survey..

ii. Secondary data

- 1.5.51 Wood Group did not record barnacle goose as present on the site, although there was a single record of a commuting barnacle goose flock during the coastal survey.

iii. Primary data

- 1.5.52 Barnacle goose was recorded during two of the five waterfowl survey visits, with both records within the Minsmere South Levels. The peak count of barnacle goose was 61 birds, recorded in March 2015.
- 1.5.53 Barnacle goose was recorded on 11 occasions during the first Winter red-throated diver survey 2012-2013 (refer to **Report 14A7.4-1, Annex 14A7.4**), with a peak count was of 300 birds recorded commuting from VP 2 in December 2012.
- 1.5.54 Barnacle goose was recorded on five occasions during the little tern survey 2013 (refer to **Report 14A7.4-3, Annex 14A7.4**). The peak count was of 25 birds recorded commuting from VP 5 in June 2013.
- 1.5.55 During the second Winter red-throated diver survey 2013-2014 (refer to **Report 14A7.4-2, Annex 14A7.4**), barnacle goose was recorded on seven occasions, with a peak count of 80 birds recorded commuting from VP 7 (Thorpeness) in February 2014.

1.5.56 Barnacle goose was also recorded during the cormorant survey 2014-2015 on five occasions, with a peak count of 180 birds recorded commuting from VP 15 (Dunwich Beach) in November 2015.

1.5.57 Barnacle goose was recorded on two occasions within Minsmere South Levels during the wetland bird surveys, with 28 birds recorded in January and seven birds observed in February.

1.5.58 In summary, barnacle goose was recorded in Minsmere South Levels (during the Winter) and commuting along the coast.

g) **Dark-bellied brent goose**

1.5.59 Dark-bellied brent goose, (hereafter referred to as brent goose) is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to 70-80% of the UK non-breeding population found in ten or fewer sites, and 40-50% of the European non-breeding population is found in the UK (Ref. 1.2). Brent goose is also listed as a priority species in section 41 of the NERC Act (2006) (Ref. 1.3).

i. **Desk-study**

Suffolk Birds

1.5.60 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe brent goose as a common Winter and passage migrant to the county. The 2017 Suffolk Bird Report (Ref. 1.14) states that most records were reported on the estuaries of south-east Suffolk, including 200 off Minsmere beach.

RSPB

1.5.61 The RSPB recorded two records of brent geese 5km from the existing Sizewell power station complex, both from RSPB North Warren Reserve (in 2003). One record was of a pair of geese, and the second was of a single bird.

SBIS

1.5.62 Desk-study records provided by SBIS revealed ten records of brent geese within 2km of the site. These records ranged from 1995-2012, with seven records within the last ten years. Brent goose was recorded in the following locations: "Sizewell", Sizewell Beach, RSPB Minsmere Reserve, Thorpeness, and Aldringham Walks and Common.

BTO

- 1.5.63 The individual count sector data from the BTO WeBS data for the Minsmere (not including sea) count zone, closest to the site, supported an annual five-year mean of peaks count of one bird. Counts of brent geese occurred during the passage and wintering period (specifically March, April, May and November). There were no records for brent goose from the Minsmere offshore count zone.

NGL

- 1.5.64 NGL have not recorded the use of the EDF Energy estate by brent goose in the past 14 years.

ii. Secondary data

- 1.5.65 During the Wood Group 2007-2008 intertidal and inshore marine surveys (refer to **Reports 14A7.3-1 and 14A7.3-2, Annex 14A7.3**), brent goose was observed on 20 occasions. Most records were from early October 2007 to January 2008, with one record in February 2008. The peak number observed was 35 birds, which were recorded moving south on 6 October 2007. All records were coastal.

- 1.5.66 During the Wood Group seabird survey undertaken in March 2011 to April 2012 (refer to **Report 14A7.3-3, Annex 14A7.3**), brent goose was observed commuting and resting/foraging during surveys along the coast. Resting and foraging brent geese were observed from VPs 1, 4, 5 and 11 in November 2011, September 2011, March 2012 and April 2012, in groups of 16, eight, one and one respectively. Commuting brent geese were observed from all VP locations, between October and March inclusive. A peak count of 127 brent geese were observed commuting in November from VP 9. From VPs 1, 2 and 3 adjacent to the site, a total of 117 brent geese were observed commuting. A total of 701 brent geese were observed during the Wood Group seabird survey (2011-2012). Detailed tables are found in Annex C in Table C1 and C2 of **Report 14A7.3-2, Annex 14A7.3**.

iii. Primary data

- 1.5.67 Brent goose was recorded during Winter red-throated diver surveys in October 2012 to March 2013 (refer to **Report 14A7.4-1, Annex 14A7.4**), red-throated diver surveys in October 2013 to March 2014 (refer to **Report 14A7.4-2, Annex 14A7.4**) and cormorant surveys in October 2014 to March 2015. All observations were of brent geese commuting over the sea inshore, with the exception of one foraging observation and one resting observation on 6 February 2013. Brent geese were observed from all VP

locations. On the coast adjacent to the site a peak count of 344 brent geese were observed commuting in November 2014. All sightings of brent geese from all coastal surveys are summarised in **Table 1.6-56**.

1.5.68 Brent goose was also observed once during the wetland bird counts, 35 brent geese were observed on Minsmere South Levels on 11 November 2014.

1.5.69 In summary, brent goose was occasionally observed using the offshore environment and was recorded on a single occasion within Minsmere South Levels.

h) Mallard

1.5.70 Mallard is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This is due to a decline of 38% in the UK non-breeding population in the last 25 years (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.5.71 The Suffolk Birds reports (Ref. 1.9 - 1.14) described mallard as a very common resident, Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) states that key sites included RSPB Minsmere Reserve, Alde/Ore Estuary, Dingle Marshes, Orfordness and HAvergate Island. Breeding was reported at Dingle Marshes.

RSPB

1.5.72 The RSPB reported 22 records of mallard within 5km of the existing Sizewell power station complex. These records were all of either confirmed or probable breeding with records from both RSPB Minsmere Reserve and RSPB North Warren Reserve. Peak counts consisted of 166 pairs at RSPB Minsmere Reserve in 2005 and 123 at RSPB North Warren Reserve in 2003.

SBIS

1.5.73 SBIS did not report any records of mallard within 2km of the site.

NGL

1.5.74 NGL recorded the presence of breeding mallard on the site in each of the last 14 years. Mallard was also recorded as part of the wintering bird surveys and the wetland bird surveys (see **Table 1.68**).

Table 1.67: A summary of NGL mallard records.

Year	No. breeding territories (April-June)	Wetland bird survey peak count (Jan-Mar and Sept –Dec)	Farmland bird survey peak count (Jan-Mar and Sept –Dec)
2018	20	45	Unknown
2017	15	40	Unknown
2016	13	114	Unknown
2015	15	65	2
2014	13	90	0
2013	21	120	2
2012	17	34	0
2011	17	36	7
2010	20	62	2
2009	15	66	Unknown
2008-09	26	66	Unknown
2007-08	24	55	1
2006-07	20	Unknown	Unknown
2005-06	28	80	0
2004-05	23	158	4

ii. Secondary data

1.5.75 During the 2007 Wood Group bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), a total of 27 mallard territories were recorded, with one territory present within the site.

1.5.76 During the breeding bird surveys carried out in 2010 (refer to **Report 14A7.3-5, Annex 14A7.3**), a total of eight mallard territories were present, with one territory present within the site.

1.5.77 Wood Group also reported the presence of breeding mallard during the arable reversion breeding bird survey carried out in 2012 (refer to **Report 14A7.3-8, Annex 14A7.3**), with four breeding territories located to the north of the survey area), and birds present during the breeding season to the south of the survey area, although no breeding was confirmed.

iii. Primary data

1.5.78 Mallard was recorded throughout the breeding bird survey in 2014, with a peak count of 11 birds recorded during the first survey visit. Mallard was found across the site, although the main concentration of birds was located

in the reedbed and marsh located to the south-east of Goose Hill. The continued presence of mallard during the breeding season and the availability of suitable breeding habitat would indicate that up to 11 breeding territories were present within the site.

1.5.79 Mallard was also frequently observed during the Arcadis coastal surveys, with peak counts of 60 birds during the first Winter red-throated diver survey 2012-2013 (refer to **Report 14A7.4-1, Annex 14A7.4**); four birds during the little tern survey 2013 (refer to **Report 14A7.4-3, Annex 14A7.4**); five birds during the second Winter red-throated diver survey 2013-2014 (refer to **Report 14A7.4-2, Annex 14A7.4**) and 22 birds recorded during the cormorant surveys 2014-2015.

1.5.80 Mallard was also observed during the waterfowl survey, wintering bird surveys and wetland bird surveys (2018-2019). **Table 1.69** provides a summary of mallard sightings from non-coastal surveys undertaken by Arcadis.

Table 1.68: Summary of mallard sightings from water bird point counts, wintering bird surveys (2014-2015) and wetland bird surveys (2018-19).

Date	Location (as per definitions set out within Table 1.3 and 4, section 1.2)	Number of birds	Survey type
11/11/2014	Area 1	12	Water bird point count
04/12/2014	Area 1	8	
08/01/2015	Area 1	39	
05/02/2015	Area 1	43	
05/03/2015	Area 1	33	
04/12/2014	Minsmere South Levels	36	
08/01/2015	Minsmere South Levels	75	
05/02/2015	Minsmere South Levels	40	
05/03/2015	Minsmere South Levels	33	
27/11/2014	Area 3	18	
18/12/2015	Area 3	36	
08/01/2015	Area 3	15	
19/02/2015	Area 3	13	
03/03/2015	Area 3	15	
11/11/2014	Area 2	3	
04/12/2015	Area 2	14	

NOT PROTECTIVELY MARKED

Date	Location (as per definitions set out within Table 1.3 and 4, section 1.2)	Number of birds	Survey type	
08/01/2015	Area 2	17		
05/02/2015	Area 2	46		
05/03/2015	Area 2	27		
04/03/2015	Upper Abbey Farm arable transect	4	Winter bird survey	
04/03/2015	Goose Hill transect	1		
04/12/2014	Reedbed associated with Sizewell Marshes SSSI transect	1		
22/01/2015	Reedbed associated with Sizewell Marshes SSSI transect	7		
05/02/2015	Reedbed associated with Sizewell Marshes SSSI transect	4		
02/12/2014	Proposed main platform and Sizewell Beach transect	9		
06/01/2015	Proposed main platform and Sizewell Beach transect	12		
04/03/2015	Proposed main platform and Sizewell Beach transect	5		
December 2018	Sizewell Marshes SSSI (Compartment A)	10		Wetland bird survey
	Sizewell Marshes SSSI (Compartment C)	2		
	Sizewell Marshes SSSI (Compartment C)	4		
	Sizewell Marshes SSSI (Compartment D)	10		
	Sizewell Marshes SSSI (Compartment D)	6		
	Sizewell Marshes SSSI (Compartment D)	5		
	Sizewell Marshes SSSI (Compartment D)	5		
	Minsmere South Levels (TN 1)	4		
	Minsmere South Levels (TN 2)	17		
January 2019	Sizewell Marshes SSSI (Compartment A)	7		
	Sizewell Marshes SSSI (Compartment A)	4		

NOT PROTECTIVELY MARKED

Date	Location (as per definitions set out within Table 1.3 and 4, section 1.2)	Number of birds	Survey type
	Sizewell Marshes SSSI (Compartment C)	12	
	Sizewell Marshes SSSI (Compartment C)	2	
	Sizewell Marshes SSSI (Compartment C)	10	
	Sizewell Marshes SSSI (Compartment C)	5	
	Sizewell Marshes SSSI (Compartment D)	2	
	Sizewell Marshes SSSI (Compartment D)	10	
	Sizewell Marshes SSSI (Compartment D)	3	
	Sizewell Marshes SSSI (Compartment D)	10	
	Minsmere South Levels (TN 2)	36	
	Minsmere South Levels (TN 5)	4	
February 2019	Sizewell Marshes SSSI (Compartment A)	10	
	Sizewell Marshes SSSI (Compartment A)	5	
	Sizewell Marshes SSSI (Compartment B)	2	
	Sizewell Marshes SSSI (Compartment D)	6	
	Sizewell Marshes SSSI (Compartment D)	2	
	Sizewell Marshes SSSI (Compartment D)	1	
	Sizewell Marshes SSSI (Compartment D)	8	
February	Sizewell Marshes SSSI (Compartment D)	8	
February	Sizewell Marshes SSSI (Compartment D)	2	
February	Minsmere South Levels (TN 1)	1	
February	Minsmere South Levels (TN 2)	6	

Date	Location (as per definitions set out within Table 1.3 and 4, section 1.2)	Number of birds	Survey type
February	Minsmere South Levels (TN 5)	4	
-	Aldhurst Farm	present	

1.5.81 Mallard was recorded on two occasions during the northern arable breeding bird survey 2015, with four birds recorded immediately north of Ash Wood, and two birds recorded south-west of Sandpytle Plantation. Both records occurring during the April 2015 survey visit.

1.5.82 Mallard was also recorded on ten occasions during the arable harrier surveys 2015, with a peak count of six birds recorded from VPB in April 2015.

1.5.83 In summary, mallard was present throughout the Winter and the breeding season within the survey area and are located throughout the survey area. Mallard was also observed commuting along the coast.

i) **Pintail**

1.5.84 Pintail is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to a moderate decline of 34% in the last 25 years, a decline of its breeding range of 27% in the last 25 years, a longer-term decline of 27% in its breeding range since the first BoCC (1996) review, its breeding rarity with 9 to 33 pairs located in the UK, its wintering localisation with 90-100% of the UK non-breeding population located at ten or fewer sites and the fact that the UK possesses 40-50% of the European non-breeding population (Ref. 1.2).

i. **Desk-study**

Suffolk Birds

1.5.85 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe pintail as a fairly common Winter visitor and passage migrant with a few birds over summering. The 2017 Suffolk Bird Report (Ref. 1.14) states that key sites included RSPB North Warren Reserve and Alde/Ore Estuary. Additional records were reported at RSPB Minsmere Reserve and Southwold.

RSPB

1.5.86 Data provided by the RSPB reported three records of pintail within 5km of Sizewell power station complex. These were located at RSPB North

Warren Reserve and consisted of peak counts of 21 to 40 over-wintering individuals.

SBIS

1.5.87 Desk-study records provided by SBIS reported seven records of pintail within 2km of the site. These were located at RSPB Minsmere Reserve, Thorpeness and Aldringham Walks and Common and Thorpeness Golf Club.

NGL

1.5.88 NGL have not recorded the presence of pintail on the EDF Energy estate up until 2018.

ii. **Secondary data**

1.5.89 During the seabird survey undertaken by Wood Group in 2011-2012 (**Report 14A7.3-3, Annex 14A7.3**), pintail was recorded on four occasions, with flocks of between one and six birds recorded commuting along the coast. Pintail was not recorded during any of the other surveys undertaken by Wood Group.

iii. **Primary data**

1.5.90 Pintail was recorded during the coastal surveys undertaken by Arcadis, with seven records during the red-throated diver surveys 2012-13, and a single record during the red-throated diver survey October 2013-March 2014. All of the records were of birds either commuting along the coast, or resting on the sea, with three and six records respectively.

1.5.91 Pintail was recorded from VP 3, 5, 6, 7, 12 and 1 with a peak count of 110 birds recorded at VP 7 and VP 6 on 20 January 2015. Two records of pintail were also recorded during the 2014-2015 cormorant survey. Both of the records were observed inshore, with two birds recorded in December 2014 at VP 11 and six birds recorded in January 2015 at VP 13. All pintail records from the coastal Arcadis surveys are summarised in **Table 1.70**.

Table 1.69: A summary of pintail sightings recorded during the coastal Arcadis surveys 2012-15.

Date	VP	Start	End	No. of birds	Behaviour	Onshore or Inshore	Survey type
18/12/2012	VP15	13:40	14:25	2	Commute/Rest	Inshore	Red-throated diver survey 2012-13

Date	VP	Start	End	No. of birds	Behaviour	Onshore or Inshore	Survey type
03/01/2013	VP5	13:25	14:10	12	Commute	Inshore	
03/01/2013	VP12	14:30	15:15	40	Rest	Inshore	
22/01/2013	VP12	9:25	10:10	6	Commute	Inshore	
19/02/2013	VP3	10:45	11:30	9	Rest	Inshore	
19/02/2013	VP6	14:20	15:05	110	Rest	Inshore	
19/02/2013	VP7	15:15	16:00	110	Rest	Inshore	
08/01/2014	VP8	15:00	15:45	50	Rest	Inshore	Red-throated diver survey 2013-14
03/12/2014	VP11	11:10	11:55	2	Commute	Inshore	Cormorant survey 2014-15
20/01/2015	VP13	08:35	09:20	6	Commute	Inshore	

1.5.92 Pintail was also recorded during the waterfowl surveys, with pintail being recorded on two occasions at Minsmere South Levels. During the February 2015 survey, ten birds were present, and during the March 2015 survey, 14 birds were present.

1.5.93 In summary, pintail was only observed during surveys undertaken in Winter, suggesting this species does not breed within the site and the wider area. Pintail was most frequently observed in wetland habitats away from the site, such as Minsmere South Levels.

j) **Water rail**

1.5.94 Water rail is listed on the Green List of BoCC (Ref. 1.2).

i. **Desk-study**

1.5.95 The desk-study revealed that water rail form part of the qualifying features of two of the designated sites within 20km of the site, as detailed in **Table 1.71**.

Table 1.70: Statutory designated sites that include water rail within the qualification.

Designated site	Species relevant qualification detail
Minsmere to Walberswick Heaths and Marshes SSSI	Minsmere to Walberswick Heaths and Marshes SSSI is designated for water rail as a breeding bird species.

Suffolk Birds

1.5.96 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe water rail as a fairly common resident, Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) states that 19 breeding pairs were reported at RSPB Minsmere Reserve and 18 pairs at RSPB North Warren Reserve.

RSPB

1.5.97 The RSPB reported 23 records of water rail within 5km of existing Sizewell power station complex. Of these records, ten were from RSPB Minsmere Reserve and 11 were from RSPB North Warren Reserve, and all but one of these records was listed as confirmed, or probable breeding. A peak count of 80 pairs was recorded at RSPB Minsmere Reserve in 2004.

SBIS

1.5.98 Desk-study records provided by SBIS reported no records of water rail within 2km of the site.

NGL

1.5.99 NGL recorded water rail as present on the EDF Energy estate in every year of the last 14 years of bird surveys. A table summarising the results is shown in **Table 1.72**.

Table 1.71: A summary of NGL water rail records

Year	No. breeding territories (April-June)	Wetland bird survey peak count (Jan-Mar and Sept –Dec)
2018	4	3
2017	2	2
2016	6	3
2015	4	4
2014	4	2
2013	3	4
2012	Unknown	2
2011	1	4
2010-11	3	Unknown
2009-10	0	1
2008-09	8	3
2007-08	6	2

Year	No. breeding territories (April-June)	Wetland bird survey peak count (Jan-Mar and Sept –Dec)
2018	4	3
2017	2	2
2016	6	3
2015	4	4
2006-07	3	1
2005-06	1	2
2004-05	8	3

ii. Secondary Data

1.5.100 During the April to July 2007 bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), two breeding water rail were present on the EDF Energy estate. However, Wood Group acknowledges that this may be an under representation due to the difficulty of surveying for water rail.

1.5.101 The Wood Group 2010 breeding bird survey (**Report 14A7.3-5, Annex 14A7.3**) revealed the presence of one water rail breeding territory.

iii. Primary Data

1.5.102 Water rail was recorded by Arcadis during waterfowl surveys in 2014-2015, Winter bird surveys in 2014-2015, and wetland bird surveys in 2018-2019. Water rail was most often recorded during the waterfowl surveys, with three observations. Water rail was also recorded within the site wintering bird surveys, with two observations recorded. The results of these surveys are summarised in **Table 1.73**.

Table 1.72: A table to summarise the water rail sightings on the EDF Energy estate during the Arcadis bird surveys.

Date	No. birds recorded	Survey	Location (as per definitions set out within Table 1.3 and 4, section 1.2)
04/12/14	4	Waterfowl surveys 2014-15	Area 1
08/01/15	1		Area 3
05/02/15	1		Area 2
04/12/14	4	Site wintering bird surveys 2014-15	Reedbed within Sizewell Marshes SSSI
22/01/15	1		Reedbed within Sizewell Marshes SSSI

NOT PROTECTIVELY MARKED

Date	No. birds recorded	Survey	Location (as per definitions set out within Table 1.3 and 4, section 1.2)
December 2018	1	Wetland bird surveys (2018-19)	Sizewell Marshes SSSI (Compartment B)
	1		Sizewell Marshes SSSI (Compartment C)
	1		Sizewell Marshes SSSI (Compartment D)
	1		Minsmere South Levels (TN 1)
	1		Aldhurst Farm

1.5.103 In summary, water rail was present within the site and the wider area, specifically Sizewell Marshes SSSI during the Summer and Winter, and are known to breed within survey area. Between one and eight territories were recorded each year. Therefore, it is concluded that water rail both breed and over winter within the site.

k) **Stone-curlew**

1.5.104 Stone-curlew is a Schedule 1 species, as listed in the W&CA (Ref. 1.1) and regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to its breeding population decline and breeding localisation (Ref. 1.2). Stone-curlew was only recorded as an incidental sighting, this is detailed below.

i. **Desk-study**

Suffolk Birds

1.5.105 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe stone-curlew as, locally a fairly common Summer visitor which occasionally overwinters. The 2017 Suffolk Bird Report (Ref. 1.14) states that two birds were recorded at RSPB Minsmere Reserve.

RSPB

1.5.106 The RSPB reported 15 records of stone-curlew within 5km of the existing Sizewell power station complex. All records were of confirmed, or probable breeding. All records were associated with RSPB Minsmere Reserve. Peak counts were of nine pairs in 2012 and 2013.

SBIS

- 1.5.107 SBIS reported four records of stone-curlew within 2km of the site. These records were from RSPB Minsmere Reserve, Westleton Walks and Eastbridge.

NGL

- 1.5.108 NGL have not recorded stone-curlew on the site.

ii. Secondary data

- 1.5.109 Wood Group did not report stone-curlew during their surveys.

iii. Primary data

- 1.5.110 During the Arcadis marsh harrier surveys undertaken on 29 April 2015 a single stone-curlew was observed resting on Minsmere South levels.

I) Oystercatcher

- 1.5.111 Oystercatcher is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This is due to its European conservation status being listed as vulnerable, its wintering localisation with 50-60% of the UK population found in ten or less sites, the fact that the UK possesses 30-40% of the European breeding population and the UK possessing 30-40% of the European on-breeding population. (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.5.112 The Suffolk Birds reports (Ref. 1.9 - 1.14) describes oystercatcher as a common but declining resident, very common Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) states that breeding pairs were reported at RSPB Minsmere Reserve, Dingle Marshes, Hazlewood Marshes and Orfordness,

RSPB

- 1.5.113 The RSPB reported 21 records of oystercatcher within 5km of the existing Sizewell power station complex. All but two of these records were of confirmed, or probable breeding and records were located at both RSPB Minsmere Reserve and RSPB North Warren Reserve. Peak counts comprised eight pairs at RSPB Minsmere Reserve in both 2005 and 2006,

and two pairs at RSPB North Warren Reserve in 2013, 2012, 2010, 2006, 2005, 2004 and 2003.

SBIS

1.5.114 SBIS did not report any oystercatcher records within 2km of the site.

NGL

1.5.115 NGL have recorded oystercatcher as breeding on the site only once in the last 14 years, with a single breeding pair in 2009. However, oystercatcher have been recorded as part of the Winter farmland bird surveys and the wetland bird surveys. A summary of these records are found in **Table 1.74**.

Table 1.73: A summary of NGL oystercatcher records.

Year	Wetland bird survey peak count (Jan-Mar and Sept –Dec)	Farmland bird survey peak count (Jan-Mar and Sept –Dec)
2018	0	Unknown
2017	2	Unknown
2016	2	Unknown
2015	2	1
2014	2	0
2013	0	0
2012	1	0
2011	0	1
2010	0	0
2009	0	Unknown
2008-09	2	Unknown
2007-08	0	0
2006-07	1	Unknown
2005-06	2	0
2004-05	2	0

ii. Secondary data

1.5.116 Wood Group recorded oystercatcher during the arable reversion breeding bird survey carried out in 2012 (refer to **Report 14A7.3-8, Annex 14A7.3**). A breeding territory was recorded in the north of the survey area and birds were recorded as present in the south of the survey area, although no breeding was noted.

1.5.117 Oystercatcher was regularly recorded regularly during the coastal Wood Group surveys, however, no specific locations have been provided.

iii. Primary data

1.5.118 Oystercatcher was recorded during the third survey visit of the 2014 breeding bird survey, with a single bird recorded flying over arable fields to the north of Ash Wood. This was the only record of oystercatcher during the 2014 breeding bird survey. Given the lack of suitable breeding habitat, it is considered that this species is unlikely to be present as a breeding species within the site.

1.5.119 Oystercatcher was recorded on a total of 25 occasions during the little tern survey 2013. Three breeding pairs were recorded at VP 10 (Orford Ness) and two breeding pairs at VP 11 (Orford Ness), in May. The peak count of non-breeding birds was five birds which were recorded commuting along the coast from VP 15 (Dunwich Beach) in June 2013.

1.5.120 During the second Winter red-throated diver survey 2013-2014 (refer to **Report 14A7.4-2, Annex 14A7.4**), oystercatcher was recorded on two occasions, with a peak count of two birds seen commuting from VP 12 (Orford Ness) in March 2014.

1.5.121 Oystercatcher was also recorded during the cormorant survey 2014-2015 on seven occasions. All counts were of single birds, and all but one record was of birds commuting along the coast. The record of a bird on the shore was of a single bird foraging/roosting on the beach at VP 15 (Dunwich Beach).

1.5.122 In summary, oystercatcher have been recorded commuting along the coast within the survey area during the non-breeding season and the breeding season. Individual birds have been recorded within the survey area during the breeding season within the arable fields at the northern end of the EDF Energy estate.

m) Golden plover

1.5.123 Golden plover is regarded as being of low conservation importance in the UK following its inclusion on the Green List of BoCC (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.5.124 The Suffolk Birds reports (Ref. 1.9 - 1.14) describes golden plover as a common Winter visitor and passage migrant. The 2017 Suffolk Bird Report

(Ref. 1.14) states that counts of 300 or more were widespread with the largest flocks at sites including Alde Esuary, Orfordness, Boyton Marshes.

RSPB

- 1.5.125 The RSPB reported a single record for golden plover within 5km of the existing Sizewell power station complex from 2003-2013. Twenty birds were recorded at RSPB North Warren Reserve in 2003.

SBIS

- 1.5.126 SBIS reported no records of golden plover within 2km of the site.

NGL

- 1.5.127 NGL have not recorded the presence of golden plover on the EDF Energy estate in the last 14 years of bird monitoring surveys.

ii. Secondary data

- 1.5.128 During the seabird survey undertaken by Wood Group in 2011-2012 (**Report 14A7.3-3, Annex 14A7.3**), golden plover was recorded on two occasions. The first record was of ten birds resting on the beach on Orford Ness in July 2011. The second record was of three birds commuting past Orford Ness in August 2011.

iii. Primary data

- 1.5.129 Golden plover was not recorded using the site, or as part of the seabird surveys undertaken by Arcadis.
- 1.5.130 In summary, golden plover was not observed within the site and the wider area, golden plover was only recorded during coastal surveys to the south of the site.

n) Grey plover

- 1.5.131 Grey plover is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This is due to its wintering localisation with 60-70% of the UK non-breeding population found in ten or fewer sites, and the UK possessing 20-30% of the European non-breeding population (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.5.132 The Suffolk Birds reports (Ref. 1.9 - 1.14) describes grey plover as a common Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) states that counts of at least 50 were reported at Hazlewood Marshes, Orfordness and Havergate Island.

RSPB

- 1.5.133 The RSPB reported no records of grey plover within 5km of the existing Sizewell power station complex.

SBIS

- 1.5.134 SBIS reported no records of grey plover within 2km of the site.

NGL

- 1.5.135 NGL have not recorded the presence of grey plover on the EDF Energy estate in the last 14 years.

ii. Secondary data

- 1.5.136 The Wood Group (2011-12) seabird survey (refer to **Report 14A7.3-3, Annex 14A7.3**) recorded three records of grey plover, with a peak count of two birds recorded foraging/resting from VP 4 (Sizewell Hall) in September 2011.

iii. Primary data

- 1.5.137 The 2013 little tern survey (refer to **Report 14A7.4-3, Annex 14A7.4**) recorded a single sighting of grey plover, with three birds observed commuting from VP 11 (Orford Ness) on 20 August 2013.
- 1.5.138 The cormorant survey 2014-2015 recorded a single sighting of grey plover, with 14 birds observed resting on the beach from VP 10 (Orford Ness) on 20 January 2015.
- 1.5.139 In summary, grey plover was only recorded to the south of the site commuting along the coast.

o) Little ringed plover

- 1.5.140 Little ringed plover is listed on Schedule 1 of the W&CA (Ref. 1.1) and is listed on the UK Green List of BoCC (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.5.141 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe little ringed plover as an uncommon Summer visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) states that eight pairs have bred in the county, however none of these were within 20km of Sizewell.

RSPB

- 1.5.142 The RSPB reported two records of little ringed plover within 5km of the existing Sizewell power station complex. Records were from 2005 and 2008, and all records were of probable or confirmed breeding pairs at RSPB Minsmere Reserve.

SBIS

- 1.5.143 SBIS reported two records of little ringed plover within 2km of the proposed site, with both records in 2012. Both of these records again related to RSPB Minsmere Reserve.

NGL

- 1.5.144 NGL have not recorded the presence of little ringed plover on the EDF Energy estate in the last 14 years.

ii. Secondary data

- 1.5.145 Wood Group did not record little ringed plover during any of their bird surveys.

iii. Primary data

- 1.5.146 Little ringed plover was recorded on a single occasion during the Arcadis bird surveys, with a breeding pair recorded during the little tern and sandwich tern survey on 29 May 2013. These birds were both located on Orford Ness.

- 1.5.147 In summary, little ringed plover was only recorded during intertidal surveys away from the site, at Orford Ness to the south.

p) Ringed plover

- 1.5.148 Ringed plover is regarded as being of medium conservation importance following its inclusion on the Red List of BoCC (Ref. 1.2). This is due to a moderate decline in the UK breeding population of 37% in the last 25 years,

a decline of 52% in the UK non-breeding population in the last 25 years, a longer-term decline of 42% in the UK non-breeding population since the first BoCC review and the UK possessing 50-60% of the European non-breeding population (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.5.149 The Suffolk Birds reports (Ref. 1.9 - 1.14) describes ringed plover as a declining resident, Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at RSPB Minsmere Reserve (peak count of four), Orfordness (peak count of 79) and Southwold Marshes (peak count of 35). Breeding was confirmed at Minsmere beach with three pairs fledging three young. Additionally, three pairs bred at Dingle Marshes.

RSPB

- 1.5.150 The RSPB reported 17 records of ringed plover within 5km of the existing Sizewell power station complex. All but three records were of either confirmed or probable breeding, with a peak count of six pairs at RSPB Minsmere Reserve in 2004 and three pairs at RSPB North Warren Reserve in 2003.

SBIS

- 1.5.151 Desk-study records provided by SBIS reported five records of ringed plover within 2km of the site within the last ten years. These records were located at RSPB Minsmere Reserve, Thorpeness and Aldringham Walks and Common.

NGL

- 1.5.152 NGL have recorded ringed plover as a breeding species twice in the past 14 years on the EDF Energy estate. A pair raised three chicks on Sizewell Beach in 2006 and a pair raised three chicks in 2015.

ii. Secondary data

- 1.5.153 Wood Group recorded ringed plover as part of the intertidal and inshore marine surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), with four records in July and August 2007. The records comprised displaying birds, and possible breeding on Sizewell Beach.

- 1.5.154 During the August 2007 to March 2008 Wood Group bird surveys (refer to **Report 14A7.3-1, Annex 14A7.3**) ringed plover was recorded on two survey visits. The birds were observed displaying to the north of the survey area, adjacent to Goose Hill.
- 1.5.155 During the 2011-2012 seabird survey (refer to **Report 14A7.3-3, Annex 14A7.3**), Wood Group regularly reported ringed plover, either commuting or loafing on the beach, with a peak count of 30 birds located at VP 10 (Orford Ness) during March 2012.

iii. **Primary data**

- 1.5.156 Ringed plover was recorded during the little tern survey 2013 (refer to **Report 14A7.4-3, Annex 14A7.4**), with five records of ringed plover. Two of these records were of nesting ringed plover from VP 10 (Orford Ness). The peak count of non-breeding birds was a flock of 20 birds recorded roosting on the beach at VP 10 (Orford Ness) on 20 August 2013.
- 1.5.157 The second Winter red-throated diver survey 2013-2014 (refer to **Report 14A7.4-2, Annex 14A7.4**) recorded ringed plover on two occasions, with both records on 17 October 2013. These records were located at VP 7 and VP 8 on the beach adjacent to Aldeburgh.
- 1.5.158 There were also two records of ringed plover during the cormorant survey 2014-2015, with both records located on Orford Ness. A peak count of 15 birds was recorded in October 2014.
- 1.5.159 In summary, ringed plover have been observed within the survey area commuting along the coast in small numbers. One record of breeding display behaviour was recorded adjacent to the coast.

q) **Whimbrel**

- 1.5.160 Whimbrel is listed on Schedule 1 of the W&CA (Ref. 1.1). Whimbrel is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to severe breeding decline and severe breeding range decline over 25 years (Ref. 1.2). Whimbrel was only recorded as an incidental sighting, this is detailed below.
- 1.5.161 During the Wood Group seabird surveys (refer to **Report 14A7.3-3, Annex 14A7.3**) seven records of whimbrel were recorded, with a peak count of two birds recorded during July 2011. Whimbrel was recorded in April, July, August, September 2011 and April 2012. During an Arcadis marsh harrier surveys undertaken on 8 September 2015 a whimbrel was observed foraging and later commuting over Minsmere South Levels.

1.5.162 The Suffolk Birds reports (Ref. 1.9 - 1.14) describes whimbrel as a fairly common passage migrant, occasionally overwinters. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at RSPB Minsmere Reserve (peak count of 20), Walberswick (peak count of 15) and Orfordness (peak count of 39).

r) Curlew

1.5.163 Curlew is regarded as being of high conservation importance following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a moderate decline of 49% in the UK breeding population in the last 25 years, a longer-term decrease of 62% in the UK breeding population since the first BoCC review, its European status being listed as vulnerable and the fact that the UK possesses 20-30% of the European breeding population (Ref. 1.2). The Suffolk BAP identified curlew as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

1.5.164 The Suffolk Birds reports (Ref. 1.9 - 1.14) describes curlew as a common Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at Alde/Ore Estuary, Hazlewood Marshes, Boyton Marshes and Hollesley Marshes.

RSPB

1.5.165 RSPB reported three records of curlew within 5km of the existing Sizewell power station complex. These records were all located at RSPB North Warren Reserve. All records were of wintering birds with a peak count of 42 birds recorded in 2003.

SBIS

1.5.166 SBIS reported seven records of curlew within 2km of the site. These records were located at Thorpeness, RSPB Minsmere Reserve and Aldringham Walks and Common and Thorpeness Golf Course.

NGL

1.5.167 NGL have not recorded curlew as a breeding species on the EDF Energy estate. Curlew have frequently been recorded during the BTO WeBS counts and the Winter farmland bird counts, with a summary of these records shown below in **Table 1.75**.

Table 1.74: A summary of NGL Winter curlew sightings.

Year	Wetland bird survey peak count (Jan-Mar and Sept –Dec)	Farmland bird survey peak count (Jan-Mar and Sept –Dec)
2018	1	4
2017	3	2
2016	1	
2015	2	1
2014	1	0
2013	3	2
2012	1	0
2011	1	0
2010	0	1
2009	0	Unknown
2008-09	1	Unknown
2007-08	0	0
2006-07	0	Unknown
2005-06	17	37
2004-05	25	46

ii. Secondary data

1.5.168 Wood Group did not report curlew as using the EDF Energy estate during any bird surveys; however, curlew was frequently recorded commuting along the coast during the coastal surveys (refer to **Reports 14A7.3-1, 14A7.3-2 and 14A7.3-2 in Annex 14A7.3**).

iii. Primary data

1.5.169 Curlew was recorded during the 2014-2015 wintering bird surveys. This record was of a lone bird foraging in the field adjacent to the Round House in March 2015.

1.5.170 Curlew was also recorded as part of the 2014-2015 wintering waterfowl survey with two records of birds occurring on the Minsmere South Levels. The peak count of curlew was four birds recorded in March 2015.

1.5.171 Two sightings of a single curlew were also recorded within Minsmere South Levels during the 2018-2019 winter wetland bird surveys.

1.5.172 Curlew was recorded twice during the first Winter red-throated diver survey 2012-2013 (refer to **Report 14A7.4-1, Annex 14A7.4**). The peak count

was of two birds recorded commuting from VP 10 (Orford Ness) on 22 January 2013.

- 1.5.173 Curlew was recorded on a total of two occasions during the little tern survey 2013 (refer to **Report 14A7.4-3, Annex 14A7.4**). The peak count was of five birds calling/foraging on the saltmarsh from VP 10 (Orford Ness) May.
- 1.5.174 The second Winter red-throated diver survey 2013-2014 (refer to **Report 14A7.4-2, Annex 14A7.4**) recorded curlew on five occasions with a peak count of five birds recorded commuting from VP 14 (Dunwich Cliff) in March 2014.
- 1.5.175 Curlew was recorded during the cormorant survey 2014-2015 on six occasions. The peak count was of three birds commuting along the coast from VP 15 (Dunwich Beach) in February 2015.
- 1.5.176 In summary, curlew have been recorded within the survey area only during the Winter. Records were located in the arable fields at the northern end of the EDF Energy estate, Minsmere South Levels and commuting birds along the coast.

s) **Bar-tailed godwit**

- 1.5.177 Bar-tailed godwit is regarded as being of medium conservation importance following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to its wintering localisation with 80-90% of the UK non-breeding population located in ten or fewer site, and the UK possessing 30-40% of the European non-breeding population (Ref. 1.2).

i. **Desk-study**

Suffolk Birds

- 1.5.178 The Suffolk Birds reports (Ref. 1.9 - 1.14) describes bar-tailed godwit as a fairly common passage migrant and locally common Winter visitor. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported that Spring passage numbers included 100 at RSPB Minsmere Reserve, 50 at Hazlewood Marshes and 163 on Orfordness.

RSPB

- 1.5.179 The RSPB reported a single record of bar-tailed godwit within 5km of the existing Sizewell power station complex. This record was of a single bird recorded at RSPB North Warren Reserve in 2003.

SBIS

- 1.5.180 SBIS reported no records of bar-tailed godwit within 2km of the site.

NGL

- 1.5.181 NGL have only recorded bar-tailed godwit as present on the EDF Energy estate in one of the last 14 years, with five birds were present on Retsom's field in April 2009.

ii. Secondary data

- 1.5.182 Wood Group recorded bar-tailed godwit as part of the intertidal and inshore marine surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), with a single record of two birds commuting along the coast in July 2007.
- 1.5.183 The Wood Group 2011-2012 seabird survey (refer to **Report 14A7.3-3, Annex 14A7.3**) recorded bar-tailed godwit on three occasions commuting along the coast, with a peak count of four birds located at VP 6 (Thorpeness) during September 2011.

iii. Primary data

- 1.5.184 Bar-tailed godwit was not recorded as part of the Arcadis bird surveys.
- 1.5.185 In summary, bar-tailed godwit was recorded on a small number of occasions in the survey area, commuting along the coast during the Winter.

t) Turnstone

- 1.5.186 Turnstone (*Arenaria interpres*) is regarded as being of medium conservation importance following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to a decline in the UK non-breeding population of 41% in the last 25 years and the UK possessing 20-30% of the European non-breeding population (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.5.187 The Suffolk Birds reports (Ref. 1.9 - 1.14) describes turnstone as a common Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at Alde/Ore Estuary and Hazlewood Marshes.

RSPB

- 1.5.188 The RSPB reported two records of turnstone within 5km of the existing Sizewell power station complex. Both of these records were of birds located at RSPB North Warren Reserve in 2003, with a peak count of 12 birds in February 2003.

SBIS

- 1.5.189 SBIS reported five records of turnstone within 2km of the site, four of which were within the last ten years. These records were located at RSPB Minsmere Reserve, Thorpeness and Aldringham Walks and Common.

NGL

- 1.5.190 NGL have not recorded the presence of turnstone on the EDF Energy estate in the last 14 years.

ii. Secondary data

- 1.5.191 Wood Group recorded a single turnstone as part of the intertidal and inshore marine surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), with a single bird recorded commuting along the coast in July 2007.
- 1.5.192 During the 2007-2008 bird surveys (refer to **Report 14A7.3-1, Annex 14A7.3**) turnstone was recorded on multiple occasions, with one to two birds noted loafing on the rigs associated with the Sizewell A and B power stations in December 2007 and January 2008, and a total passage of 14 birds during November 2007 and March 2008.
- 1.5.193 The Wood Group 2011-2012 seabird survey (refer to **Report 14A7.3-3, Annex 14A7.3**) reported turnstone on 19 survey visits, with a peak count of 100 birds recorded.

iii. Primary data

- 1.5.194 The first Winter red-throated diver survey 2012-2013 (refer to **Report 14A7.4-1, Annex 14A7.4**) recorded turnstone on 25 occasions, with peak counts of ten birds recorded on five occasions.
- 1.5.195 The second Winter red-throated diver survey 2013-2014 (refer to **Report 14A7.4-2, Annex 14A7.4**) recorded turnstone on 17 occasions, with a peak count of 40 birds in October 2013 located at VP 8 (Aldeburgh).
- 1.5.196 There were two records of turnstone during the cormorant survey 2014-2015, with both records located at Orford Ness, and a peak count of 15 birds recorded in November 2014.

1.5.197 In summary, turnstone was recorded infrequently along the coast and Sizewell Beach of the survey area during the Winter.

u) **Knot**

1.5.198 Knot is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to its wintering localisation with 90-100% of the UK non-breeding population found in ten or fewer sites, and the UK possessing 40-50% of the European non-breeding population (Ref. 1.2).

i. **Desk-study**

Suffolk Birds

1.5.199 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe knot as a locally common Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at Alde/Ore Estuary and Hazlewood Marshes.

RSPB

1.5.200 The RSPB reported no records of knot within 5km of the existing Sizewell power station complex.

SBIS

1.5.201 SBIS reported no records of knot within 2km of the site.

NGL

1.5.202 NGL have not recorded the presence of knot on the EDF Energy estate in the last 14 years.

ii. **Secondary data**

1.5.203 The Wood Group seabird survey recorded four records of knot, with a peak count of three birds recorded commuting from VP 12 (Orford Ness) in September 2011.

iii. **Primary data**

1.5.204 Knot was not recorded during any Arcadis bird surveys.

1.5.205 In summary, knot was not recorded within the survey area and was only observed commuting along the coast in locations to the south of the site.

v) Curlew sandpiper

1.5.206 Curlew sandpiper is listed on Schedule 1 of the W&CA (Ref. 1.1). Curlew sandpiper is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2) as this species has been described as Vulnerable on the European Red List (Ref. 1.2).

i. Desk-study

Suffolk birds

1.5.207 The Suffolk Birds reports (Ref. 1.9 - 1.14) described curlew sandpiper as an uncommon passage migrant which has overwintered. The 2017 Suffolk Bird Report (Ref. 1.14) states that a small number of sightings were reported at RSPB Minsmere Reserve, Walberswick and Southwold.

RSPB

1.5.208 RSPB provided no records of curlew sandpiper within 5km of the existing Sizewell power station complex.

SBIS

1.5.209 SBIS reported five records of curlew sandpiper within 2km of the site. These records were from RSPB Minsmere Reserve, Thorpeness and “Sizewell”.

BTO

1.5.210 For the Minsmere (not including sea) BTO WeBS count zone, the annual five-year mean of peaks was one between 2008 and 2013 for curlew sandpiper. Curlew sandpiper was not recorded within the Minsmere offshore count zone.

NGL

1.5.211 The NGL did not record curlew sandpiper within the EDF Energy estate.

ii. Secondary data

1.5.212 A single curlew sandpiper was observed commuting during the Wood Group 2011-2012 seabird survey (refer to **Report 14A7.3-3** in **Annex 14A7.3**). The sighting was from VP 12, Orford Ness.

iii. Primary data

1.5.213 Curlew sandpiper was not recorded during any Arcadis bird survey.

1.5.214 In summary, curlew sandpiper was sporadically recorded within the survey area, with just one observation along the coast.

w) Sanderling

1.5.215 Sanderling is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2) due to its non-breeding localisation, with 60-70% of the population found in ten or fewer sites (Ref. 1.2).

i. Desk-study

Suffolk birds

1.5.216 The Suffolk Birds reports (Ref. 1.9 - 1.14) described sanderling as a locally common Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at a few coastal sites from Slaughden northwards, however specific locations were not stated within the report.

RSPB

1.5.217 RSPB provided no records of sanderling within 5km of the existing Sizewell power station complex.

SBIS

1.5.218 The SBIS reported six records of sanderling within 2km of the site within the last ten years, records were from RSPB Minsmere Reserve, Thorpeness, Aldringham Walks and Common and "Sizewell".

BTO

1.5.219 For the Minsmere (not including sea) BTO WeBS count zone, the annual five-year mean of peaks was one between 2008 and 2013 for sanderling. Sanderling was not recorded within the Minsmere offshore count zone.

NGL

1.5.220 The NGL did not record sanderling within the EDF Energy estate.

ii. Secondary data

- 1.5.221 Sanderling was recorded during coastal surveys in 2007 in interim report one (refer to **Report 14A7.3-2, Annex 14A7.3**). A total of two sanderling were observed commuting parallel to the coast
- 1.5.222 A single sanderling was observed flying along the Sizewell Beach during the intertidal surveys in 2008, as reported in the second interim report (refer to **Report 14A7.3-1, Annex 14A7.3**).
- 1.5.223 A single sanderling was observed on the Sizewell Beach during the seabird surveys in 2011-2012 (refer to **Report 14A7.3-3, Annex 14A7.3**), in addition a total of ten sanderling were observed commuting from VPs 4, 5, 9 and 12 during March 2011 to April 2012.

iii. Primary data

- 1.5.224 A record of five sanderling were observed from VP 4 during the Arcadis cormorant coastal surveys undertaken in 2014-2015.
- 1.5.225 In summary, sanderling was not observed within the survey area, but was observed within the wider coastline.

x) Purple sandpiper

- 1.5.226 Purple sandpiper is listed on Schedule 1 of the W&CA (Ref. 1.1). Purple sandpiper is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to the following factors: a moderate decline of the UK breeding population of 43% in the last 25 years; a moderate decline in the UK non-breeding population of 49% since the first BoCC review; a reduction in its breeding range of 33% in the last 25 years; and its breeding rarity, with only a single pair present in the UK (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.5.227 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe purple sandpiper as a fairly common Winter visitor and scarce passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at Slaughden, however the most regular site for this species is Ness Point, Lowestoft.

RSPB

- 1.5.228 RSPB reported no records of purple sandpiper within 5km of the existing Sizewell power station complex.

SBIS

- 1.5.229 Desk-study records provided by SBIS reported a total of five records of purple sandpiper within 2km of the site. These records were located at RSPB Minsmere Reserve, Thorpeness, Aldringham Common and Walks and “Sizewell”.

NGL

- 1.5.230 NGL have not recorded the presence of purple sandpiper on the EDF Energy estate over the last 14 years of survey work.

ii. Secondary data

- 1.5.231 Wood Group did not record purple sandpiper during any of the coastal surveys undertaken.

iii. Primary data

- 1.5.232 Purple sandpiper was recorded on two occasions during the Arcadis cormorant surveys in early 2015. Both of these records relate to observation from VP 9 (south of the site) of single birds foraging; one record in January 2015 and the other in February 2015.

- 1.5.233 In summary, records of purple sandpiper in this area are very rare, with none having been recorded recently in the vicinity of the site.

y) Red-necked phalarope

- 1.5.234 Red-necked phalarope (*Phalaropus lobatus*) is listed on Schedule 1 of the W&CA (Ref. 1.1). Red-necked phalarope is regarded as being of medium conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to historical decline and it is a breeding rarity in the UK (Ref. 1.2). Red-necked phalarope was only recorded as an incidental sighting, this is detailed below.

- 1.5.235 During the Arcadis marsh harrier survey undertaken on 21 April 2015, a single bird observed foraging on Minsmere South Levels.

- 1.5.236 The 2017 Suffolk Bird Report (Ref. 1.14) describe red-necked phalarope as a rare passage migrant. The report states that individual sightings were reported at RSPB Minsmere Reserve, Walberswick and Orfordness.

z) Common sandpiper

- 1.5.237 Common sandpiper is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC

(Ref. 1.2). This inclusion is due to a moderate decline of 45% in the UK breeding population in the last 25 years and a longer-term decline of 40% in the UK breeding population since the first BoCC review (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.5.238 The Suffolk Birds reports (Ref. 1.9 - 1.14) describes common sandpiper as a common passage migrant, occasionally overwintering. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at RSPB Minsmere Reserve, Aldeburgh and Southwold.

RSPB

- 1.5.239 The RSPB reported no records of common sandpiper within 5km of the existing Sizewell power station complex.

SBIS

- 1.5.240 SBIS reported no records of common sandpiper within 2km of the site.

NGL

- 1.5.241 NGL have not recorded the presence of common sandpiper on the EDF Energy estate in the last 14 years.

ii. Secondary data

- 1.5.242 Wood Group did not record the presence of common sandpiper during any of their bird surveys.

iii. Primary data

- 1.5.243 Common sandpiper was recorded as part of the 2013 little tern survey (refer to **Report 14A7.4-3, Annex 14A7.4**), with a single bird recorded foraging on the beach from VP 10 (Orford Ness) on 20 August 2013.
- 1.5.244 This was the only record of common sandpiper during the Arcadis bird surveys.
- 1.5.245 In summary, common sandpiper was not recorded within the survey area, but was recorded along the coast to the south of the site.

aa) Green sandpiper

- 1.5.246 Green sandpiper is listed on Schedule 1 of the W&CA (Ref. 1.1). Green sandpiper is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This is due to its breeding rarity, with fewer than 300 pairs found in the UK (Ref. 1.2). The majority of birds seen in the UK are on passage.

i. Desk-study

Suffolk Birds

- 1.5.247 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe green sandpiper as a fairly common passage migrant, with small numbers overwintering. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at RSPB Minsmere Reserve, Aldeburgh, Snape Marshes and Hollesley Marshes.

RSPB

- 1.5.248 The RSPB reported no records of green sandpiper within 5km of the existing Sizewell power station complex.

SBIS

- 1.5.249 Desk-study records provided by SBIS reported nine records of green sandpiper between 1994 and 2012 within 2km of the proposed main site, with eight records in the last ten years. These records were located at Minsmere RPSB Reserve, Aldringham Common and Walks, Thorpeness, Leiston, Eastbridge and “Sizewell”.

BTO WeBS

- 1.5.250 The five-year mean peak count for the Minsmere (not including sea) count zone for green sandpiper is three. Green sandpiper was not recorded in the Minsmere offshore count zone.

NGL

- 1.5.251 NGL had not recorded the presence of green sandpiper on the EDF Energy estate up until 2018. One record of green sandpiper was recorded during the October farmland survey. Two records of green sandpiper were recorded during the 2017 WeBS count.

ii. Secondary data

1.5.252 Wood Group's first interim bird report recorded green sandpiper as feeding and commuting over the survey area in 2007; however, no information on numbers or the location of these records are included. This was the only record of green sandpiper during the Wood Group bird surveys.

iii. Primary Data

1.5.253 Green sandpiper was recorded on two occasions during the 2015 arable harrier survey, with both records occurring on a small pond north of Ash Wood from VPE. On 25 August 2015, a single bird was seen foraging before flying north, and on 27 August 2015 another solitary bird was recorded foraging. Both of these records are in relation to birds on passage migration.

1.5.254 In summary, green sandpiper have been recorded within the survey area only rarely over recent years, and mostly at locations away from the Main Development Area.

bb) Spotted redshank

1.5.255 Spotted redshank is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to its wintering rarity with the UK non-breeding population consisting of only 98 birds (Ref. 1.2).

i. Desk-study**Suffolk Birds**

1.5.256 The Suffolk Birds reports (Ref. 1.9 - 1.14) describes spotted redshank as a fairly common passage migrant, with a few birds overwintering. The 2017 Suffolk Bird Report (Ref. 1.14) states that records were concentrated at the north-east of the county, including RSPB Minsmere Reserve, Dingle Marshes, Hazlewood Marshes and Orfordness.

RSPB

1.5.257 The RSPB reported no records of spotted redshank within 5km of Sizewell power station complex.

SBIS

1.5.258 Desk-study records provided by SBIS revealed no records of spotted redshank within 2km of the site.

BTO

- 1.5.259 The individual count sector data from the BTO WeBS data for the Minsmere (not including sea), supported an annual five-year mean peak of 18 spotted redshank. High counts of spotted redshank occurred during the breeding period (specifically: April and June). The BTO WeBS count zone for Minsmere did not hold records of spotted redshank.

NGL

- 1.5.260 NGL have not recorded the presence of spotted redshank on the EDF Energy estate in the up until 2018 of bird surveys.

ii. Secondary data

- 1.5.261 Spotted redshank was not recorded during the surveys carried out by Wood Group.

iii. Primary data

- 1.5.262 Spotted redshank was not recorded using the site, or as part of other surveys undertaken by Arcadis between October 2012 and October 2015.

- 1.5.263 In summary, spotted redshank was rarely observed within the survey area, with a small number of records from Minsmere South Levels. This species is likely to only be observed within the Main Development and the wider area in low numbers during passage and therefore is unlikely to breed within the site.

cc) Greenshank

- 1.5.264 Greenshank is listed on Schedule 1 of the W&CA (Ref. 1.1). Greenshank is considered to be of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to its breeding localisation, with 70-80% of the UK breeding population found in ten or fewer sites (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.5.265 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe greenshank as a common passage migrant with a few birds overwintering. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were recorded at RSPB North Warren Reserve, Snape Warren and Hazlewood Marshes.

RSPB

- 1.5.266 The RSPB reported no records of greenshank within 5km of Sizewell power station complex.

SBIS

- 1.5.267 Desk-study records provided by SBIS reported eight records of greenshank within 2km of the site. These records were located at RSPB Minsmere Reserve, Thorpeness, Aldringham Common and Walks/Thorpeness Golf Course, and Sizewell Beach.

BTO

- 1.5.268 The individual count sector data from the BTO WeBS counts for the Minsmere (not including sea) count zone supported an annual five-year mean peak of seven birds. High counts of greenshank occurred during the breeding period (with the majority of birds recorded July and August). The BTO WeBS count area for Minsmere (including the sea) did not hold records of greenshank.

NGL

- 1.5.269 NGL have not recorded the presence of greenshank on the EDF Energy estate up until 2018.

ii. Secondary data

- 1.5.270 Throughout the Wood Group September 2007 to March 2008 intertidal and marine surveys, greenshank was recorded on one occasion (17 July 2007). This record was of a single bird commuting over the sea (refer to **Report 14A7.3-1, Annex 14A7.3**).

iii. Primary data

- 1.5.271 Greenshank was observed as a secondary species during the arable marsh harrier surveys undertaken in 2015; they were observed from VPA (peak count of one bird) and VPE (peak count of five birds), with both VPs located within the arable fields at the northern end of the EDF Energy estate (refer to **Figure 14A7.7**). Greenshank was not recorded during other surveys undertaken by Arcadis between 2012 and 2015.
- 1.5.272 In summary, greenshank have been recorded only very rarely within the survey area, but have been recorded in the arable fields at the northern end of the EDF Energy estate.

dd) Woodcock

1.5.273 Woodcock is regarded as being of high conservation importance for the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to the a decline of 29% in the UK breeding population in the last 25 years, a decline of 31% in the breeding range in the last 25 years and a decline of 52% in the UK breeding range since the first BoCC review (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.5.274 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe woodcock as a declining resident, fairly common Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings of individuals were reported, however specific locations were not stated within the report.

RSPB

1.5.275 The RSPB reported eight records of woodcock within 5km of the existing Sizewell power station complex. These records occurred at both RSPB Minsmere Reserve and RSPB North Warren Reserve and five of these records related to either confirmed or probable breeding. Peak breeding counts of woodcock were two displaying males at RSPB North Warren Reserve in 2006, and a record of displaying birds at RSPB Minsmere Reserve in 2008, although the number of birds was not reported. Wintering peak counts were six individuals at RSPB North Warren Reserve in 2003 and a single bird at RSPB Minsmere Reserve in 2011.

SBIS

1.5.276 SBIS reported no records of woodcock within 2km of the site.

NGL

1.5.277 NGL have regularly recorded woodcock as present on the EDF Energy estate within the last 14 years during the wetland bird surveys and the wintering farmland bird surveys. A summary of NGL woodcock records is shown in **Table 1.76**.

Table 1.75: A summary of NGL woodcock records.

Year	Wetland bird survey peak count (Jan-Mar and Sept-Dec)	Winter farmland bird survey peak count (Jan-Mar and Sept-Dec)
2004-05	1	0

Year	Wetland bird survey peak count (Jan-Mar and Sept-Dec)	Winter farmland bird survey peak count (Jan-Mar and Sept-Dec)
2005-06	0	1
2006-07	Unknown	Unknown
2007-08	1	0
2008-09	Unknown	Unknown
2009	Unknown	Unknown
2010	5	4
2011	1	2
2012	2	5
2013	1	4
2014	2	0
2015	1	2
2016	2	1
2017	0	2
2018	0	2

ii. Secondary data

1.5.278 Wood Group recorded woodcock regularly during the walkover Winter surveys (refer to **Report 14A7.3-1, Annex 14A7.3**), although information on the number and distribution of these birds were not recorded.

iii. Primary data

1.5.279 Woodcock was recorded during four of the five survey visits during the 2014-2015 wintering bird surveys. These records all occurred in either the wet woodland that fringes the Sizewell Marshes SSSI reedbed or Goose Hill. The peak count of woodcock recorded was four birds during the February 2015 survey visit. Woodcock was also recorded during the waterfowl survey 2014-2015 with a single bird recorded during the Rookyard Pits Woods transect in March 2015. A single woodcock was recorded within Sizewell Marshes SSSI during the wetland bird surveys (2018-2019).

1.5.280 In summary, woodcock was recorded within the survey area during Winter surveys, and the NGL Winter farmland survey area

ee) Snipe

1.5.281 Snipe is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to a long-term reduction of 31% in the UK breeding range since the first BoCC review (Ref. 1.2).

i. Desk-study

1.5.282 The desk-study revealed that snipe form part of the qualifying feature of one designated site within 20km of the site. Sizewell Marshes SSSI supported a historical a breeding population of snipe as part of the assemblage. However, anecdotal evidence from NGL suggests breeding waders have declined and are no longer present as a breeding species within the SSSI.

Suffolk Birds

1.5.283 The Suffolk Birds reports (Ref. 1.9 - 1.14) described snipe as a common Winter visitor and passage migrant. It is considered to probably be extinct as a breeding species. The 2017 Suffolk Bird Report (Ref. 1.14) states that a peak count of 40 was reported at RSPB Minsmere Reserve.

RSPB

1.5.284 The RSPB reported seven records of snipe within 5km of the existing Sizewell power station complex. Four of these records were of probable or confirmed breeding, all located at RSPB Minsmere Reserve, though there have been no records since 2008. Peak counts of five displaying males at RSPB Minsmere Reserve in 2004 and 70 overwintering birds at RSPB North Warren Reserve in 2003 were also reported.

SBIS

1.5.285 SBIS did not report any records of snipe within 2km of the site.

NGL

1.5.286 NGL have recorded snipe as breeding on a single occasion in the last 14 years, with a drumming snipe recorded on a single occasion in Spring 2013. Snipe have regularly been recorded using the site in the Winter during the wetland bird surveys. A summary of NGL Winter snipe records is in **Table 1.77**.

Table 1.76: A summary of NGL Winter snipe sightings.

Year	Wetland bird survey peak count (Jan-Mar and Sept –Dec)	Farmland bird survey peak count (Jan-Mar and Sept–Dec)
2018	24	Unknown
2017	27	Unknown
2016	10	Unknown
2015	16	Unknown
2014	10	0
2013	36	0
2012	16	0
2011	9	0
2010	18	0
2009	18	Unknown
2008-09	21	Unknown
2007-08	11	0
2006-07	3	Unknown
2005-06	20	2
2004-05	39	0

ii. Secondary data

- 1.5.287 Wood Group recorded snipe on two occasions during the arable reversion breeding bird survey in 2012 (refer to **Report 14A7.3-8, Annex 14A7.3**), with both records found at Cow Marsh Hill. These records were of two birds in March 2012 and three birds in April 2012; however, these birds were not thought to be breeding.
- 1.5.288 Non-breeding snipe have been recorded using the EDF Energy estate by Wood Group, although the location and number of these records was not provided.

iii. Primary data

- 1.5.289 Snipe was only recorded during the first breeding survey visit in 2014, with two birds recorded. One bird was recorded in a field to the north of the existing Sizewell power station complex, with another bird recorded flying over the southern boundary of Goose Hill. Although snipe was present during the breeding season, the lack of suitable breeding habitat would indicate that this species is unlikely to be present as a breeding species within the site.

NOT PROTECTIVELY MARKED

- 1.5.290 Snipe was recorded on two occasions during the 2014-2015 Winter bird surveys with both records occurring in the wet grassland on the proposed main platform. The peak count was four birds recorded during the December 2014 survey.
- 1.5.291 Snipe was regularly recorded during the waterfowl survey (2014-2015) and wetland surveys (2018-2019). A summary of snipe records is shown in **Table 1.78**.

Table 1.77: A summary of the snipe records during the waterfowl survey (2014-15) and wetland bird surveys (2018-2019).

Date	Location (as per definitions set out within Table 1.3 and 4, section 1.2)	Number of birds	Survey type
04/12/2014	Area 1	7	Waterfowl survey
08/01/2015	Area 1	2	
05/02/2015	Area 1	3	
05/03/2015	Area 1	3	
27/11/2014	Area 3	1	
18/12/2015	Area 3	3	
08/01/2015	Area 3	6	
19/02/2015	Area 3	11	
03/03/2015	Area 3	7	
11/11/2015	Area 2	2	
04/12/2015	Area 2	18	
08/01/2015	Area 2	14	
05/02/2015	Area 2	13	
05/03/2015	Area 2	38	
December 2018	Sizewell Marshes SSSI (Compartment C)	1	Wetland bird survey
	Sizewell Marshes SSSI (Compartment C)	18	
	Sizewell Marshes SSSI (Compartment D)	11	
	Sizewell Marshes SSSI (Compartment D)	2	
	Minsmere South Levels (TN 1)	5	
	Minsmere South Levels (TN 2)	3	
	Minsmere South Levels (TN 7)	2	

NOT PROTECTIVELY MARKED

Date	Location (as per definitions set out within Table 1.3 and 4, section 1.2)	Number of birds	Survey type
January 2019	Sizewell Marshes SSSI (Compartment C)	4	
	Sizewell Marshes SSSI (Compartment C)	5	
	Sizewell Marshes SSSI (Compartment C)	8	
	Sizewell Marshes SSSI (Compartment C)	1	
	Sizewell Marshes SSSI (Compartment D)	8	
	Sizewell Marshes SSSI (Compartment D)	1	
February 2019	Sizewell Marshes SSSI (Compartment A)	1	
	Sizewell Marshes SSSI (Compartment B)	1	
	Sizewell Marshes SSSI (Compartment C)	1	
	Sizewell Marshes SSSI (Compartment C)	4	
	Sizewell Marshes SSSI (Compartment C)	1	
	Sizewell Marshes SSSI (Compartment C)	3	
	Sizewell Marshes SSSI (Compartment C)	2	
	Sizewell Marshes SSSI (Compartment D)	1	
	Minsmere South Levels (TN 8)	1	

1.5.292 In summary, snipe was recorded within the survey area during the Winter and the breeding season. During the Winter, snipe was observed within the coast habitats and Sizewell Marshes SSSI. Breeding snipe were located near the main platform, north of the EDF power station complex, Goose Hill and the arable fields at the northern end of the EDF Energy estate.

ff) **Spoonbill**

1.5.293 Spoonbill is listed on Schedule 1 of the W&CA (Ref. 1.1). Spoonbill is regarded as being of medium conservation importance in the UK following

its inclusion on the Amber List of BoCC (Ref. 1.2). This is due its breeding rarity (with a UK breeding population of only two pairs) and its wintering rarity (with a UK non-breeding population of 20 birds (Ref. 1.2)).

i. **Desk-study**

Suffolk Birds

- 1.5.294 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe spoonbill as an uncommon passage migrant which is now regularly seen over summers. Spoonbill are also known to overwinter. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at RSPB Minsmere Reserve, RSPB North Warren Reserve, Hazlewood Marshes, Orfordness, Havergate Island and Hollesley Marshes.

RSPB

- 1.5.295 The RSPB did not report any spoonbill records within 5km of the existing Sizewell power station complex.

SBIS

- 1.5.296 Desk-study records provided by SBIS reported a total of eight records of spoonbill within 2km of the site. These records were located at RSPB Minsmere Reserve, Eastbridge, Thorpeness, Leiston Common, and Aldringham Common and Walks.

NGL

- 1.5.297 NGL have not recorded spoonbill in the last 14 years. However, spoonbill was recorded once in 2005, when two birds were recorded on Saltmarsh field in April.

ii. **Secondary data**

- 1.5.298 Wood Group did not record spoonbill during any of the surveys undertaken.

iii. **Primary data**

- 1.5.299 Spoonbill was recorded during the cormorant surveys, with three birds observed at dawn on 17 February 2015, first commuting south past VP 1, and then commuting south past VP 5 (south of the site). On the same day, a solitary spoonbill was recorded commuting north at dusk from VP 2. Spoonbill was also recorded as part of the waterfowl surveys, with three birds being recorded on Minsmere South Levels on 5 March 2015. It is likely that all of these records relate to the same group of birds, as they

were regularly seen in the vicinity of the site for over a month, and used the Minsmere South Levels as a regular roosting site.

1.5.300 In summary, spoonbill have been observed in the vicinity of the site, both offshore and within Minsmere South Levels, but only very rarely.

gg) Common crane

1.5.301 Common crane is listed on Schedule 1 of the W&CA (Ref. 1.1). Common crane is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to its breeding and non-breeding rarity (Ref. 1.2). Common crane was only recorded as an incidental sighting, this is detailed below.

1.5.302 During the Arcadis barn owl survey undertaken on 28 April 2015. Four birds seen displaying just north of the EDF Energy estate in the vicinity of Cow Marsh Hill.

1.5.303 The Suffolk Birds reports (Ref. 1.9 - 1.14) describe common crane as a scarce passage migrant which has bred in the county since 2007. The 2017 Suffolk Bird Report (Ref. 1.14) states that sightings were reported at RSPB Minsmere Reserve, Dingle Marshes, and Walberswick.

hh) Green list waterfowl and wader assemblage species

1.5.304 In addition to the Red and Amber Listed BoCC (Ref. 1.2), and NERC Act (2006) (Ref. 1.3) section 41 waterfowl and wader assemblage species described above, a number of other Green Listed BoCC (Ref. 1.2) waterfowl and wader species have also been recorded during the Wood Group and Arcadis surveys. Species accounts have not been included for these species, however, an indication of the surveys in which each of the species have been observed (during the Wood Group and Arcadis surveys) are provided in **Table 1.79** and **Table 1.80**.

Table 1.78: Green list waterfowl and wading bird species observed during Wood Group surveys.

Species	Breeding bird survey	Intertidal bird survey	Walkover survey	Intertidal survey	Breeding bird survey 2012	Seabird survey 2011-2012	Arable Reversion Breeding Bird Survey 2012
Canada goose (<i>Branta canadensis</i>)	✓			✓			✓

NOT PROTECTIVELY MARKED

Species	Breeding bird survey	Intertidal bird survey	Walkover survey	Intertidal survey	Breeding bird survey 2012	Seabird survey 2011-2012	Arable Reversion Breeding Bird Survey 2012
Tufted duck (<i>Aythya fuligula</i>)	✓			✓		✓	✓
Red-breasted merganser (<i>Mergus serrator</i>)						✓	
Cormorant		✓		✓		✓	
Little egret (<i>Egretta garzetta</i>)	✓					✓	
Grey heron (<i>Ardea cinerea</i>)	✓					✓	✓
Little grebe (<i>Tachybaptus ruficollis</i>)	✓						
Great crested grebe (<i>Podiceps cristatus</i>)				✓		✓	
Moorhen (<i>Gallinula chloropus</i>)	✓		✓		✓		✓
Coot (<i>Fulica atra</i>)	✓				✓		
Grey phalarope (<i>Phalaropus fulicarius</i>)						✓	

Table 1.79: Green list waterfowl and wading bird species observed during Arcadis surveys.

Species	Red-throated diver survey 1 st Winter 2012-2013	Little tern survey 2013	Red-throated diver survey 2 nd Winter 2013-2014	Breeding bird survey 2014	Cormorant survey 2014-2015	Wintering bird survey 2014-2015	Waterfowl survey 2014-2015	Arable harrier survey 2015	Northern arable breeding bird survey 2015	Winter wetland Bird Survey (2018-19)
Canada goose		✓	✓	✓	✓					
Tufted duck	✓	✓	✓		✓					
Goosander (<i>Mergus merganser</i>)			✓							
Cormorant	✓	✓	✓				✓			✓
Little egret			✓			✓	✓	✓		✓
Grey heron			✓	✓		✓	✓	✓		✓
Little grebe	✓									
Great crested grebe	✓		✓		✓					
Moorhen										✓
Coot										✓
Jack snipe (<i>Lymnocyptes minimus</i>)										✓

1.6 Tables

a) Introduction

1.6.1 This section provides details of the survey results associated with species accounts set out within **sections 2 to 4**.

b) Qualifying features of one or more designated sites

1.6.2 The survey results associated with the red-throated diver surveys carried out in Winter 2012-2013 and 2013-2014 are presented in **Annex 14A7.4, Reports 14A7.4-1 and 14A7.4-2** and are therefore not repeated here.

Table 1.80: Sightings of brent geese from Arcadis coastal surveys undertaken between 2012-2015.

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
31/10/2012	10	11:30	12:15	1	Commute	Inshore	Red-throated diver 2012-2013
31/10/2012	11	10:20	11:10	2	Commute	Inshore	Red-throated diver 2012-2013
27/11/2012	1	12:10	12:55	1	Commute		Red-throated diver 2012-2013
28/11/2012	7	08:30	09:15	1	Commute	Inshore	Red-throated diver 2012-2013
28/11/2012	9	10:35	11:20	1	Commute	Inshore	Red-throated diver 2012-2013
28/11/2012	3	14:30	15:15	2	Commute	offshore	Red-throated diver 2012-2013
28/11/2012	6	08:30	09:15	2	Commute	Inshore	Red-throated diver 2012-2013
28/11/2012	14	11:00	11:45	15	Commute		Red-throated diver 2012-2013
28/11/2012	15	10:00	10:45	2	Commute	Inshore	Red-throated diver 2012-2013
29/11/2012	3	07:00	08:00	2	Commute		Red-throated diver 2012-2013
12/12/2012	3	06:45	07:30	10	Commute	Inshore	Red-throated diver 2012-2013
19/12/2012	5	10:55	11:40	4	Commute	Inshore	Red-throated diver 2012-2013

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
19/12/2012	11	11:00	11:45	10	Commute	Inshore	Red-throated diver 2012-2013
19/12/2012	9	14:00	14:45	60	Commute	Inshore	Red-throated diver 2012-2013
03/01/2013	4	07:00	08:00	20	Commute	Inshore	Red-throated diver 2012-2013
03/01/2013	11	12:30	13:15	1	Commute	Inshore	Red-throated diver 2012-2013
21/01/2013	1	16:00	16:45	7	Commute	Inshore	Red-throated diver 2012-2013
22/01/2013	2	07:15	08:00	8	Commute	Inshore	Red-throated diver 2012-2013
22/01/2013	12	09:25	10:10	25	Commute	Inshore	Red-throated diver 2012-2013
22/01/2013	11	11:05	11:50	37	Commute	Inshore	Red-throated diver 2012-2013
22/01/2013	9	13:40	14:25	18	Commute	Inshore	Red-throated diver 2012-2013
22/01/2013	7	15:40	16:25	36	Commute	Inshore	Red-throated diver 2012-2013
22/01/2013	1	07:25	08:10	8	Commute	Inshore	Red-throated diver 2012-2013
22/01/2013	3	09:45	10:30	25	Commute	Inshore	Red-throated diver 2012-2013
22/01/2013	13	11:00	11:45	44	Commute	both	Red-throated diver 2012-2013
22/01/2013	14	12:00	12:45	110	Commute	Inshore	Red-throated diver 2012-2013
22/01/2013	15	13:00	13:45	36	Commute	Inshore	Red-throated diver 2012-2013
22/01/2013	6	15:30	16:15	31	Commute	both	Red-throated diver 2012-2013
06/02/2013	12	10:00	10:45	4	Forage	Inshore	Red-throated diver 2012-2013
06/02/2013	8	15:15	16:00	70	Rest	Inshore	Red-throated diver 2012-2013
19/02/2013	9	10:15	11:00	20	Commute	Inshore	Red-throated diver 2012-2013

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
05/03/2013	14	15:45	16:30	1	Commute	Inshore	Red-throated diver 2012-2013
17/10/2013	13	13:45	14:30	7	Commute	Inshore	Red-throated diver 2013-2014
31/10/2014	3	08:40	09:25	27	Commute	Inshore/onshore	Red-throated diver 2013-2014
31/10/2014	5	14:00	14:45	1	Commute	Inshore	Red-throated diver 2013-2014
31/10/2014	7	11:15	12:00	6	Commute	Inshore	Red-throated diver 2013-2014
31/10/2014	14	13:35	14:20	4	Commute	Inshore	Red-throated diver 2013-2014
12/11/2013	6	07:25	08:10	4	Commute	Inshore	Red-throated diver 2013-2014
12/11/2013	7	07:25	08:10	21	Commute	Inshore	Red-throated diver 2013-2014
12/11/2013	9	13:25	14:05	8	Commute	Inshore	Red-throated diver 2013-2014
13/11/2013	4	06:50	07:40	12	Commute	Inshore	Red-throated diver 2013-2014
26/11/2013	11	11:15	12:00	1			Red-throated diver 2013-2014
26/11/2013	12	09:30	10:15	10	Commute	Inshore	Red-throated diver 2013-2014
17/12/2013	9	13:30	14:15	5	Commute	Inshore	Red-throated diver 2013-2014
08/01/2014	8	15:00	15:45	4	Commute	Inshore	Red-throated diver 2013-2014
09/01/2014	15	10:00	10:45	4	Commute	Inshore	Red-throated diver 2013-2014
04/02/2014	12	09:20	10:05	2	Commute	Inshore	Red-throated diver 2013-2014
20/02/2014	1	10:55	11:40	37	Commute	Inshore	Red-throated diver 2013-2014
20/02/2014	2	12:10	12:55	1	Commute	Inshore	Red-throated diver 2013-2014
20/02/2014	13	09:30	10:15	61	Commute	Inshore	Red-throated diver 2013-2014

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
12/11/2014	12	09:10	09:55	147	Commute	Inshore	Cormorant surveys 2014-2015
12/11/2014	11	11:10	11:55	325	Commute	Inshore	Cormorant surveys 2014-2015
12/11/2014	10	13:05	13:55	60	Commute	Inshore	Cormorant surveys 2014-2015
12/11/2014	9	15:15	15:00	31	Commute	Inshore	Cormorant surveys 2014-2015
12/11/2014	8	15:45	16:30	14	Commute	Inshore	Cormorant surveys 2014-2015
12/11/2014	2	07:00	07:45	260	Commute	Inshore	Cormorant surveys 2014-2015
12/11/2014	1	08:15	09:00	344	Commute	Inshore	Cormorant surveys 2014-2015
12/11/2014	13	09:15	10:00	98	Commute	Inshore	Cormorant surveys 2014-2015
12/11/2014	2	10:26	11:11	321	Commute	Inshore	Cormorant surveys 2014-2015
12/11/2014	14	12:10	15:55	40	Commute	Onshore	Cormorant surveys 2014-2015
12/11/2014	15	13:10	13:55	26	Commute	Inshore	Cormorant surveys 2014-2015
12/11/2014	2	15:50	16:35	52	Commute	Inshore	Cormorant surveys 2014-2015
12/11/2014	4	08:10	08:55	225	Commute	Inshore	Cormorant surveys 2014-2015
12/11/2014	6	12:10	12:55	47	Commute	Inshore	Cormorant surveys 2014-2015
12/11/2014	7	13:15	14:00	32	Commute	Inshore	Cormorant surveys 2014-2015
25/11/2014	11	10:45	11:30	2	Commute	Inshore	Cormorant surveys 2014-2015
25/11/2014	15	07:10	08:55	22	Commute	Inshore	Cormorant surveys 2014-2015
03/12/2014	4	07:30	08:15	1	Commute	Inshore	Cormorant surveys 2014-2015
03/12/2014	5	07:45	08:30	3	Commute	Inshore	Cormorant surveys 2014-2015

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
03/12/2014	5	14:10	14:55	35	Commute	Inshore	Cormorant surveys 2014-2015
07/01/2015	6	09:48	10:33	7	Commute	Inshore	Cormorant surveys 2014-2015
17/02/2015	1	7:05	7:50	1	Commute	Inshore	Cormorant surveys 2014-2015
17/02/2015	5	6:57	7:42	2	Commute	Inshore	Cormorant surveys 2014-2015

Table 1.81: Shelduck observations during coastal Arcadis surveys 2012-2015.

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
28/11/2012	3	14:30	15:15	5	Commute	Inshore	Red-throated diver survey 2012-13
28/11/2012	15	10:00	10:45	2	Commute	Inshore	Red-throated diver survey 2012-13
12/12/2012	10	11:05	11:50	10	Commute	Inshore	Red-throated diver survey 2012-13
19/12/2012	11	11:00	11:45	1	Commute	Inshore	Red-throated diver survey 2012-13
03/01/2013	11	12:30	13:15	4	Commute	Inshore	Red-throated diver survey 2012-13
03/01/2013	12	14:30	15:15	6	Commute	Inshore	Red-throated diver survey 2012-13
04/01/2013	15	9:15	10:00	5	Rest	Inshore	Red-throated diver survey 2012-13
22/01/2013	10	12:20	13:05	3	Commute	Inshore	Red-throated diver survey 2012-13
22/01/2013	9	13:40	14:25	4	Commute	Inshore	Red-throated diver survey 2012-13
22/01/2013	7	15:40	16:25	8	Commute	Inshore	Red-throated diver survey 2012-13
22/01/2013	3	9:45	10:30	3	Commute	Inshore	Red-throated diver survey 2012-13
22/01/2013	15	13:00	13:45	1	Rest	Inshore	Red-throated diver survey 2012-13
22/01/2013	6	15:30	16:15	13	Commute	Inshore	Red-throated diver survey

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
							2012-13
06/02/2013	4	7:00	7:45	2	Commute	Inshore	Red-throated diver survey 2012-13
06/02/2013	5	8:10	8:55	1	Commute	Inshore	Red-throated diver survey 2012-13
06/02/2013	1	10:25	11:10	2	Commute	Inshore	Red-throated diver survey 2012-13
19/02/2013	1	7:00	7:45	1	Commute	Inshore	Red-throated diver survey 2012-13
19/02/2013	11	13:00	13:45	4	Rest	Inshore	Red-throated diver survey 2012-13
04/03/2013	4	16:45	17:30	2	Commute	Inshore	Red-throated diver survey 2012-13
05/03/2013	4	6:30	7:15	2	Commute	Inshore	Red-throated diver survey 2012-13
30/03/2013	15	8:00	8:45	2	Commute	On shore	Little tern survey 2013
25/06/2013	7	6:30	7:15	3	Forage	Inshore	Little tern survey 2013
07/08/2013	2	8:15	9:00	2	Commute	Inshore	Little tern survey 2013
31/10/2013	3	8:40	9:25	1	Commute	Inshore	Red-throated diver survey 2013-14
31/10/2013	9	8:30	9:15	6	Commute	Inshore	Red-throated diver survey 2013-14
31/10/2013	14	13:35	14:20	4	Commute	Inshore	Red-throated diver survey 2013-14
12/11/2013	8	14:35	15:20	2	Commute	Inshore	Red-throated diver survey 2013-14
17/12/2013	15	12:00	12:45	3	Commute	Inshore	Red-throated diver survey 2013-14
09/01/2014	4	12:45	13:30	3	Commute	Inshore	Red-throated diver survey 2013-14
09/01/2014	7	9:25	10:10	2	Commute	Inshore	Red-throated diver survey 2013-14
04/02/2014	6	7:20	8:05	7	Commute	Inshore	Red-throated diver survey 2013-14
20/02/2014	2	12:10	12:55	5	Commute	Inshore	Red-throated diver survey 2013-14
21/02/2014	14	6:30	7:15	1	Commute	Inshore	Red-throated diver survey 2013-14

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
19/03/2014	4	5:50	6:35	3	Commute	Inshore	Red-throated diver survey 2013-14
12/11/2014	11	11:10	11:55	9	Commute	Inshore	Cormorant survey 2014-14
12/11/2014	8	15:45	16:30	3	Commute	Inshore	Cormorant survey 2014-14
12/11/2014	2	7:00	7:45	20	Commute	Inshore	Cormorant survey 2014-14
12/11/2014	1	8:15	9:00	6	Commute	Inshore	Cormorant survey 2014-14
12/11/2014	2	10:26	11:11	3	Commute	Inshore	Cormorant survey 2014-14
12/11/2014	2	15:50	16:35	5	Commute	Inshore	Cormorant survey 2014-14
12/11/2014	6	12:10	12:55	1	Commute	Inshore	Cormorant survey 2014-14
12/11/2014	7	13:15	14:00	1	Commute	Inshore	Cormorant survey 2014-14
16/12/2014	15	14:10	14:55	3	Commute	Inshore	Cormorant survey 2014-14
20/01/2015	8	14:50	15:35	1	Commute	Inshore	Cormorant survey 2014-14
20/01/2015	13	8:35	9:20	4	Commute	Inshore	Cormorant survey 2014-14
04/02/2015	1	13:50	14:35	2	Commute	Inshore	Cormorant survey 2014-14
17/02/2015	1	7:05	7:50	2	Commute	Inshore	Cormorant survey 2014-14
17/02/2015	1	15:50	16:35	4	Commute	Inshore	Cormorant survey 2014-14
17/02/2015	2	9:50	10:35	1	Commute	Inshore	Cormorant survey 2014-14
17/02/2015	5	6:57	7:42	2	Commute	Inshore	Cormorant survey 2014-14
17/02/2015	12	9:05	9:50	3	Commute	Inshore	Cormorant survey 2014-14
17/02/2015	13	12:55	13:40	1	Commute	Inshore	Cormorant survey 2014-14
17/02/2015	14	8:30	9:15	1	Commute	Inshore	Cormorant survey 2014-14
17/03/2015	3	17:35	18:20	1	Commute	Inshore	Cormorant survey 2014-14
17/03/2015	6	5:50	6:35	2	Commute	Inshore	Cormorant survey 2014-14

Table 1.82: Wigeon observations during coastal Arcadis surveys 2012-2015.

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
27/11/2012	10	12:10	12:55	20	Commute	Inshore	Red-throated Diver survey 2012-13
27/11/2012	10	11:35	12:20	50	Commute	Inshore	Red-throated Diver survey 2012-13

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
27/11/2012	12	9:05	9:50	300	Rest	Inshore	Red-throated Diver survey 2012-13
28/11/2012	10	12:10	12:55	8	Rest	Inshore	Red-throated Diver survey 2012-13
28/11/2012	8	9:30	10:15	7	Rest	Inshore	Red-throated Diver survey 2012-13
12/12/2012	6	8:00	8:45	9	Commute/ Rest	Inshore	Red-throated Diver survey 2012-13
12/12/2012	14	10:30	11:15	60	Forage/ Rest	Inshore	Red-throated Diver survey 2012-13
12/12/2012	10	11:05	11:50	20	Rest	Inshore	Red-throated Diver survey 2012-13
12/12/2012	13	11:30	12:15	30	Rest	Inshore	Red-throated Diver survey 2012-13
12/12/2012	11	12:30	13:15	20	Rest	Inshore	Red-throated Diver survey 2012-13
19/12/2012	2	13:15	14:00	30	Commute	Inshore	Red-throated Diver survey 2012-13
03/01/2013	11	12:30	13:15	60	Rest	Inshore	Red-throated Diver survey 2012-13
03/01/2013	12	14:30	15:15	200	Rest	Inshore	Red-throated Diver survey 2012-13
03/01/2013	7	15:25	16:10	150	Rest	Inshore	Red-throated Diver survey 2012-13
22/01/2013	12	9:25	10:10	16	Commute	Inshore	Red-throated Diver survey 2012-13
22/01/2013	3	9:45	10:30	10	Commute	Inshore	Red-throated Diver survey 2012-13
22/01/2013	14	12:00	12:45	50	Rest	Inshore	Red-throated Diver survey 2012-13
22/01/2013	15	13:00	13:45	15	Forage/ Rest	Inshore	Red-throated Diver survey 2012-13
22/01/2013	6	15:30	16:15	36	Commute/ Forage	Inshore	Red-throated Diver survey 2012-13
19/02/2013	3	10:45	11:30	320	Commute	Inshore	Red-throated Diver survey 2012-13
19/02/2013	5	12:55	13:40	160	Commute	Inshore	Red-throated Diver survey 2012-13

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
19/02/2013	6	14:20	15:05	270	Commute	Inshore	Red-throated Diver survey 2012-13
19/02/2013	12	14:45	15:30	60	Commute	Inshore	Red-throated Diver survey 2012-13
19/02/2013	7	15:15	16:00	270	Commute	Inshore	Red-throated Diver survey 2012-13
20/08/2013	5	16:40	17:25	16	Commute	Inshore	Little tern survey 2013
17/10/2013	3	7:00	7:45	10	Commute	Inshore	Red-throated diver survey 2013-14
31/10/2013	1	11:40	12:25	15	Rest	Inshore	Red-throated diver survey 2013-14
01/11/2013	7	6:35	7:20	2	Rest	Inshore	Red-throated diver survey 2013-14
31/10/2013	13	12:40	13:25	8	Rest	Inshore	Red-throated diver survey 2013-14
12/11/2013	6	7:25	8:10	4	Commute	Inshore	Red-throated diver survey 2013-14
26/11/2013	1	11:30	12:15	30	Rest	Inshore	Red-throated diver survey 2013-14
05/12/2013	15	9:00	9:45	20	Rest	Inshore	Red-throated diver survey 2013-14
23/01/2014	12	9:20	10:05	180	Commute/ Rest	Inshore	Red-throated diver survey 2013-14
12/11/2014	9	14:15	15:00	30	Commute	Inshore	Cormorant survey 2014-15
12/11/2014	8	15:45	16:30	15	Commute	Inshore	Cormorant survey 2014-15
12/11/2014	1	8:15	9:00	12	Commute	Inshore	Cormorant survey 2014-15
12/11/2014	13	9:15	10:00	37	Commute	Inshore	Cormorant survey 2014-15
12/11/2014	4	8:10	8:55	40	Commute	Inshore	Cormorant survey 2014-15
12/11/2014	5	9:10	9:55	15	Commute	Inshore	Cormorant survey 2014-15
03/12/2014	11	11:10	11:55	9	Commute	Inshore	Cormorant survey 2014-15
07/01/2015	5	12:40	13:25	9	Commute	Inshore	Cormorant survey 2014-15
07/01/2015	14	13:25	14:10	70	Commute	Inshore	Cormorant survey 2014-15
20/01/2015	1	10:15	11:00	336	Rest	Inshore	Cormorant survey 2014-15
20/01/2015	6	8:50	9:35	3	Commute	Inshore	Cormorant survey 2014-15
20/01/2015	15	13:00	13:45	8	Rest	Inshore	Cormorant survey 2014-15

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
17/02/2015	10	12:55	13:40	3	Rest	Inshore	Cormorant survey 2014-15
17/03/2015	1	13:50	14:35	2	Commute	Inshore	Cormorant survey 2014-15
17/03/2015	11	10:35	11:20	70	Commute	Inshore	Cormorant survey 2014-15

Table 1.83: A summary of the lesser black-backed gull records during Arcadis coastal surveys.

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
Red-throated diver survey 2012-2013						
31/10/2012	10	11:30	12:15	2	Commute	Inshore
31/10/2012	11	10:20	11:05	1	Commute	Inshore
27/11/2012	2	15:30	16:15	10		
28/11/2012	3	14:30	15:15	12	Rest	Inshore
28/11/2012	5	15:30	16:15	2	Rest	On shore
29/11/2012	3	07:00	07:45	5	Rest	
12/12/2012	10	11:05	11:50	4	Forage	Inshore
02/01/2013	4	15:15	16:00	4	Rest	Inshore
03/01/2013	4	07:00	7:45	4	Commute	On shore
03/01/2013	1	11:00	11:45	4	Commute	Inshore
06/02/2013	7	16:15	17:00	4	Rest	
18/02/2013	15	14:45	15:30	10	Rest	Inshore
19/02/2013	5	12:55	13:40	3	Rest	Inshore
19/02/2013	6	14:20	15:05	20	Forage	Inshore
27/03/2013	1	06:00	6:45	10	Forage	Inshore
27/03/2013	15	09:00	9:45	4	Forage	Inshore
27/03/2013	13	11:00	11:45	10	Forage	Inshore
27/03/2013	14	12:45	13:30	40	Forage	Inshore
27/03/2013	5	15:00	15:45	4	Commute	Inshore
27/03/2013	6	16:15	17:00	2	Forage	Inshore
Red-throated diver survey 2013-2014						
17/10/2013	2	16:45	17:30	2	Rest	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
17/10/2013	3	07:00	7:45	2	Rest	Inshore
17/10/2013	5	17:00	17:45	10	Rest	Inshore
26/11/2013	1	11:30	12:15	3	Forage	Inshore
26/11/2013	2	13:25	14:10	c100	Forage	Inshore
26/11/2013	3	14:20	15:05	25	Forage	Inshore/On shore
26/11/2013	5	07:00	7:45	60	Commute/Forage	Inshore
26/11/2013	6	15:20	16:05	c80	Commute/Forage/Rest	Inshore
26/11/2013	8	15:15	16:00	2	Rest	Inshore
26/11/2013	9	14:00	14:45	4	Commute	Inshore
26/11/2013	13	10:30	11:15	6	Forage	Inshore
26/11/2013	14	09:30	10:15	10	Commute/Forage	Inshore
05/12/2013	1	13:15	14:00	10	Commute	Inshore
05/12/2013	3	07:30	8:15	50	Forage/Rest	Inshore/On shore
05/12/2013	4	08:45	9:30	10	Forage	Inshore
05/12/2013	6	11:00	11:45	10	Forage	Inshore
05/12/2013	9	13:5100	14:35	30	Forage/Rest	Inshore/On shore
05/12/2013	14	10:1255	11:00	10	Commute	Inshore
06/12/2013	14	08:1505	9:00	10	Commute	Inshore
17/12/2013	1	08:1205	9:00	25	Commute/Forage/Rest	Inshore
16/12/2013	2	15:0100	15:45	60	Forage	Inshore
17/12/2013	2	07:15	8:00	50	Commute/Forage/Rest	Inshore
17/12/2013	13	09:55	10:40	25	Commute/Forage	Inshore
09/01/2014	3	13:45	14:30	20	Forage	Inshore
09/01/2014	4	12:45	13:30	15	Commute	Inshore
09/01/2014	5	11:30	12:15	10	Commute/Forage	Inshore
09/01/2014	7	09:25	10:10	10	Commute	Inshore
22/01/2014	3	15:30	16:15	30	Forage/Rest	Inshore
23/01/2014	3	06:45	7:30	30	Commute/Forage	Inshore
23/01/2014	7	14:25	15:10	4	Rest	
23/01/2014	6	14:45	15:30	12	Rest	On shore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
23/01/2014	10	12:00	12:45	30	Commute/Forage	Inshore
23/01/2014	11	10:50	11:35	44	Forage/Rest	Inshore/ On shore
04/02/2014	2	12:50	13:35	20	Commute	Inshore
04/02/2014	3	13:40	14:25	4	Commute	Inshore
03/02/2014	7	15:50	16:35	12	Commute	Inshore
04/02/2014	8	14:30	15:15	10	Forage	On shore
04/02/2014	11	10:35	11:20	5	Commute/Forage	Inshore
04/02/2014	14	09:45	10:30	2	Commute	Inshore
04/02/2014	15	08:30	9:15	5	Commute	Inshore
20/02/2014	5	07:15	8:00	10	Commute/Forage	Inshore/On shore
20/02/2014	6	07:15	8:00	4	Commute	Inshore
20/02/2014	11	11:00	11:45	25	Forage	Inshore/ On shore
20/02/2014	12	09:15	10:00	20	Commute/Forage	Inshore
20/02/2014	15	17:00	17:45	100	Commute/Rest	Inshore
06/03/2014	1	10:35	11:20	15	Forage	Inshore
06/03/2014	2	12:45	13:30	70	Forage/Rest	Inshore
06/03/2014	3	12:40	13:25	15	Forage/Rest	Inshore
06/03/2014	4	13:45	14:30	10	Commute/Rest	Inshore
06/03/2014	5	13:50	14:35	40	Commute	Inshore
05/03/2014	6	17:15	18:00	5	Commute	Inshore
05/03/2014	7	17:10	17:55	30	Rest	Inshore
06/03/2014	7	06:15	7:00	40	Commute/Forage	Inshore
06/03/2014	12	08:50	9:35	7	Commute	Inshore
06/03/2014	13	10:30	11:15	15	Commute	Inshore
06/03/2014	14	09:25	10:10	30	Commute	Inshore
06/03/2014	15	08:25	9:10	70	Forage/Rest	Inshore
18/03/2014	4	17:45	18:30	40	Commute/Rest	Inshore
19/03/2014	1	09:50	10:35	20	Commute	Inshore
19/03/2014	2	08:00	8:45	90	Forage/Rest	Inshore
19/03/2014	3	07:00	7:45	140	Commute/Rest	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
19/03/2014	4	05:50	6:35	150	Commute/Rest	Inshore
19/03/2014	5	05:45	6:30	15	Commute/Forage	Inshore
19/03/2014	8	14:15	15:00	10	Forage	Inshore/On shore
19/03/2014	9	13:00	13:45	30	Forage/Rest	Inshore/On shore
19/03/2014	10	11:40	12:25	60	Commute/Forage	Inshore
19/03/2014	11	10:25	11:10	60	Commute/Forage	Inshore
19/03/2014	12	09:00	9:45	25	Commute/Forage	Inshore
19/03/2014	13	11:00	11:45	10	Commute/Rest	Inshore
19/03/2014	14	11:50	12:35	15	Commute	
Lesser black-backed gull records during the little tern survey 2013						
29/03/2013	7	10:10	10:55	10	Commute/Forage	Inshore/On shore
29/03/2013	8	11:10	11:55	6	Forage/Rest	On shore
30/03/2013	15	08:00	8:45	10	Rest	On shore
14/05/2013	11	10:45	11:30	12	Rest	On shore
14/05/2013	10	11:55	12:40	c300	Rest/Breeding	On shore
14/05/2013	8	14:00	14:45	40	Forage/Rest	On shore
15/05/2013	4	09:15	10:00	10	Commute/Rest	On shore
15/05/2013	3	10:20	11:05	5	Commute/Rest	Inshore
15/05/2013	2	11:20	12:05	5	Commute/Rest	Inshore
28/05/2013	2	06:10	6:55	10	Forage/Rest	Inshore
28/05/2013	3	07:15	8:00	30	Commute/Rest	Inshore
28/05/2013	4	18:30	19:15	18	Commute/Rest	Inshore/On shore
28/05/2013	5	19:45	20:30	11	Commute	Inshore/On shore
29/05/2013	6	09:15	10:00	17	Commute	Inshore/On shore
29/05/2013	9	12:15	13:00	5	Commute	Inshore
29/05/2013	10	14:00	14:45	80	Breeding	Onshore
29/05/2013	11	15:10	15:55	60	Commute/Rest	Onshore
29/05/2013	12	16:40	17:25	40	Forage/Commute	Inshore/On

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
						shore
30/05/2013	14	09:00	9:45	25	Forage/Rest	Inshore/On shore
30/05/2013	13	10:00	10:45	2	Forage/Rest	Inshore/On shore
30/05/2013	1	10:55	11:40	50	Forage	Inshore
10/06/2013	5	13:00	13:45	75	Commute	Inshore
11/06/2013	6	15:30	16:15	2	Commute	Inshore
12/06/2013	8	06:45	7:30	10	Commute/Rest	Inshore/On shore
12/06/2013	9	11:45	12:30	2	Commute	Inshore
24/06/2013	8	17:45	18:30	3	Commute	Inshore
25/06/2013	4	10:30	11:15	15	Forage	
26/06/2013	10	07:30	8:15	20	Commute/Forage	Inshore
26/06/2013	3	17:30	18:15	10	Breeding	Inshore
08/07/2013	5	17:20	18:05	4	Commute	Inshore
08/07/2013	6	18:20	19:05	3	Commute	
08/07/2013	7	19:10	19:55	2	Commute	
09/07/2013	12	10:15	11:00	3	Commute	Inshore
09/07/2013	11	11:35	12:20	6	Forage/Rest	Inshore/On shore
09/07/2013	10	12:40	13:25	4	Rest	
09/07/2013	2	14:45	15:30	10	Rest	Onshore
09/07/2013	3	15:40	16:25	15	Forage/Rest	
09/07/2013	4	16:40	17:25	3	Commute/Rest	Inshore/On shore
09/07/2013	8	17:50	18:35	11	Forage	On shore
10/07/2013	14	09:50	10:35	4	Forage	Inshore
10/07/2013	13	10:45	11:30	4	Commute/Forage	Inshore/On shore
10/07/2013	1	11:40	12:25	6	Forage	Inshore
24/07/2013	15	13:00	13:45	10	Commute	Inshore
24/07/2013	13	15:15	16:00	4	Commute	
25/07/2013	12	09:45	10:30	6	Commute	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
25/07/2013	11	11:30	12:15	10	Commute	Inshore
25/07/2013	10	13:00	13:45	4	Commute	Inshore
25/07/2013	9	15:00	15:45	3	Commute	
26/07/2013	2	09:00	9:45	20	Forage	
06/08/2013	6	06:45	7:30	1	Rest	On shore
06/08/2013	7	07:45	8:30	6	Forage/Rest	Inshore/On shore
06/08/2013	8	08:40	9:25	5	Forage/Rest	On shore
06/08/2013	9	10:15	11:00	1	Forage	On shore
06/08/2013	10	11:40	12:25	15	Rest	On shore
06/08/2013	4	18:00	18:45	10	Forage/Rest	Inshore
07/08/2013	3	07:05	7:50	30	Forage/Rest	Inshore
07/08/2013	2	08:15	9:00	16	Forage	Inshore
07/08/2013	14	10:30	11:15	12	Rest	On shore
19/08/2013	15	16:15	17:00	7	Commute/Rest	Inshore
Lesser black-backed gull records during the cormorant survey 2014-2015						
12/11/2014	3	07:00	7:45	20	Commute	Inshore
12/11/2014	5	09:10	9:55	15	Commute/Forage	Inshore
12/11/2014	3	10:25	11:10	5	Commute/Rest	Inshore
12/11/2014	6	12:10	12:55	2	Commute	Inshore
12/11/2014	7	13:15	14:00	30	Commute/Rest	Inshore
12/11/2014	3	15:50	16:35	15	Rest	Inshore
25/11/2014	3	10:38	11:23	7	Commute/Rest	Inshore
25/11/2014	3	15:38	16:23	6	Commute/Rest	Inshore/On shore
25/11/2014	4	09:38	10:23	8	Commute	Inshore
25/11/2014	5	08:23	9:08	13	Commute/Rest	Inshore
25/11/2014	6	07:10	7:55	19	Commute/Forage/Rest	Inshore/ On shore
25/11/2014	6	12:20	13:05	3	Commute	Inshore
25/11/2014	7	13:20	14:05	7	Commute	Inshore
25/11/2014	8	14:30	15:15	10	Commute	Inshore
25/11/2014	9	13:15	14:00	15	Commute	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
25/11/2014	10	12:00	12:45	10	Commute	Inshore
25/11/2014	11	10:45	11:30	20	Commute/Rest	Inshore
25/11/2014	12	09:10	9:55	30	Commute/Rest	Inshore
03/12/2014	1	10:00	10:45	10	Commute	Inshore
03/12/2014	2	10:55	11:40	30	Commute/Forage	Inshore
03/12/2014	2	15:25	16:10	40	Commute/Forage/ Rest	Inshore
03/12/2014	4	07:30	8:15	30	Commute	Inshore
03/12/2014	4	14:20	15:05	15	Commute	Inshore
03/12/2014	6	09:00	9:45	1	Commute	Inshore
03/12/2014	8	15:05	15:50	4	Rest	Inshore
03/12/2014	9	13:50	14:35	7	Commute/Rest	Inshore
03/12/2014	10	12:40	13:25	3	Commute	Inshore
03/12/2014	12	09:15	10:00	20	Commute/Forage	Inshore
16/12/2014	8	14:35	15:20	20	Commute	Inshore
16/12/2014	9	13:15	14:00	2	Commute	Inshore
16/12/2014	10	12:00	12:45	3	Commute	Inshore
16/12/2014	11	10:40	11:25	35	Commute	Inshore
16/12/2014	12	09:05	9:50	25	Forage	Inshore
16/12/2014	13	08:40	9:25	6	Commute/Rest	Inshore
16/12/2014	15	07:10	7:55	4	Rest	Inshore
07/01/2015	2	11:20	12:05	25	Commute/Forage	Inshore
07/01/2015	2	15:40	16:25	40	Forage/Rest	Inshore
07/01/2015	13	08:50	9:35	5	Commute	Inshore
07/01/2015	15	07:40	8:25	25	Commute	Inshore
07/01/2015	15	14:25	15:10	10	Commute	Inshore
04/02/2015	1	13:50	14:35	4	Commute	Inshore
04/02/2015	2	16:30	17:15	2	Commute	Inshore
04/02/2015	9	14:25	15:10	2	Commute	Inshore
04/02/2015	12	09:55	10:40	4	Commute/Forage	Inshore
17/02/2015	1	07:05	7:50	10	Commute	Inshore
17/02/2015	1	15:50	16:35	40	Commute/Rest	Inshore

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
17/02/2015	2	09:50	10:35	70	Commute/Forage/Rest	Inshore
17/02/2015	2	16:45	17:30	70	Commute/Forage/Rest	Inshore
17/02/2015	8	15:30	16:15	5	Commute/Rest	Inshore
17/02/2015	10	12:55	13:40	1	Commute	Inshore
17/02/2015	11	10:55	11:40	1	Commute	Inshore
17/03/2015	3	07:00	7:45	20	Commute	Inshore
17/03/2015	3	17:35	16:20	200	Commute/Rest	Inshore
17/03/2015	6	10:10	10:55	3	Commute	Inshore
17/03/2015	7	15:20	16:05	25	Commute/Rest	Inshore
17/03/2015	8	14:10	14:55	15	Commute	Inshore
17/03/2015	9	12:55	13:40	2	Commute	Inshore
17/03/2015	10	11:45	12:30	2	Commute	Inshore
17/03/2015	12	09:05	9:50	12	Commute	Inshore
17/03/2015	13	14:50	15:35	9	Commute/Rest	Inshore
17/03/2015	14	15:43	16:28	2	Commute	Inshore

Table 1.84: Summary of all black headed gull sighting during Arcadis coastal surveys.

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
Red-throated diver survey 2012-2013						
30/10/2012	2	16:00	16:45	228	Forage	Inshore
30/10/2012	3	16:00	16:45	430	Forage/Rest	Inshore
31/10/2012	3	06:15	07:00	100	Rest	Inshore
31/10/2012	2	06:15	07:00	85	Commute/Forage/Rest	Inshore/On shore
31/10/2012	6	08:15	09:00	3	Forage	Inshore
31/10/2012	12	09:00	09:45	4	Rest	Inshore
31/10/2012	5	09:20	10:05	1	Commute	On shore
31/10/2012	1	12:40	13:25	3	Commute	On shore
31/10/2012	8	13:15	14:00	20	Rest	On shore
31/10/2012	9	12:00	12:45	6	Commute	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
31/10/2012	13	13:45	14:30	3	Commute	On shore
31/10/2012	14	14:45	15:30	12	Commute	On shore
31/10/2012	15	15:45	16:30	8	Commute	On shore
27/11/2012	1	12:10	12:55	3	Commute	
27/11/2012	2	15:30	16:15	60		
27/11/2012	3	15:30	16:15	50	Commute/Rest	
27/11/2012	5	14:05	14:50	7	Commute	
27/11/2012	6	07:00	07:45	4	Forage	
27/11/2012	7	14:35	15:20	2	Commute	
27/11/2012	9	12:45	13:30	4	Rest	
27/11/2012	10	11:35	12:20	4	Rest	
27/11/2012	11	10:20	11:05	1	Forage	On shore
27/11/2012	12	11:05	11:50	1	Commute	
27/11/2012	14	10:00	10:45	2	Commute	On shore
27/11/2012	15	08:45	09:30	6	Commute/Forage	On shore
28/11/2012	2	07:00	07:45	150	Forage	Inshore
28/11/2012	7	08:30	09:15	3	Commute	Inshore/On shore
28/11/2012	11	13:10	13:55	25	Commute/Forage/Rest	Inshore/On shore
28/11/2012	12	14:30	15:15	10	Commute	Inshore/On shore
28/11/2012	10	12:10	12:55	3	Commute	Inshore/On shore
28/11/2012	9	10:35	11:20	4	Commute	Inshore/On shore
28/11/2012	8	09:30	10:15	7	Commute	Inshore/On shore
28/11/2012	3	14:30	15:15	40	Rest	Inshore
28/11/2012	4	07:00	07:45	60	Rest	Inshore
28/11/2012	5	15:30	16:15	4	Commute	Inshore
28/11/2012	6	08:30	09:15	4	Rest	Inshore
28/11/2012	15	10:00	10:45	10	Rest	On shore
29/11/2012	3	07:00	07:45	125	Commute/Forage/Rest	Inshore/On shore
29/11/2012	3	07:00	07:45	200	Forage	Inshore
11/12/2012	3	15:30	16:15	168	Forage/Rest	Inshore
11/12/2012	2	15:30	16:15	200		
12/12/2012	2	06:45	07:30	240	Forage	Inshore
12/12/2012	3	06:45	07:30	400	Rest	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
12/12/2012	15	09:15	10:00	15	Forage	Inshore
12/12/2012	9	09:45	10:30			
12/12/2012	10	11:05	11:50	10	Commute	Inshore
12/12/2012	13	11:30	12:15	2	Rest	On shore
12/12/2012	11	12:30	13:15	4	Forage	
12/12/2012	1	12:35	13:20	15	Commute/Forage	Inshore
12/12/2012	4	14:20	15:05	900	Forage/Rest	Inshore
12/12/2012	12	14:15	15:00	4	Forage	Inshore
12/12/2012	5	15:20	16:05	150	Commute	On shore
13/12/2012	3	11:00	11:45	10	Rest	Inshore
13/12/2012	2	12:00	12:45	10	Forage	Inshore
18/12/2012	15	13:40	14:25	50	Commute/Rest	Inshore
18/12/2012	1	15:10	15:55	103	Commute/Rest	Inshore
18/12/2012	4	15:10	15:55	590	Rest	Inshore
19/12/2012	4	07:00	07:45	200	Rest	Inshore
19/12/2012	1	07:20	08:05	150	Commute	Inshore/On shore
19/12/2012	6	10:00	10:45	6	Forage	Inshore
19/12/2012	5	10:55	11:40	15	Commute/Rest	Inshore
19/12/2012	11	11:00	11:45	1	Commute	Inshore
19/12/2012	3	12:20	13:05	8	Commute/Rest	Inshore/On shore
19/12/2012	9	14:00	14:45	4	Rest	Inshore
19/12/2012	13	14:40	15:25	3	Forage	Inshore
19/12/2012	8	15:15	16:00	40	Forage	Inshore
02/01/2013	4	15:15	16:00	400	Rest	Inshore
02/01/2013	4	15:15	16:00	850	Rest	Inshore
02/01/2013	4	15:15	16:00	1400	Rest	Inshore
02/01/2013	3	15:15	16:00	500	Rest	Inshore
03/01/2013	4	07:00	07:45	1000	Rest	Inshore
03/01/2013	3	07:00	07:45	500	Commute/Rest	Inshore
03/01/2013	8	08:30	09:15	10	Commute	Inshore
03/01/2013	13	09:00	09:45	40	Commute	Inshore
03/01/2013	9	09:30	10:15	5	Forage	Inshore
03/01/2013	2	12:00	12:45	1	Rest	On shore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
03/01/2013	11	12:30	13:15	4	Forage	Inshore
03/01/2013	5	13:25	14:20	3	Commute	On shore
03/01/2013	6	14:30	15:15	5	Commute	Inshore
03/01/2013	7	15:25	16:10	350	Rest	Inshore
21/01/2013	1	16:00	16:45	40	Commute/Rest	Inshore
21/01/2013	1	16:00	16:45	3	Commute	Inshore
21/01/2013	2	16:00	16:45	5	Commute/Rest	Inshore
22/01/2013	12	09:25	10:10	9	Commute	Inshore
22/01/2013	10	12:20	13:05	7	Commute/Forage	Inshore
22/01/2013	9	13:40	14:25	11	Commute	Inshore
22/01/2013	8	14:45	15:30	15	Commute	Inshore/On shore
22/01/2013	7	15:40	16:25	80	Commute/Forage/Rest	Inshore
22/01/2013	1	07:25	08:10	4	Forage/Rest	Inshore/On shore
22/01/2013	4	08:50	09:35	60	Commute/Rest	Inshore
22/01/2013	3	09:45	10:30	8	Commute/Forage	Inshore
22/01/2013	13	11:00	11:45	6	Forage/Rest	Inshore
22/01/2013	14	12:00	12:45	3	Rest	On shore
22/01/2013	15	13:00	13:45	10	Commute/Forage	On shore
22/01/2013	6	15:30	16:15	15	Commute/Forage	Inshore/On shore
05/02/2013	4	16:15	17:00	700	Rest	Inshore
05/02/2013	3	16:15	17:00	30	Commute/Rest	Inshore
06/02/2013	3	07:00	07:45	100		Inshore
06/02/2013	12	10:00	10:45	20	Forage	Inshore
06/02/2013	11	12:00	12:45			
06/02/2013	13	12:30	13:15	4	Commute	Inshore
06/02/2013	10	12:45	13:30	10		Inshore
06/02/2013	14	13:25	14:10	4	Commute	Inshore
06/02/2013	9	14:15	15:00	12	Rest	Inshore
06/02/2013	7	16:15	17:00	100	Rest	
18/02/2013	15	14:45	15:30	600	Rest	Inshore
18/02/2013	14	14:45	15:30	4	Rest	Inshore
18/02/2013	14	14:45	15:30	1	Commute	On shore
18/02/2013	1	16:30	17:15	600	Rest	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
18/02/2013	2	16:15	17:00	4	Commute/Rest	Inshore
19/02/2013	1	07:00	07:45	30	Rest	Inshore
19/02/2013	2	07:00	07:45	30	Rest	Inshore
19/02/2013	8	08:45	09:30	40	Rest	Inshore
19/02/2013	3	10:45	11:30	4	Commute	Inshore
19/02/2013	4	11:50	12:35	10	Commute	Inshore
19/02/2013	6	14:20	15:05	50	Rest	Inshore
19/02/2013	12	14:45	15:30	10	Rest	Inshore
19/02/2013	7	15:15	16:00	4	Commute	On shore
04/03/2013	4	16:45	17:30	160	Rest	Inshore
04/03/2013	4	16:45	17:30	120	Forage	Inshore
04/03/2013	4	16:45	17:30	500	Rest	Inshore
05/03/2013	3	06:25	07:10	30	Commute	Inshore
05/03/2013	4	06:30	07:15	200	Rest	Inshore
05/03/2013	6	08:50	09:35	3	Commute	Inshore
05/03/2013	12	09:00	09:45	4	Rest	Inshore
05/03/2013	13	14:45	15:30	2	Rest	Inshore
05/03/2013	8	14:45	15:30	4	Rest	Inshore
05/03/2013	14	15:45	16:30	150	Rest	Inshore
05/03/2013	7	15:45	16:30	100	Rest	Inshore
05/03/2013	15	16:45	17:30	1000	Rest	Inshore
26/03/2013	1	17:30	18:15	15	Forage	On shore
26/03/2013	2	17:30	18:15	150	Forage	Inshore
27/03/2013	2	05:50	06:35	10	Forage	On shore
27/03/2013	1	06:00	06:45	80	Forage	Inshore
27/03/2013	12	09:00	09:45	20	Commute/Forage	On shore
27/03/2013	15	09:00	09:45	40	Forage	Inshore
27/03/2013	14	10:00	10:45	10	Forage	Inshore
27/03/2013	11	10:45	11:30	15	Forage	On shore
27/03/2013	13	11:00	11:45	20	Forage	Inshore
27/03/2013	10	11:50	12:35	10	Forage	On shore
27/03/2013	3	12:45	13:30	100	Rest	Inshore
27/03/2013	9	13:15	14:00	35	Forage	On shore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
27/03/2013	4	14:00	14:45	20	Forage	Inshore
27/03/2013	8	14:15	15:00	50	Forage	On shore
27/03/2013	5	15:00	15:45	20	Commute	Inshore
27/03/2013	7	15:15	16:00	45	Forage	On shore
27/03/2013	6	16:15	17:00	50	Forage	Inshore
Red-throated diver survey 2013-2014						
17/10/2013	1	13:45	14:30	1	Forage	Inshore
17/10/2013	2	16:45	17:30	60	Commute/Forage/Rest	On shore
17/10/2013	3	07:00	07:45	10	Commute/Rest	Inshore
17/10/2013	4	07:00	07:45	40	Commute	Inshore
17/10/2013	5	17:00	17:45	2	Commute	Inshore
17/10/2013	6	15:45	16:30	2	Commute	
17/10/2013	7	14:15	15:00	2	Commute	On shore
17/10/2013	8	12:45	13:30	20	Rest	Inshore
17/10/2013	13	13:45	14:30	1	Commute	Inshore
17/10/2013	14	12:45	13:30	1	Commute	Inshore
17/10/2013	15	11:45	12:30	1	Forage	Inshore
18/10/2013	15	06:45	07:30	10	Commute	Inshore
31/10/2013	2	09:45	10:30	56	Commute/Forage/Rest	Inshore
31/10/2013	3	08:40	09:25	4	Commute	Inshore
31/10/2013	4	15:15	16:00	4	Commute	Inshore
31/10/2013	5	14:00	14:45	10	Commute	Inshore
31/10/2013	7	11:15	12:00	4	Commute	Inshore
31/10/2013	7	06:35	07:20	11	Commute/Forage	Inshore
31/10/2013	8	10:10	10:55	10	Forage	Inshore
01/11/2013	6	06:30	07:15	10	Commute	Inshore
01/11/2013	15	14:55	15:40	1	Commute	Inshore
12/11/2013	1	12:45	13:30	3	Commute	Inshore
12/11/2013	3	14:35	15:20	17	Commute	Inshore
12/11/2013	4	15:45	16:30	5	Commute	Inshore
13/11/2013	4	06:50	07:35	20	Commute	Inshore
12/11/2013	5	15:40	16:25	2	Commute	Inshore
13/11/2013	5	06:45	07:30	6	Commute	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
12/11/2013	6	07:25	08:10	2	Commute	Inshore
12/11/2013	7	07:35	08:20	9	Commute	Inshore
12/11/2013	10	12:05	12:50	6	Forage	Inshore
12/11/2013	12	09:20	10:05	6	Commute	Inshore
12/11/2013	14	10:15	11:00	1	Forage	Inshore
26/11/2013	1	11:30	12:15	10	Forage	Inshore
26/11/2013	2	13:25	14:10	34	Forage/Rest	Inshore
26/11/2013	3	14:20	15:05	40	Commute/Forage	Inshore
26/11/2013	4	07:00	07:45	150	Commute	Inshore
26/11/2013	5	07:00	07:45	40	Commute/Forage	Inshore
26/11/2013	6	15:20	16:05	25	Commute/Forage/Rest	Inshore
27/11/2013	6	07:00	07:45	80	Commute	Inshore
27/11/2013	7	07:00	07:45	100	Commute	Inshore
26/11/2013	9	14:00	14:45	10	Forage	Inshore
26/11/2013	10	12:45	13:30	10	Forage	Inshore
26/11/2013	11	11:15	12:00	1		
26/11/2013	12	09:30	10:15	10	Commute/Forage	Inshore
26/11/2013	13	10:30	11:15	15	Forage	Inshore
26/11/2013	14	09:30	10:15	13	Commute/Forage	Inshore
26/11/2013	15	08:25	09:10	25	Commute/Forage	Inshore
05/12/2013	2	07:30	08:15	10	Commute/Forage	
05/12/2013	3	07:30	09:15	30	Commute	Inshore
05/12/2013	4	08:45	09:30	30	Commute/Forage	Inshore
05/12/2013	5	09:55	10:40	15	Commute/Forage	Inshore
05/12/2013	6	11:00	11:45	8	Commute	Inshore
05/12/2013	7	11:50	12:35	3	Forage/Commute	
05/12/2013	8	12:50	13:35	15	Commute	Inshore
05/12/2013	14	10:15	11:00	4	Forage	Inshore
06/12/2013	14	08:15	09:00	4	Commute	Inshore
05/12/2013	15	09:00	09:45	4	Forage	Inshore
06/12/2013	15	08:15	09:00	10	Commute	Inshore
17/12/2013	1	08:15	09:00	20	Commute/Forage/Rest	Inshore
16/12/2013	2	15:00	15:45	80	Rest	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
17/12/2013	2	07:15	08:00	100	Commute/Forage/Rest	Inshore
16/12/2013	3	15:15	16:00	10	Commute	Inshore
17/12/2013	3	07:15	08:00	70	Rest	On shore
17/12/2013	4	15:50	16:35	4	Commute	Inshore
17/12/2013	5	15:30	16:15	5	Commute	Inshore
17/12/2013	6	14:30	15:15	3	Commute	Inshore
17/12/2013	7	14:30	15:15	4	Commute	Inshore
17/12/2013	8	13:15	14:00	8	Commute	Inshore
17/12/2013	9	13:30	14:15	20	Forage	Inshore
17/12/2013	10	12:15	13:00	30	Forage	Inshore
17/12/2013	11	11:00	11:45	20	Commute/Forage	Inshore
17/12/2013	12	09:30	10:15	20	Forage	Inshore
17/12/2013	13	09:55	10:40	20	Commute/Forage	Inshore
17/12/2013	14	11:00	11:45	6	Commute/Forage	Inshore
17/12/2013	15	12:00	12:45	5	Commute/Forage	Inshore
09/01/2014	1	13:15	14:00	4	Forage	Inshore
09/01/2014	3	13:45	14:30	20	Commute/Forage	Inshore
09/01/2014	4	12:45	13:30	6	Commute	Inshore
09/01/2014	6	10:20	11:05	4	Commute	Inshore
09/01/2014	4	09:25	10:10	4	Commute	Inshore
08/01/2014	8	15:00	15:45	4	Commute	Inshore
08/01/2014	9	15:15	16:00	10	Commute	Inshore
09/01/2014	9	07:15	08:00	2	Commute	Inshore
09/01/2014	13	12:15	13:00	2	Forage	Inshore
09/01/2014	14	10:15	11:00	4	Forage	Inshore
23/01/2014	1	08:15	09:00	10	Forage	Inshore
22/01/2014	2	15:30	16:15	60	Forage/Rest	Inshore
23/01/2014	2	06:45	07:30	60	Forage/Rest	Inshore
22/01/2014	3	15:30	16:15	10	Commute/Rest	Inshore
23/01/2014	3	06:45	07:30	25	Commute	Inshore
23/01/2014	4	13:00	13:45	6	Forage	Inshore
23/01/2014	5	15:45	16:30	20	Commute/Forage	Inshore
23/01/2014	6	15:45	16:30	30	Commute/Rest	

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
23/01/2014	7	14:25	15:10	10	Commute/Rest	
23/01/2014	8	14:45	15:30	25	Commute/Forage	
23/01/2014	9	13:25	14:10	30	Commute/Forage	Inshore
23/01/2014	10	12:00	12:45	20	Commute/Forage	Inshore
23/01/2014	11	10:50	11:35	35	Forage/Rest	Inshore
23/01/2014	12	09:20	10:05	16	Commute/Forage	Inshore
23/01/2014	13	12:00	12:45	4	Forage	Inshore
23/01/2014	14	11:00	11:45	2	Forage	
04/02/2014	1	11:30	12:15	2	Commute	Inshore
04/02/2014	2	12:50	13:35	45	Commute/Forage/Rest	Inshore
04/02/2014	3	13:40	14:25	10	Commute/Forage	Inshore
04/02/2014	4	14:40	15:25	10	Commute	Inshore
04/02/2014	5	16:00	16:45	15	Commute	Inshore
03/02/2014	6	15:50	16:35	10	Commute	Inshore
04/02/2014	6	07:20	08:05	25	Commute/Forage	Inshore
04/02/2014	7	07:20	08:05	9	Commute	Inshore
03/02/2014	7	15:50	16:35	2	Commute	Inshore
04/02/2014	8	14:30	15:15	10	Commute/Forage	Inshore
04/02/2014	9	13:20	14:05	6	Forage	Inshore
04/02/2014	10	12:00	12:45	10	Commute/Forage	Inshore
04/02/2014	11	10:35	11:20	12	Commute/Forage	Inshore
04/02/2014	12	09:20	10:05	15	Forage	Inshore
04/02/2014	13	10:40	11:25	6	Commute/Forage	Inshore
04/02/2014	14	09:45	10:30	4	Commute/Forage	Inshore
04/02/2014	15	08:30	09:15	4	Commute	Inshore
20/02/2014	1	10:55	11:40	1	Commute	Inshore
20/02/2014	2	12:10	12:55	86	Commute/Rest	Inshore
20/02/2014	3	13:20	14:05	41	Commute/Rest	Inshore
20/02/2014	4	14:30	15:15	6	Commute	Inshore
20/02/2014	5	07:15	08:00	15	Commute/Forage	Inshore
20/02/2014	6	07:15	08:00	16	Commute	Inshore
20/02/2014	7	15:50	16:35	1	Commute	Inshore
20/02/2014	9	13:30	14:15	2	Commute	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
20/02/2014	10	12:15	13:00	5	Forage	
20/02/2014	11	11:00	11:45	5	Commute	Inshore
20/02/2014	12	09:15	10:00	15	Commute/Forage	Inshore
20/02/2014	13	09:30	10:15	4	Commute	Inshore
21/02/2014	14	06:30	07:15	3	Commute	Inshore
21/02/2014	15	06:30	07:15	2	Commute	Inshore
06/03/2014	1	10:35	11:20	4	Forage	Inshore
06/03/2014	2	12:45	13:30	90	Forage/Rest	Inshore
06/03/2014	3	12:40	13:25	30	Forage/Rest	Inshore
06/03/2014	4	13:45	14:30	20	Commute/Forage	Inshore
06/03/2014	5	13:50	14:35	15	Commute	Inshore
06/03/2014	6	06:15	07:00	4	Commute	Inshore
06/03/2014	7	06:15	07:00	11	Commute	Inshore
06/03/2014	6	13:45	14:30	1	Forage	Inshore
06/03/2014	9	12:30	13:15	12	Commute	Inshore
06/03/2014	10	11:15	12:00	1	Commute	Inshore
06/03/2014	11	10:05	10:50	3	Commute	Inshore
06/03/2014	12	08:50	09:35	2	Commute	Inshore
06/03/2014	13	10:30	11:15	3	Forage	Inshore
06/03/2014	14	09:25	10:10	6	Commute/Forage	Inshore
06/03/2014	15	08:25	09:10	6	Commute/Forage	Inshore
18/03/2014	4	17:45	18:30	4	Commute	Inshore
19/03/2014	1	09:50	10:35	2	Commute	Inshore
19/03/2014	2	08:00	08:45	50	Rest	Inshore
19/03/2014	3	07:00	07:45	40	Commute/Forage/Rest	Inshore
19/03/2014	4	05:50	06:35	60	Commute/Forage	Inshore
19/03/2014	5	05:45	06:30	15	Commute/Forage	Inshore
19/03/2014	6	06:45	07:30	10	Commute/Forage	Inshore
19/03/2014	8	14:15	15:00	1	Forage	Inshore
19/03/2014	10	11:40	12:25	6	Commute	Inshore
19/03/2014	11	10:25	11:10	15	Commute/Forage	Inshore
19/03/2014	12	09:00	09:45	3	Commute/Forage	Inshore
Black-headed gull sightings recorded during the little tern survey 2013						

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
29/03/2013	7	10:10	10:55	30	Commute/Forage	Inshore
29/03/2013	8	11:10	11:55	30	Commute/Forage	Inshore
30/03/2015	15	08:00	08:45	40	Commute/Forage	Inshore
13/05/2013	15	12:30	13:15	10	Forage	Inshore
13/05/2013	14	13:45	14:30	1	Rest	Inshore
13/05/2013	13	14:40	15:25	8	Forage/Rest	Inshore
13/05/2013	1	15:35	16:20	15	Commute/Forage	Inshore
13/05/2013	7	17:45	18:30	4	Commute	Inshore
13/05/2013	9	19:00	19:45	25	Forage/Rest	Inshore
14/05/2013	8	14:00	14:45	40	Forage/Rest	Inshore
15/05/2013	6	09:15	10:00	6	Commute/Rest	Inshore
15/05/2013	3	10:20	11:05	1	Forage/Rest	Inshore
28/05/2013	2	06:10	06:55	40	Commute/Forage	Inshore
28/05/2013	3	07:15	08:00	60	Commute/Forage	Inshore
28/05/2013	4	18:30	17:15	20	Commute/Forage	Inshore
28/05/2013	5	19:45	10:30	4	Commute	Inshore
29/05/2013	6	09:15	10:00	11	Commute	Inshore
29/05/2013	9	12:15	13:00	10	Commute/Rest	Inshore
29/05/2013	10	14:00	14:45	3	Commute	Inshore
29/05/2013	12	16:40	17:25	10	Commute/Forage	Inshore
30/05/2013	14	09:00	09:45	40	Forage	Inshore
30/05/2013	13	10:00	10:45	60	Forage	Inshore
30/05/2013	1	10:55	11:40	40	Forage	Inshore
10/06/2013	4	13:00	13:45	10	Commute	Inshore
10/06/2013	5	13:00	13:45	75	Commute	Inshore
10/06/2013	4	14:00	14:45	4	Commute	Inshore
10/06/2013	3	15:00	15:45	4	Commute	Inshore
10/06/2013	2	16:00	16:45	10	Commute	Inshore
11/06/2013	15	06:15	07:00	50	Commute	Inshore
11/06/2013	14	07:15	08:00	40	Commute	Inshore
11/06/2013	13	09:45	10:30	10	Commute/Forage	Inshore
11/06/2013	1	11:15	12:00	10	Commute	Inshore
11/06/2013	7	14:30	13:15	2	Commute	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
11/06/2013	6	15:30	16:15	4	Commute	Inshore
12/06/2013	8	06:45	07:30	10	Commute	Inshore
12/06/2013	10	10:00	10:45	10	Commute	Inshore
12/06/2013	9	11:45	12:30	4	Commute	Inshore
24/06/2013	9	16:45	17:30	20	Forage	Inshore
24/06/2013	8	17:45	18:30	10	Commute	Inshore
25/06/2013	7	06:30	07:15	40	Forage	Inshore
25/06/2013	6	07:30	08:15	20	Rest	Inshore
25/06/2013	5	09:30	10:15	25	Forage	Inshore
25/06/2013	4	10:30	11:15	20	Forage	Inshore
25/06/2013	15	17:15	18:00	20	Forage	Inshore
26/06/2013	10	07:30	08:15	10	Commute/Forage	Inshore
26/06/2013	14	10:00	10:45	20	Forage	Inshore
26/06/2013	13	11:00	11:45	40	Forage	Inshore
26/06/2013	3	17:30	18:15	30	Forage	Inshore
26/06/2013	3	17:30	18:15	60	Forage	Inshore
27/06/2013	1	10:30	11:15	60	Forage	Inshore
27/06/2013	2	11:30	12:15	20	Forage	Inshore
08/07/2013	5	17:20	18:05	2	Commute	Inshore
08/07/2013	7	19:10	19:55	3	Forage	Inshore
09/07/2013	2	14:45	15:30	50	Forage	Inshore
09/07/2013	3	15:40	16:25	60	Forage	Inshore
09/07/2013	4	16:40	17:25	9	Commute/Rest	Inshore
09/07/2013	8	17:50	18:35	25	Forage	Inshore
09/07/2013	9	18:50	19:35	40	Forage	Inshore
10/07/2013	15	08:45	09:30	15	Forage	Inshore
10/07/2013	14	09:50	10:35	11	Forage	Inshore
10/07/2013	13	10:45	11:30	20	Commute/Forage	Inshore
10/07/2013	1	11:40	12:25	10	Forage	Inshore
24/07/2013	15	13:00	13:45	20	Commute/Rest	Inshore
24/07/2013	14	14:15	15:00	10	Rest	Inshore
24/07/2013	13	15:15	16:00	10	Commute	Inshore
25/07/2013	8	06:30	07:15	4	Commute	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
25/07/2013	10	13:00	13:45	4	Forage	Inshore
25/07/2013	9	15:00	15:45	4	Commute	Inshore
25/07/2013	7	16:00	16:45	40	Forage	Inshore
25/07/2013	5	17:30	18:15	20	Forage	Inshore
25/07/2013	4	18:30	19:15	20	Forage	Inshore
26/07/2013	3	08:00	08:15	50	Rest	Inshore
26/07/2013	2	09:00	09:45	100	Forage	Inshore
26/07/2013	1	10:00	10:45	10	Forage	Inshore
06/08/2013	6	06:45	07:30	3	Rest	Inshore
06/08/2013	8	08:40	09:25	13	Forage/Rest	Inshore
06/08/2013	9	10:15	11:00	6	Forage	Inshore
06/08/2013	11	13:05	13:50	12	Forage/Rest	Inshore
06/08/2013	4	18:00	18:45	18	Commute/ Forage	Inshore
07/08/2013	3	07:05	07:50	40	Forage/Rest	Inshore
07/08/2013	2	08:15	09:00	50	Forage	Inshore
07/08/2013	1	09:30	10:15	5	Forage	Inshore
07/07/2013	14	10:30	11:15	10	Forage	Inshore
07/08/2013	13	11:35	12:20	25	Commute/ Forage	Inshore
19/08/2013	15	16:15	17:00	42	Commute/ Forage	Inshore
19/08/2013	3	17:30	18:15	30	Commute/ Forage/Rest	Inshore
19/08/2013	7	18:40	19:25	16	Commute/ Forage/Rest	Inshore
20/08/2013	4	15:45	16:30	20	Rest	Inshore
20/08/2013	6	17:45	18:30	2	Forage	Inshore
21/08/2013	2	08:40	09:25	20	Forage	Inshore
Black-headed gull sightings recorded during the cormorant surveys 2014-2015						
12/11/2014	2	07:00	07:45	50	Commute	Inshore
12/11/2014	2	15:50	16:35	50	Rest	Inshore
12/11/2014	3	10:25	11:10	15	Commute/Rest	Inshore
12/11/2014	3	07:00	07:45	120	Commute	Inshore
12/11/2014	3	15:50	16:35	90	Commute/Rest	Inshore
12/11/2014	4	08:10	08:55	40	Commute	Inshore
12/11/2014	5	09:10	09:55	25	Commute	Inshore
12/11/2014	6	12:10	12:55	10	Commute	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
12/11/2014	7	13:15	14:00	5	Commute	Inshore/On shore
12/11/2014	8	15:45	16:30	200	Rest	Inshore
12/11/2014	9	14:15	15:00	15	Commute	Inshore
12/11/2014	11	11:10	11:55	3	Commute/Forage	Inshore
12/11/2014	12	09:10	09:55	5	Commute/Forage	Inshore
12/11/2014	15	13:10	13:55	15	Commute	Inshore
25/11/2014	2	10:38	11:23	15	Commute	Inshore
25/11/2014	2	15:40	16:25	70	Commute/Forage	Inshore
25/11/2014	3	10:38	11:23	1	Rest	On shore
25/11/2014	3	15:38	16:23	73	Commute/Rest	Inshore/On shore
25/11/2014	4	09:38	10:23	5	Commute/Forage	Inshore
25/11/2014	5	08:23	09:08	11	Commute/Forage	Inshore/On shore
25/11/2014	6	07:10	07:55	9	Commute/Forage	Inshore/On shore
25/11/2014	6	12:20	13:05	11	Commute/Forage	Inshore
25/11/2014	7	13:20	14:05	18	Commute/Forage/Rest	Inshore/On shore
25/11/2014	8	14:30	15:15	40	Commute/Rest	Inshore
25/11/2014	9	13:15	14:00	40	Commute/Rest	Inshore
25/11/2014	10	12:00	12:45	15	Commute	Inshore
25/11/2014	11	10:45	11:30	3	Commute	Inshore
25/11/2014	12	09:10	09:55	10	Commute	Inshore
25/11/2014	13	13:00	13:45	7	Commute	Inshore
25/11/2014	14	08:05	08:50	18	Commute	Inshore
25/11/2014	15	07:10	07:55	80	Commute	Inshore
25/11/2014	15	09:00	09:45	7	Commute	Inshore
03/12/2014	2	15:25	16:10	30	Commute/Rest	Inshore
03/12/2014	3	10:55	11:40	5	Commute	Inshore
03/12/2014	3	15:25	16:10	3	Commute	Inshore
03/12/2014	4	07:30	08:15	10	Commute	Inshore
03/12/2014	5	14:10	14:55	11	Commute	Inshore
03/12/2014	7	12:55	13:40	10	Commute	Inshore
03/12/2014	8	15:05	15:50	18	Forage/Rest	Inshore
03/12/2014	9	13:50	14:35	4	Commute	Inshore
03/12/2014	10	12:40	13:25	12	Commute	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
03/12/2014	11	11:10	11:55	8	Commute/Forage/Rest	Inshore/On shore
03/12/2014	12	09:15	10:00	5	Rest	Inshore/On shore
03/12/2014	15	12:15	1300	7	Commute	Inshore
16/12/2014	2	11:10	11:55	12	Forage/Rest	Inshore
17/12/2014	2	15:20	16:05	210	Commute/Forage/Rest	Inshore/On shore
17/12/2014	3	15:20	16:05	525	Rest	Inshore
16/12/2014	4	9;40	10:25	3	Commute	Inshore
16/12/2014	5	08:30	09:15	1	Commute	Inshore
16/12/2014	6	07:20	08:05	250	Commute	Inshore
16/12/2014	6	12:55	13:40	2	Commute	Inshore
16/12/2014	8	14:35	15:20	10	Commute	Inshore
16/12/2014	9	13:15	14:00	7	Commute/Rest	Inshore
16/12/2014	10	12:00	12:45	15	Commute/Rest	Inshore
16/12/2014	11	10:40	11:25	5	Commute	Inshore
16/12/2014	12	09:05	09:50	10	Commute	Inshore
16/12/2014	14	13:15	14:00	8	Commute/Forage/Rest	Inshore/On shore
16/12/2014	15	14:10	14:55	284	Commute/Rest	Inshore
07/01/2015	1	10:05	10:50	15	Commute	Inshore
07/01/2015	2	11:20	12:05	10	Forage	Inshore
07/01/2015	2	15:40	16:25	150	Forage/Rest	Inshore
07/01/2015	3	11:20	12:05	25	Rest	Inshore
07/01/2015	3	15:40	16:25	250	Rest	Inshore
07/01/2015	4	13:50	14:35	15	Commute/Rest	Inshore
07/01/2015	5	12:40	13:25	10	Commute	Inshore
07/01/2015	6	09:48	10:33	75	Rest	Inshore
07/01/2015	7	08:30	09:15	5	Commute	Inshore
07/01/2015	8	07:35	08:20	10	Commute	Inshore
07/01/2015	8	15:10	15:55	3	Commute	Inshore/On shore
07/01/2015	9	13:55	14:40	7	Commute	Inshore
07/01/2015	10	12:55	13:40	4	Commute	Inshore
07/01/2015	11	11:15	12:00	2	Commute/Forage	On shore
07/01/2015	13	08:50	09:35	10	Commute/Rest	Inshore
07/01/2015	14	13:25	14:10	5	Commute	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
07/01/2015	15	07:40	08:25	40	Commute	Inshore
07/01/2015	15	14:25	15:10	45	Commute/Rest	Inshore
20/01/2015	2	11:20	12:05	300	Forage/Rest	Inshore
20/01/2015	2	15:45	16:30	1500	Forage/Rest	Inshore
20/01/2015	3	11:20	12:05	30	Rest	Inshore
20/01/2015	3	15:45	16:30	500	Rest	Inshore
20/01/2015	4	12:40	13:25	45	Commute/Rest	Inshore
20/01/2015	5	09:55	10:40	220	Commute/Rest	Inshore
20/01/2015	6	08:50	09:35	350	Commute	Inshore
20/01/2015	7	07:40	08:25	1300	Commute/Rest	Inshore
20/01/2015	7	14:00	14:45	75	Commute/Rest	Inshore
20/01/2015	8	14:50	15:35	35	Commute/Forage	Inshore
20/01/2015	9	13:35	14:20	20	Commute/Forage	Inshore
20/01/2015	10	12:30	13:15	35	Commute/Forage	Inshore
20/01/2015	11	11:00	11:45	5	Commute	Inshore
20/01/2015	12	09:15	10:00	90	Commute/Forage/Rest	Inshore
20/01/2015	14	07:35	08:20	50	Commute	Inshore
20/01/2015	14	14:00	14:45	50	Commute	Inshore
20/01/2015	15	13:00	13:45	22	Rest	Inshore
04/02/2015	2	16:30	17:15	40	Rest	Inshore
04/02/2015	2	16:30	17:15	15	Commute	Inshore
04/02/2015	3	10:06	10:51	20	Commute	Inshore
04/02/2015	3	16:30	17:15	430	Commute/Commute	Inshore
04/02/2015	4	11:30	12:15	20	Commute	Inshore
04/02/2015	5	12:47	13:32	20	Commute	Inshore
04/02/2015	6	08:22	10:07	55	Commute	Inshore
04/02/2015	7	07:00	07:45	250	Commute/Forage/Rest	Inshore
04/02/2015	7	14:10	14:55	15	Commute/Rest	Inshore
04/02/2015	8	15:45	16:30	300	Rest	Inshore
04/02/2015	9	14:25	15:10	5	Commute	Inshore
04/02/2015	10	13:20	14:05	30	Commute/Rest	Inshore
04/02/2015	11	11:45	12:30	20	Commute/Forage	Inshore
04/02/2015	12	09:55	10:40	10	Commute/Forage	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
04/02/2015	13	07:00	07:45	82	Commute	Inshore
04/02/2015	13	11:50	12:35	4	Commute	On shore
04/02/2015	14	08:04	08:49	40	Commute	Inshore
04/02/2015	15	11:35	12:20	2	Rest	On shore
17/02/2015	1	07:05	07:50	30	Commute	Inshore
17/02/2015	1	15:50	16:35	40	Commute/Rest	Inshore
17/02/2015	2	09:50	10:35	90	Commute/Forage/Rest	Inshore
17/02/2015	2	16:45	17:30	120	Commute/Forage/Rest	Inshore
17/02/2015	3	16:45	17:30	300	Rest	Inshore
17/02/2015	5	06:57	07:42	25	Commute	Inshore
17/02/2015	5	15:05	15:50	95	Commute/Rest	Inshore
17/02/2015	8	15:30	16:15	30	Commute/Rest	Inshore
17/02/2015	9	14:10	14:55	1	Commute	Inshore
17/02/2015	10	12:55	13:40	1	Commute	Inshore
17/02/2015	11	10:55	11:40	2	Commute	Inshore
17/02/2015	12	09:05	09:50	5	Commute	Inshore
17/02/2015	13	12:55	13:40	12	Commute	Inshore
17/02/2015	15	11:50	12:35	10	Commute	Inshore
17/03/2015	2	07:00	07:45	100	Commute	Inshore
17/03/2015	3	07:00	07:45	400	Commute/Rest	Inshore
17/03/2015	3	17:35	18:20	150	Commute/Rest	Inshore
17/03/2015	4	11:20	12:05	8	Commute	Inshore
17/03/2015	6	05:50	06:35	410	Commute/Rest	Inshore
17/03/2015	6	10:10	10:55	10	Commute	Inshore
17/03/2015	7	15:20	16:05	30	Commute	Inshore
17/03/2015	8	05:50	06:35	250	Commute	Inshore
17/03/2015	8	14:10	14:55	15	Commute	Inshore
17/03/2015	9	12:55	13:40	7	Commute	Inshore
17/03/2015	10	11:45	12:30	6	Commute	Inshore
17/03/2015	13	14:50	15:35	11	Commute	Inshore
17/03/2015	14	15:43	16:28	100	Commute	Inshore
17/03/2015	15	12:33	13:18	7	Commute	Inshore

Table 1.85: Herring gull sightings from Arcadis coastal surveys.

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
Red-throated diver survey 2012-2013						
30/10/2012	2	16:00	16:45	40	Forage/Rest	Inshore
30/10/2012	3	16:00	16:45	40	Forage/Rest	Inshore
31/10/2012	3	06:15	07:00	78	Rest	Inshore
31/10/2012	2	06:15	07:00	50	Commute/Forage/Rest	Inshore/On shore
31/10/2012	6	08:15	09:00	6	Rest	On shore
31/10/2012	11	10:20	11:05	6	Commute	Inshore
31/10/2012	5	09:20	10:05	2	Forage/Rest	Inshore
31/10/2012	4	10:45	11:30	6	Rest	On shore
31/10/2012	1	12:40	13:25	5	Rest	On shore
31/10/2012	8	13:15	14:00	10	Rest	On shore
31/10/2012	7	14:30	15:15	4	Rest	On shore
31/10/2012	15	15:45	16:30	2	Commute	On shore
27/11/2012	1	12:10	12:55	7	Commute	
27/11/2012	2	15:30	16:15	60		
27/11/2012	3	15:30	16:15	15	Commute	
27/11/2012	4	07:00	07:45	6	Commute	Inshore
27/11/2012	5	14:05	14:50	12	Commute	
27/11/2012	7	14:35	15:20	3	Commute	
27/11/2012	8	16:45	17:30	20	Rest	On shore
27/11/2012	9	12:45	13:30	4	Rest	
27/11/2012	10	11:35	12:20	8	Forage	
27/11/2012	11	10:20	11:05	1		On shore
27/11/2012	12	09:05	09:50	2	Rest	Inshore
27/11/2012	13	11:05	11:50	6	Commute	
27/11/2012	14	10:00	10:45	4	Commute	Inshore
27/11/2012	15	08:45	09:30	12	Commute/Forage	Inshore/On shore
28/11/2012	2	07:00	07:45	150	Forage	Inshore
28/11/2012	7	08:30	09:15	12	Commute	Inshore/On shore
28/11/2012	11	13:10	13:55	17	Commute/Rest	Inshore
28/11/2012	12	14:30	15:15	12	Commute/Rest	Inshore
28/11/2012	10	12:10	12:55	4	Commute/Rest	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
28/11/2012	9	10:35	11:20	7	Commute	Inshore/On shore
28/11/2012	8	09:30	10:15	80	Commute/Forage/Rest	Inshore/On shore
28/11/2012	1	12:45	13:30	2	Rest	Inshore
28/11/2012	3	14:30	15:15	2	Rest	Inshore
28/11/2012	4	07:00	07:45	8	Rest	On shore
28/11/2012	6	08:30	09:15	18	Rest	Inshore
28/11/2012	14	11:00	11:45	20	Commute	
28/11/2012	15	10:00	10:45	10	Rest	On shore
29/11/2012	3	07:00	07:45	125	Commute/Forage/rest	Inshore/On shore
29/11/2012	3	07:00	07:45	20	Rest	Inshore
11/12/2012	3	15:30	16:15	49	Commute/Forage/Rest	Inshore
11/12/2012	2	15:30	16:15	40		
12/12/2012	2	06:45	07:30	62	Forage	Inshore
12/12/2012	3	06:45	07:30	200	Rest	Inshore
12/12/2012	7	08:00	08:45	4	Forage	Inshore
12/12/2012	6	08:00	08:45	12	Commute/Forage	Inshore/On shore
12/12/2012	14	10:30	11:15	3	Rest	Inshore
12/12/2012	10	11:05	11:50	10	Commute	Inshore
12/12/2012	13	11:30	12:15	4	Commute	Inshore
12/12/2012	11	12:30	13:45	4	Forage	
12/12/2012	5	15:20	16:05	1	Rest	On shore
13/12/2012	3	11:00	11:45	20	Rest	Inshore
18/12/2012	15	13:40	14:25	15	Commute/Rest	Inshore
18/12/2012	1	15:10	15:55	17	Commute/Rest	Inshore
18/12/2012	4	15:10	15:55	40	Rest	Inshore/On shore
19/12/2012	4	07:00	07:45	10	Commute	Inshore
19/12/2012	1	07:20	08:05	50	Commute	Inshore/On shore
19/12/2012	12	09:30	10:15	2	Commute	Inshore
19/12/2012	6	10:00	10:45	8	Commute	Inshore/On shore
19/12/2012	5	10:55	11:40	15	Commute/Rest	Inshore
19/12/2012	11	11:00	11:45	4	Commute	Inshore
19/12/2012	10	12:15	13:00	2	Commute	Inshore
19/12/2012	3	12:20	13:05	4	Rest	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
19/12/2012	2	13:15	14:00	50	Commute/Forage	Inshore
19/12/2012	9	14:00	14:45	4	Rest	Inshore
19/12/2012	13	14:40	15:25	7	Commute	Inshore
19/12/2012	8	15:15	16:00	20	Forage	Inshore
02/01/2013	3	15:15	16:00	20	Rest	Inshore
03/01/2013	4	07:00	07:45	4	Rest	On shore
03/01/2013	3	07:00	07:45	40	Rest	Inshore
03/01/2013	8	08:30	09:15	10	Commute	Inshore
03/01/2013	13	09:00	09:45	20	Commute	Inshore
03/01/2013	10	11:00	11:45	4	Forage	Inshore
03/01/2013	1	11:00	11:45	32	Commute/Rest	Inshore
03/01/2013	2	12:00	12:45	20	Forage	Inshore
03/01/2013	5	13:25	14:10	8	Commute/Rest	Inshore
03/01/2013	6	14:30	15:15	8	Rest	Inshore
03/01/2013	7	15:25	16:10	120	Commute	Inshore
21/01/2013	1	16:00	16:45	40	Commute/Rest	Inshore
21/01/2013	2	16:00	16:45	35	Commute/Rest	Inshore
22/01/2013	12	09:25	10:10	6	Commute	Inshore
22/01/2013	11	11:05	11:50	2	Commute	Inshore
22/01/2013	10	12:20	13:05	12	Commute/Forage	Inshore
22/01/2013	9	13:40	14:25	20	Commute/Rest	Inshore/On shore
22/01/2013	8	14:45	15:30	20	Commute	Inshore/On shore
22/01/2013	7	15:40	16:25	15	Commute/Rest	Inshore
22/01/2013	1	07:25	08:10	30	Forage/Rest	Inshore/On shore
22/01/2013	4	08:50	09:35	25	Commute/Rest	Inshore
22/01/2013	3	09:45	10:30	28	Commute/Forage	Inshore
22/01/2013	13	11:00	11:45	20	Forage/rest	Inshore
22/01/2013	14	12:00	12:45	54	Rest	On shore
22/01/2013	15	13:00	13:45	5	Commute	Inshore
22/01/2013	5	14:25	15:10	4	Commute/Forage/Rest	Inshore/On shore
22/01/2013	5	14:25	15:10	16	Commute/Forage/Rest	Inshore
22/01/2013	6	15:30	16:15	60	Commute/Forage	Inshore/On shore
05/02/2013	3	16:15	17:00	50	Commute/Rest	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
06/02/2013	3	07:00	07:45	30	Forage	Inshore
06/02/2013	12	10:00	10:45	10	Forage	Inshore
06/02/2013	13	12:30	13:15	12	Commute/Rest	Inshore
06/02/2013	14	13:25	14:10	8	Forage/Rest	Inshore
06/02/2013	8	15:15	16:00	10	Forage	Inshore
06/02/2013	7	16:15	17:00	4	Commute	
18/02/2013	15	14:45	15:30	20	Rest	Inshore
18/02/2013	14	14:45	15:30	3	Rest	Inshore
18/02/2013	1	16:30	17:15	80	Rest	Inshore
18/02/2013	2	16:15	17:00	320	Rest	Inshore
19/02/2013	1	07:00	07:45	60	Rest	Inshore
19/02/2013	2	07:00	07:45	350	Forage/Rest	Inshore
19/02/2013	8	08:45	09:30	10	Rest	Inshore
19/02/2013	13	09:15	10:00	42	Rest	Inshore
19/02/2013	9	10:15	11:00	10	Rest	Inshore
19/02/2013	3	10:45	11:30	60	Rest	Inshore
19/02/2013	4	11:50	12:35	100	Rest	Inshore
19/02/2013	5	12:55	13:40	80	Rest	Inshore
19/02/2013	11	13:00	13:45	10	Rest	Inshore
19/02/2013	6	14:20	15:05	70	Rest	Inshore
19/02/2013	12	14:45	15:30	100	Rest	Inshore
19/02/2013	7	15:15	16:00	16	Rest	Inshore
04/03/2013	4	16:45	17:30	6	Commute	On shore
04/03/2013	4	16:45	17:30	40	Rest	Inshore
04/03/2013	4	16:45	17:30	100	Forage	Inshore
05/03/2013	3	06:25	07:10	50	Rest	Inshore
05/03/2013	4	06:30	07:15	20	Rest	Inshore
05/03/2013	6	08:50	09:35	40	Rest	Inshore
05/03/2013	5	10:20	11:05	40	Rest	Inshore
05/03/2013	11	10:45	11:30	4	Rest	Inshore
05/03/2013	2	11:55	12:40	60	Forage/ Rest	Inshore
05/03/2013	10	12:15	13:00	4	Commute	Inshore
05/03/2013	1	12:55	13:40	7	Rest	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
05/03/2013	9	13:45	14:30	4	Rest	Inshore
05/03/2013	13	14:45	15:30	5	Rest	Inshore
05/03/2013	8	14:45	15:30	10	Rest	Inshore
05/03/2013	14	15:45	16:30	10	Rest	Inshore
05/03/2013	7	15:45	16:30	10	Rest	Inshore
05/03/2013	15	16:45	17:30	10	Rest	Inshore
26/03/2013	1	17:30	18:15	10	Commute	On shore
27/03/2013	2	05:50	06:35	20	Forage	On shore
27/03/2013	1	06:00	06:45	20	Forage	Inshore
27/03/2013	12	09:00	09:45	45	Commute/Forage	On shore
27/03/2013	11	10:45	11:30	20	Forage	On shore
27/03/2013	10	11:50	12:35	15	Forage	On shore
27/03/2013	14	12:45	13:30	40	Forage	Inshore
27/03/2013	9	13:15	14:00	40	Forage	On shore
27/03/2013	8	14:15	15:00	60	Forage	On shore
27/03/2013	5	15:00	15:45	20	Commute	Inshore
27/03/2013	7	15:15	16:00	30	Forage	On shore
Red-throated diver survey 2013-2014						
17/10/2013	2	16:45	17:30	40	Commute/Forage/Rest	Inshore
17/10/2013	3	07:00	07:45	20		
17/10/2013	4	07:00	07:45	20	Commute	Inshore
17/10/2013	6	15:45	16:30	4	Rest	
17/10/2013	7	14:15	15:00	4	Forage	On shore
17/10/2013	8	12:45	13:30	20	Rest	Inshore
17/10/2013	9	11:15	12:00	20	Commute	Inshore
17/10/2013	13	13:45	14:30	8	Commute	On shore
17/10/2013	14	12:45	13:30	10	Forage	Inshore
17/10/2013	15	11:45	12:30	3	Commute	
18/10/2013	15	06:45	07:30	20		Inshore
31/10/2013	1	11:40	12:25	3	Rest	
31/10/2013	2	09:45	10:30	13	Commute/Forage	Inshore
31/10/2013	3	08:40	09:25	13	Commute	Inshore/On shore
31/10/2013	4	15:15	16:00	4	Commute	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
31/10/2013	5	14:00	14:45	2	Commute	Inshore
31/10/2013	6	12:30	13:15	4	Commute	On shore
31/10/2013	7	11:15	12:00	4	Commute	Inshore
31/10/2013	7	16:20	17:05	3	Commute	Inshore
01/11/2013	7	06:35	07:20	11	Commute/Forage	Inshore
31/10/2013	8	10:10	10:55	4	Rest	Inshore
31/10/2013	9	08:30	09:15	4	Commute	Inshore
01/11/2013	6	06:30	07:15	5	Commute	Inshore
31/10/2013	13	12:40	13:25	4	Commute	Inshore
31/10/2013	14	13:35	14:20	3	Commute	Inshore
31/10/2013	15	14:55	15:40	7	Commute	Inshore
12/11/2013	1	12:45	13:30	6	Commute/Rest	Inshore
12/11/2013	2	13:40	14:25	40	Forage	Inshore
12/11/2013	3	14:35	15:20	40	Rest	Inshore
12/11/2013	4	15:45	16:30	80	Rest	Inshore
13/11/2013	4	06:50	07:35	60	Commute/Forage	Inshore
12/11/2013	5	15:40	16:25	50	Commute/Rest	Inshore
13/11/2013	5	06:45	07:30	50	Commute	Inshore
12/11/2013	6	07:25	08:10	12	Commute	On shore
12/11/2013	7	07:25	08:10	11	Forage	Inshore
12/11/2013	8	14:35	15:20	52	Commute/Rest	Inshore/On shore
12/11/2013	9	13:25	14:10	12	Commute	Inshore
12/11/2013	10	12:05	12:50	4	Commute	On shore
12/11/2013	11	10:50	11:35	14	Commute	Inshore
12/11/2013	12	09:20	10:05	7	Commute	On shore
12/11/2013	13	11:10	11:55	8	Commute	Inshore
12/11/2013	14	10:15	11:00	8	Commute	Inshore
12/11/2013	15	09:10	09:55	25	Commute/Forage	Inshore
26/11/2013	1	11:30	12:15	5	Forage	Inshore
26/11/2013	2	13:25	14:10	100	Forage	Inshore
26/11/2013	3	14:20	15:05	60	Forage	Inshore/On shore
26/11/2013	5	07:00	07:45	120	Commute/Forage	Inshore
26/11/2013	6	15:20	16:05	120	Commute/Forage/Rest	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
27/11/2013	6	07:00	07:45	100	Commute/Forage/Rest	Inshore/On shore
27/11/2013	7	07:00	07:45	20	Rest	On shore
26/11/2013	8	15:15	16:00	15	Rest	Inshore
26/11/2013	9	14:00	14:45	20	Rest	Inshore
26/11/2013	10	12:45	13:30	2	Rest	Inshore
26/11/2013	11	11:15	12:00	1		
26/11/2013	12	09:30	10:15	10	Forage/Rest	Inshore
26/11/2013	13	10:30	11:15	10	Forage	Inshore
26/11/2013	14	09:30	10:15	30	Commute/Forage	Inshore
26/11/2013	15	08:25	09:10	40	Commute/Forage	Inshore
05/12/2013	2	07:30	08:15	70	Forage	
05/12/2013	3	07:30	08:15	80	Forage/Rest	Inshore/On shore
05/12/2013	4	08:45	09:30	10	Forage	Inshore
05/12/2013	5	09:55	10:40	15	Forage	Inshore
05/12/2013	7	11:50	12:35	5	Forage/Rest	
05/12/2013	8	12:50	13:35	20	Forage/Rest	On shore
05/12/2013	9	13:50	14:35	20	Forage/Rest	On shore
05/12/2013	13	11:15	12:00	10	Commute	Inshore
05/12/2013	14	10:15	11:00	10	Commute	Inshore
06/12/2013	14	08:15	09:00	10	Commute	Inshore
05/12/2013	15	09:00	09:45	10	Commute	Inshore
06/12/2013	15	08:15	09:00	15	Forage	Inshore/On shore
17/12/2013	1	08:15	09:00	20	Commute/Forage/Rest	Inshore
16/12/2013	2	15:00	15:45	50	Forage	Inshore
17/12/2013	2	07:15	08:00	50	Commute/Forage/Rest	Inshore
17/12/2013	3	07:15	08:00	40	Rest	On shore
17/12/2013	5	15:30	16:15	10	Commute	Inshore
17/12/2013	6	14:30	15:15	6	Forage	Inshore
17/12/2013	8	13:15	14:00	15	Forage	On shore
17/12/2013	9	13:30	14:15	4	Forage	Inshore
17/12/2013	10	12:15	13:00	4	Commute	Inshore
17/12/2013	13	09:55	10:40	25	Commute/Forage	Inshore
17/12/2013	14	11:00	11:45	15	Forage	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
17/12/2013	15	12:00	12:45	10	Commute/Forage	Inshore
09/01/2014	1	13:15	14:00	4	Forage	Inshore
09/01/2014	2	14:30	15:15	20	Forage	Inshore
09/01/2014	3	13:45	14:30	45	Forage	Inshore
09/01/2014	2	12:45	13:30	20	Commute	Inshore
09/01/2014	5	11:30	12:15	15	Commute/Forage	Inshore
09/01/2014	6	10:20	11:05	15	Commute/Rest	Inshore
08/01/2014	8	15:00	15:45	10	Rest	Inshore
09/01/2014	10	07:15	08:00	10	Forage	Inshore
08/01/2014	9	15:15	16:00	30	Commute/Forage	Inshore/On shore
09/01/2014	9	07:15	08:00	25	Commute	Inshore
09/01/2014	13	12:15	13:00	4	Forage	Inshore
22/01/2013	2	15:30	16:15	100	Rest	Inshore
23/01/2014	2	06:45	07:30	100	Forage	Inshore
22/01/2013	3	15:30	16:15	45	Forage/Rest	Inshore
23/01/2014	3	06:45	07:30	50	Commute/Forage/Rest	Inshore
23/01/2014	5	15:45	16:30	55	Commute/Rest	Inshore/On shore
23/01/2014	7	14:25	15:10	4	Rest	
23/01/2014	6	14:25	15:10	20	Commute/Rest	Inshore/On shore
23/01/2014	9	13:25	14:10	15	Forage	Inshore/On shore
23/01/2014	11	10:50	11:35	15	Rest	On shore
23/01/2014	12	09:20	10:05	30	Commute	Inshore
04/02/2014	1	11:30	12:15	7	Commute	Inshore
04/02/2014	2	12:50	13:35	17	Commute	Inshore
04/02/2014	3	13:40	14:25	7	Commute	Inshore
04/02/2014	4	14:40	15:25	35	Commute/rest	Inshore
04/02/2014	5	16:00	16:45	10	Commute/Forage	Inshore
03/02/2014	6	15:50	16:35	15	Commute	Inshore
04/02/2014	6	07:20	08:05	20	Commute/Forage	Inshore
04/02/2014	7	07:20	08:05	5	Commute	Inshore
03/02/2014	7	15:50	16:35	80	Rest	Inshore
04/02/2014	8	14:30	15:15	20	Forage	On shore
04/02/2014	9	13:20	14:15	25	Forage	On shore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
04/02/2014	10	12:00	12:45	10	Commute/Forage	Inshore
04/02/2014	12	09:20	10:05	2	Forage	Inshore
04/02/2014	13	10:40	11:25	3	Commute	Inshore
04/02/2014	14	09:45	10:30	10	Commute	Inshore
04/02/2014	15	08:30	09:15	10	Commute	Inshore
20/02/2014	1	10:55	11:40	16	Commute	Inshore
20/02/2014	2	12:10	12:55	16	Commute/Forage	Inshore
20/02/2014	3	13:20	14:05	30	Commute/Rest	Inshore/On shore
20/02/2014	4	14:30	15:15	9	Commute	Inshore/On shore
20/02/2014	5	07:15	08:00	15	Commute/Forage	Inshore
20/02/2014	6	07:15	08:00	8	Commute	Inshore/On shore
20/02/2014	7	15:50	16:35	5	Commute	Inshore
20/02/2014	8	14:40	15:25	20	Forage	On shore
20/02/2014	9	13:30	14:15	40	Forage	Inshore/On shore
20/02/2014	10	12:15	13:00	6	Commute	
20/02/2014	11	11:00	11:45	10	Forage	Inshore
20/02/2014	13	09:30	10:15	18	Commute	Inshore
21/02/2014	14	06:30	07:15	50	Commute	Inshore
20/02/2014	15	17:00	17:45	100	Commute/Rest	Inshore
21/02/2014	15	06:30	07:15	16	Commute	Inshore
06/03/2014	2	12:45	13:30	50	Forage/Rest	Inshore
06/03/2014	3	12:40	13:25	20	Forage/Rest	Inshore
06/03/2014	4	13:45	14:30	5	Commute/Rest	Inshore
05/03/2014	6	17:15	18:00	5	Commute	Inshore
06/03/2014	6	06:15	07:00	20	Commute	Inshore
06/03/2014	6	13:45	14:30	30	Commute/rest	Inshore/On shore
06/03/2014	9	12:30	13:15	4	Commute/Rest	Inshore/On shore
06/03/2014	10	11:15	12:00	7	Commute	Inshore
06/03/2014	11	10:05	10:50	7	Commute	Inshore
06/03/2014	12	08:50	09:35	20	Commute	Inshore
06/03/2014	13	10:30	11:15	15	Commute	Inshore
06/03/2014	14	09:25	10:10	5	Commute	Inshore
18/03/2014	5	17:40	16:25	10	Commute/Forage/Rest	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
18/03/2014	4	17:45	18:30	180	Commute/rest	Inshore
19/03/2014	10	09:50	10:35	10	Commute/Rest	Inshore
19/03/2014	2	08:00	08:45	50	Commute/Forage	Inshore
19/03/2014	3	07:00	07:45	150	Commute/Rest	Inshore
19/03/2014	4	05:50	06:35	300	Commute/Rest	Inshore
19/03/2014	5	05:45	06:30	40	Commute/Forage	Inshore
19/03/2014	6	06:45	07:30	20	Commute/Forage	Inshore
19/03/2014	7	14:25	15:10	15	Commute	Inshore
19/03/2014	8	14:15	15:00	25	Forage	Inshore/On shore
19/03/2014	9	13:00	13:45	20	Forage/Rest	Inshore/On shore
19/03/2014	11	10:25	11:10	40	Forage	Inshore
19/03/2014	12	09:00	09:45	25	Commute/Forage	Inshore
19/03/2014	13	11:00	11:45	40	Commute	Inshore
19/03/2014	14	11:50	12:35	15	Commute	
19/03/2014	15	13:00	13:45	30	Commute	Inshore
Herring gull sightings during the little tern surveys 2013.						
29/03/2013	8	11:10	11:55	40	Forage/Rest	On shore
30/03/2013	15	08:00	08:45	20	Forage/Rest	On shore
13/05/2013	13	14:40	15:25	4	Commute	Inshore
13/05/2013	1	15:35	16:20	2	Commute	On shore
13/05/2013	7	17:45	18:30	10	Rest	On shore
13/05/2013	9	19:00	19:45	30	Forage/Rest	On shore
14/05/2013	12	09:15	10:00	15	Commute	Inshore/On shore
14/05/2013	10	11:55	12:40	25	Rest/Breed	On shore
14/05/2013	8	14:00	14:45	20	Forage/Rest	On shore
15/05/2013	6	07:00	07:45	4	Rest	On shore
15/05/2013	5	08:05	08:50	6	Commute	On shore
15/05/2013	4	09:15	10:00	15	Commute/Rest	On shore
15/05/2013	3	10:20	11:05	3	Forage/Rest	Inshore
28/05/2013	2	06:10	06:55	25	Forage/rest	Inshore
28/05/2013	3	07:15	08:00	20	Commute/Forage/Rest	Inshore/On shore
28/05/2013	4	18:30	19:15	3	Rest	On shore
29/05/2013	9	12:15	13:00	15	Rest	On shore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
29/05/2013	10	14:00	14:45	4	Rest	On shore
29/05/2013	11	15:10	15:55	2	Rest	On shore
29/05/2013	12	16:40	17:25	10	Commute/Forage	Inshore/On shore
30/05/2013	1	10:55	11:40	25	Forage/Rest	Inshore/On shore
10/06/2013	5	13:00	13:45	75	Commute	Inshore
10/06/2013	4	14:00	14:45	15	Rest	Inshore
10/06/2013	3	15:00	15:45	10	Rest	Inshore
10/06/2013	2	16:00	16:45	20	Rest	Inshore
11/06/2013	1	11:15	12:00	4	Commute	
12/06/2013	8	06:45	07:30	10	Commute/rest	Inshore/On shore
12/06/2013	10	10:00	10:45	2	Commute	Inshore
12/06/2013	9	11:45	12:30	2	Commute	Inshore
24/06/2013	9	16:45	17:30	2	Commute	Inshore
24/06/2013	8	17:45	18:30	3	Commute	Inshore
25/06/2013	7	06:30	07:15	20	Forage	Inshore
25/06/2013	4	10:30	11:15	15	Forage	
26/06/2013	3	17:30	18:15	20	Breed	Inshore
08/07/2013	6	18:20	19:05	2	Commute	
08/07/2013	7	19:10	19:55	10	Commute/Forage	
09/07/2013	11	11:35	12:20	4	Commute	Inshore/On shore
09/07/2013	10	12:40	13:25	4	Forage	
09/07/2013	2	14:45	15:30	30	Forage	Inshore
09/07/2013	3	15:40	16:25	25	Forage/rest	
09/07/2013	4	16:40	17:25	5	Commute/Rest	Inshore/On shore
09/07/2013	8	17:50	18:35	30	Forage	On shore
09/07/2013	9	18:50	19:35	20	Forage	On shore
10/07/2013	15	08:45	09:40	7	Forage	Inshore/On shore
10/07/2013	14	09:50	10:35	9	Forage	Inshore/On shore
10/07/2013	13	10:45	11:30	10	Commute/Forage	Inshore/On shore
10/07/2013	1	11:40	12:25	5	Forage	Inshore
24/07/2013	15	13:00	13:45	5	Commute	Inshore
25/07/2013	9	15:00	15:45	4	Commute	
25/07/2013	7	16:00	16:45	10	Commute	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
25/07/2013	5	17:30	18:15	4	Commute	Inshore
25/07/2013	6	19:30	20:15	4	Commute	Inshore
26/07/2013	3	08:00	08:45	40	Rest	Inshore
26/07/2013	3	08:00	08:45	20	Forage	Inshore
26/07/2013	2	09:00	09:45	10	Forage	
06/08/2013	8	08:40	09:25	10	Forage/Rest	Inshore/On shore
06/08/2013	9	10:15	11:00	3	Rest	On shore
06/08/2013	11	13:05	13:50	4	Forage/Rest	Inshore/On shore
06/08/2013	12	14:40	15:25	25	Forage/Rest	On shore
06/08/2013	4	18:00	18:45	12	Forage/Rest	Inshore/On shore
06/08/2013	5	19:10	19:55	8	Commute	On shore
07/08/2013	3	07:05	07:50	15	Forage	Inshore
07/08/2013	2	08:15	09:00	35	Forage	Inshore
07/08/2013	1	09:30	10:15	4	Forage	On shore
07/08/2013	13	11:35	12:20	5	Commute/Forage	Inshore/On shore
07/08/2013	1	12:40	13:25	15	Forage/rest	Inshore/On shore
19/08/2013	3	17:30	18:15	30	Commute/Forage/Rest	Inshore
19/08/2013	7	18:40	19:25	8	Commute/Forage/Rest	Inshore/On shore
20/08/2013	8	08:00	08:45	80	Forage/Rest	Inshore/On shore
20/08/2013	9	08:55	09:40	30	Commute/Rest	Inshore/On shore
20/08/2013	10	10:15	11:00	6	Commute/Rest	Inshore
20/08/2013	11	11:20	12:05	10	Rest	Inshore
20/08/2013	12	12:45	13:30	10	Commute/Rest	Inshore
20/08/2013	4	15:45	16:30	8	Commute/Forage	Inshore/On shore
20/08/2013	5	16:40	17:25	7	Rest	Inshore
20/08/2013	6	17:45	18:30	9	Forage	On shore
21/08/2013	2	08:40	09:25	50	Forage/Rest	Inshore
21/08/2013	14	11:05	11:50	2	Commute	Inshore
21/08/2013	1	09:35	10:20	3	Commute	Inshore
21/08/2013	13	12:00	12:45	6	Commute	Inshore/On shore
Herring gull sightings during the cormorant surveys (2014-2015).						
12/11/2014	1	08:15	09:00	12	Commute	Inshore
12/11/2014	2	07:00	07:45	70	Commute	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
12/11/2014	2	10:26	11:11	15	Commute	Inshore
12/11/2014	2	15:50	16:35	30	Commute	Inshore
12/11/2014	3	07:00	07:45	10	Commute	Inshore
12/11/2014	3	15:50	16:35	60	Commute/Rest	Inshore
12/11/2014	4	08:10	08:55	4	Commute	Inshore
12/11/2014	5	09:10	09:55	10	Commute	Inshore
12/11/2014	5	10:25	11:10	5	Commute/Rest	Inshore
12/11/2014	6	12:10	12:55	5	Commute	Inshore
12/11/2014	7	13:15	14:00	45	Commute	Inshore
12/11/2014	8	15:45	16:30	200	Rest	Inshore
12/11/2014	9	14:15	15:00	16	Commute	Inshore
12/11/2014	10	13:05	13:50	20	Commute	Inshore
12/11/2014	11	11:10	11:55	15	Commute	Inshore
12/11/2014	12	09:10	09:55	32	Commute/Forage	Inshore/On shore
12/11/2014	14	12:10	12:55	5	Commute	On shore
12/11/2014	15	13:10	13:55	27	Commute	Inshore
25/11/2014	2	10:38	11:23	30	Commute	Inshore
25/11/2014	1	11:55	12:40	35	Commute	Inshore
25/11/2014	2	15:40	16:25	200	Commute/Forage	Inshore
25/11/2014	3	10:38	11:23	21	Commute/Forage/Rest	Inshore/On shore
25/11/2014	3	15:38	16:23	53	Forage/Rest	Inshore/On shore
25/11/2014	4	09:38	10:23	43	Commute/Forage/Rest	Inshore/On shore
25/11/2014	5	08:23	09:08	40	Commute/Forage/Rest	Inshore/On shore
25/11/2014	6	07:10	07:55	75	Commute/Forage	Inshore/On shore
25/11/2014	6	12:20	13:05	20	Commute/Rest	Inshore
25/11/2014	7	13:20	14:05	65	Commute/Forage/Rest	Inshore/On shore
25/11/2014	8	14:30	15:15	60	Commute/Rest	Inshore
25/11/2014	9	13:15	14:00	50	Commute/Rest	Inshore
25/11/2014	10	12:00	12:45	20	Commute	Inshore
25/11/2014	11	10:45	11:30	5	Commute	Inshore
25/11/2014	12	09:10	09:55	15	Commute	Inshore
25/11/2014	13	13:00	13:45	30	Commute	Inshore
25/11/2014	14	08:05	08:50	27	Commute	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
25/11/2014	15	07:10	07:55	80	Commute	Inshore
25/11/2014	15	09:00	09:45	30	Commute	Inshore
03/12/2014	1	10:00	10:45	45	Commute	Inshore
03/12/2014	2	10:55	11:40	150	Commute/Forage/Rest	Inshore
03/12/2014	2	15:25	16:10	120	Commute/Forage/Rest	Inshore
03/12/2014	3	10:55	11:40	40	Commute/Rest	Inshore
03/12/2014	3	15:25	16:10	15	Commute	Inshore
03/12/2014	4	07:30	08:15	200	Commute	Inshore
03/12/2014	4	14:20	15:05	30	Commute	Inshore
03/12/2014	5	07:45	08:30	50	Commute	Inshore
03/12/2014	6	09:00	09:45	45	Commute	Inshore
03/12/2014	7	12:55	13:40	40	Commute	Inshore
03/12/2014	8	15:05	15:50	55	Commute	Inshore
03/12/2014	9	13:50	14:35	38	Commute	Inshore
03/12/2014	10	12:40	13:25	43	Commute	Inshore
03/12/2014	11	11:10	11:55	22	Commute/Forage	Inshore
03/12/2014	12	09:15	10:00	50	Commute/Forage	Inshore
03/12/2014	13	09:00	09:45	30	Commute	Inshore
03/12/2014	14	13:10	13:55	25	Commute	Inshore
03/12/2014	15	12:15	13:00	15	Commute	Inshore
16/12/2014	1	10:00	10:45	7	Commute/Rest	Inshore
16/12/2014	2	11:10	11:55	40	Forage/Rest	Inshore
16/12/2014	2	15:20	16:05	40	Commute/Forage/Rest	Inshore
16/12/2014	3	11:10	11:55	20	Commute/Rest	Inshore
16/12/2014	3	15:20	16:05	564	Rest	Inshore
16/12/2014	4	09:40	10:25	10	Commute	Inshore
16/12/2014	5	08:30	09:15	15	Commute	Inshore
16/12/2014	6	07:20	08:05	10	Commute/Rest	Inshore
16/12/2014	6	12:55	13:40	45	Commute/Rest	Inshore
16/12/2014	7	14:05	14:50	35	Commute	Inshore
16/12/2014	8	14:35	15:20	90	Commute/Rest	Inshore
16/12/2014	9	13:15	14:00	10	Commute	Inshore
16/12/2014	10	12:00	12:45	10	Commute/rest	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
16/12/2014	11	10:40	11:25	20	Commute	Inshore
16/12/2014	12	09:05	09:50	35	Commute	Inshore
16/12/2014	13	08:40	09:25	13	Commute/Rest	Inshore
16/12/2014	14	13:15	14:00	4	Commute/Forage/Rest	Inshore
16/12/2014	15	07:10	07:55	55	Commute/Forage/Rest	Inshore/On shore
16/12/2014	15	14:10	14:55	29	Commute/Rest	Inshore
07/01/2015	1	10:05	10:50	5	Commute	Inshore
07/01/2015	2	11:20	12:05	70	Forage/Rest	Inshore
07/01/2015	2	15:40	16:25	90	Forage/Rest	Inshore
07/01/2015	3	11:20	12:05	91	Rest	Inshore
07/01/2015	3	15:40	16:25	120	Rest	Inshore
07/01/2015	4	13:50	14:35	80	Commute/Rest	Inshore
07/01/2015	5	12:40	13:25	30	Commute	Inshore
07/01/2015	6	09:48	10:23	60	Commute	Inshore
07/01/2015	7	08:30	09:15	20	Commute	Inshore
07/01/2015	8	07:35	08:20	60	Commute/Rest	Inshore
07/01/2015	8	15:10	15:55	8	Rest	Inshore
07/01/2015	9	13:55	14:40	15	Commute	Inshore
07/01/2015	10	12:55	13:40	6	Commute/Forage	Inshore
07/01/2015	11	11:15	12:00	8	Commute	Inshore
07/01/2015	12	09:20	10:05	10	Commute	Inshore
07/01/2015	13	08:50	09:35	10	Commute	Inshore
07/01/2015	14	13:25	14:10	25	Commute	Inshore
07/01/2015	15	07:40	08:25	70	Commute/Forage	Inshore
07/01/2015	15	14:25	15:10	30	Commute/Rest	Inshore
20/01/2015	1	10:15	11:00	250	Commute/Rest	Inshore
20/01/2015	2	11:20	12:05	800	Forage/Rest	Inshore
20/01/2015	2	15:45	16:30	2500	Forage/Rest	Inshore
20/01/2015	3	11:20	12:05	25	Rest	Inshore
20/01/2015	3	15:45	16:30	1050	Rest	Inshore
20/01/2015	4	12:40	13:25	100	Commute/rest	Inshore
20/01/2015	5	09:55	10:40	250	Commute/Forage	Inshore
20/01/2015	6	08:50	09:35	350	Commute	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
20/01/2015	7	07:40	08:25	1250	Commute/rest	Inshore
20/01/2015	7	14:00	14:45	250	Commute/Rest	Inshore
20/01/2015	8	14:50	15:35	100	Commute/Forage/Rest	Inshore
20/01/2015	9	13:35	14:20	60	Commute/Forage/Rest	Inshore
20/01/2015	10	12:30	13:15	60	Commute/Forage/Rest	Inshore
20/01/2015	11	11:00	11:45	20	Commute/Rest	Inshore
20/01/2015	12	09:15	10:00	25	Commute	Inshore
20/01/2015	13	08:03	08:48	250	Commute	Inshore
20/01/2015	14	07:35	08:20	1500	Commute	Inshore
20/01/2015	14	14:00	14:45	250	Commute	Inshore
20/01/2015	15	13:00	13:45	60	Rest	Inshore
04/02/2015	1	13:50	14:35	27	Commute	Inshore
04/02/2015	2	16:30	17:15	50	Commute	Inshore
04/02/2015	2	10:06	10:51	50	Forage	Inshore
04/02/2015	3	10:06	10:51	30	Rest	Inshore
04/02/2015	3	10:06	10:51	30	Commute	Inshore
04/02/2015	3	16:30	17:15	175	Rest	Inshore
04/02/2015	3	16:30	17:15	30	Commute	Inshore
04/02/2015	4	11:30	12:15	15	Commute	Inshore
04/02/2015	5	12:47	13:32	11	Commute	Inshore
04/02/2015	6	08:22	09:05	60	Commute	Inshore
04/02/2015	7	07:00	07:45	100	Commute/Forage/Rest	Inshore
04/02/2015	7	14:10	14:55	12	Commute	Inshore
04/02/2015	8	15:45	16:30	75	Commute/Rest	Inshore
04/02/2015	9	14:25	15:10	20	Commute/Forage	Inshore
04/02/2015	10	13:20	14:05	60	Commute/Rest	Inshore
04/02/2015	11	11:45	12:30	60	Commute/Forage	Inshore
04/02/2015	12	09:55	10:40	100	Commute/Forage	Inshore
04/02/2015	13	07:00	07:45	250	Commute	Inshore
04/02/2015	13	11:50	12:35	8	Commute/Rest	Inshore
04/02/2015	14	08:04	08:49	205	Commute	Inshore
17/02/2015	1	07:05	07:50	45	Commute/Rest	Inshore
17/02/2015	1	15:50	16:35	120	Commute/Rest	Inshore

NOT PROTECTIVELY MARKED

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
17/02/2015	2	09:50	10:35	60	Commute/Rest	Inshore
17/02/2015	2	16:45	17:30	200	Commute/Forage/Rest	Inshore
17/02/2015	3	09:50	10:35	12	Rest	Inshore
17/02/2015	3	16:45	17:30	280	Commute/Rest	Inshore
17/02/2015	4	08:10	08:55	25	Commute/Forage	Inshore
17/02/2015	5	06:57	07:42	75	Commute	Inshore
17/02/2015	5	15:05	15:50	5	Commute	Inshore
17/02/2015	6	12:25	13:10	3	Commute	Inshore
17/02/2015	7	11:15	12:00	1	Commute	Inshore
17/02/2015	8	15:30	16:15	60	Commute/Rest	Inshore
17/02/2015	9	14:10	14:55	3	Forage	Inshore
17/02/2015	10	12:55	13:40	2	Rest	Inshore
17/02/2015	11	10:55	11:40	5	Commute	Inshore
17/02/2015	12	09:05	09:50	5	Commute/Forage	Inshore
17/02/2015	13	12:55	13:40	15	Commute	Inshore
17/02/2015	14	08:30	09:15	10	Commute	Inshore
17/02/2015	15	11:50	12:35	25	Commute/Rest	Inshore
17/03/2015	1	13:50	14:35	40	Commute	Inshore
17/03/2015	2	07:00	07:45	275	Commute/Rest	Inshore
17/03/2015	2	17:35	18:20	2515	Commute/rest	Inshore
17/03/2015	3	07:00	07:45	200	Commute/Forage/Rest	Inshore
17/03/2015	3	17:35	18:20	700	Commute/Rest	Inshore
17/03/2015	4	11:20	12:05	138	Commute	Inshore
17/03/2015	5	09:10	09:55	120	Commute	Inshore
17/03/2015	6	05:50	06:35	420	Commute/Rest	Inshore
17/03/2015	6	10:10	10:55	215	Commute	Inshore
17/03/2015	7	15:20	16:05	80	Commute/Rest	Inshore
17/03/2015	8	05:50	06:35	150	Commute/Forage	Inshore
17/03/2015	8	14:10	14:55	70	Commute	Inshore
17/03/2015	9	12:55	13:40	22	Commute	Inshore
17/03/2015	10	11:45	12:30	25	Commute	Inshore
17/03/2015	11	10:35	11:20	3	Commute	Inshore
17/03/2015	12	09:05	09:50	40	Commute	Inshore

Date	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters
17/03/2015	13	14:50	15:35	117	Commute/Rest	Inshore
17/03/2015	14	15:43	16:28	68	Commute	Inshore
17/03/2015	15	12:33	13:18	25	Commute	Inshore

Table 1.86: Common scoter sightings recorded during Arcadis coastal surveys.

	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
27/11/2012	1	12:10	12:55	20	Commute	Inshore	Red-throated diver survey 2012-13
27/11/2012	14	10:00	10:45	50	Rest	Inshore	Red-throated diver survey 2012-13
28/11/2012	7	8:30	9:15	9	Commute	Inshore	Red-throated diver survey 2012-13
28/11/2012	3	14:30	15:15	20	Commute	Inshore	Red-throated diver survey 2012-13
28/11/2012	4	7:00	7:45	4	Commute	Inshore	Red-throated diver survey 2012-13
28/11/2015	13	11:50	12:35	10	Rest	Inshore	Red-throated diver survey 2012-13
28/11/2015	15	10:00	10:45	40	Rest	Inshore	Red-throated diver survey 2012-13
12/12/2012	15	9:15	10:00	11	Commute/Rest	Inshore	Red-throated diver survey 2012-13
13/12/2012	3	11:00	11:45	6	Rest	Inshore	Red-throated diver survey 2012-13
18/12/2012	14	14:00	14:45	6	Rest	Inshore	Red-throated diver survey 2012-13
19/12/2012	13	14:10	15:25	30	Rest	Inshore	Red-throated diver survey 2012-13
03/01/2013	8	8:30	9:15	2	Forage	Inshore	Red-throated diver survey 2012-13
03/01/2013	1	11:00	11:45	1	Commute	Inshore	Red-throated diver survey 2012-13
03/01/2013	5	13:25	14:10	16	Commute	Inshore	Red-throated diver survey 2012-13
04/01/2013	15	9:15	10:00	10	Rest	Inshore	Red-throated diver survey 2012-13

NOT PROTECTIVELY MARKED

	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
05/03/2013	15	16:45	17:30	2	Commute	Inshore	Red-throated diver survey 2012-13
27/03/2013	14	10:00	10:45	1	Rest	Inshore	Red-throated diver survey 2012-13
25/06/2013	15	17:15	18:00	80	Rest	Inshore	Little tern survey 2013
26/06/2013	14	10:00	10:45	180	Rest	Inshore	Little tern survey 2013
27/06/2013	1	10:30	11:15	100	Rest	Inshore	Little tern survey 2013
24/07/2013	14	14:15	15:00	70	Commute	Inshore	Little tern survey 2013
25/07/2013	11	11:30	12:15	10	Commute	Inshore	Little tern survey 2013
25/07/2013	10	13:00	13:45	5	Commute	Inshore	Little tern survey 2013
25/07/2013	7	16:00	16:45	100	Commute	Inshore	Little tern survey 2013
20/08/2013	11	11:20	12:05	10	Rest	Inshore	Little tern survey 2013
20/08/2013	12	12:45	13:30	50	Commute	Inshore	Little tern survey 2013
20/08/2013	4	15:45	16:30	6	Commute	Inshore	Little tern survey 2013
21/08/2013	1	9:35	10:20	15	Rest	Inshore	Little tern survey 2013
17/10/2013	9	11:15	12:00	40	Rest	Inshore	Red-throated diver survey 2013-14
17/10/2013	15	11:45	12:30	6	Forage	Inshore	Red-throated diver survey 2013-14
17/10/2013	8	12:45	13:30	20	Rest	Inshore	Red-throated diver survey 2013-14
18/10/2013	15	6:45	7:30	20	Commute	Inshore	Red-throated diver survey 2013-14
31/10/2013	9	8:30	9:15	20	Rest	Inshore	Red-throated diver survey 2013-14
31/10/2013	7	11:15	12:00	20	Commute	Inshore	Red-throated diver survey 2013-14

NOT PROTECTIVELY MARKED

	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
31/10/2013	6	12:30	13:15	6	Commute	Inshore	Red-throated diver survey 2013-14
1/11/2013	6	6:30	7:30	15	Commute	Inshore	Red-throated diver survey 2013-14
12/11/2013	7	7:25	8:10	15	Rest	Inshore	Red-throated diver survey 2013-14
12/11/2013	15	9:10	9:55	4	Commute	Inshore	Red-throated diver survey 2013-14
12/11/2013	12	9:20	10:05	8	Commute/Rest	Inshore	Red-throated diver survey 2013-14
12/11/2013	14	10:15	11:00	30	Commute	Inshore	Red-throated diver survey 2013-14
12/11/2013	13	11:10	11:55	50	Commute	Inshore	Red-throated diver survey 2013-14
12/11/2013	10	12:05	12:50	20	Commute	Inshore	Red-throated diver survey 2013-14
12/11/2013	1	12:45	13:30	20	Commute	Inshore	Red-throated diver survey 2013-14
12/11/2013	9	13:25	14:05	26	Forage	Inshore	Red-throated diver survey 2013-14
12/11/2013	3	14:35	15:20	80	Commute	Inshore	Red-throated diver survey 2013-14
12/11/2013	8	14:35	15:20	200	Rest/ Forage	Inshore	Red-throated diver survey 2013-14
26/11/2013	4	7:00	7:45	10	Commute	Inshore	Red-throated diver survey 2013-14
26/11/2013	11	11:15	12:00	1	Commute	Inshore	Red-throated diver survey 2013-14
26/11/2013	10	12:45	13:30	30	Commute	Inshore	Red-throated diver survey 2013-14
26/11/2013	9	14:00	14:45	15	Rest	Inshore	Red-throated diver survey 2013-14
5/12/2013	2	7:30	8:15	20	Rest	Inshore	Red-throated diver survey 2013-14
5/12/2013	3	7:30	8:15	25	Commute	Inshore	Red-throated diver survey 2013-14
5/12/2013	14	10:15	11:00	2	Commute	Inshore	Red-throated diver survey 2013-14

NOT PROTECTIVELY MARKED

	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
5/12/2013	8	12:50	13:35	25	Forage/ Commute	Inshore	Red-throated diver survey 2013-14
5/12/2013	9	13:50	14:35	30	Commute/Forage	Inshore	Red-throated diver survey 2013-14
16/12/2013	2	15:00	15:45	1	Commute	Inshore	Red-throated diver survey 2013-14
17/12/2013	1	8:15	9:00	15	Commute	Inshore	Red-throated diver survey 2013-14
17/12/2013	12	9:30	10:15	10	Rest	Inshore	Red-throated diver survey 2013-14
17/12/2013	2	11:00	11:45	100	Rest	Inshore	Red-throated diver survey 2013-14
17/12/2013	14	11:00	11:45	35	Commute	Inshore	Red-throated diver survey 2013-14
17/12/2013	10	12:15	13:00	100	Rest	Inshore	Red-throated diver survey 2013-14
17/12/2013	8	13:15	14:00	60	Forage/ Commute	Inshore	Red-throated diver survey 2013-14
17/12/2013	9	13:30	14:15	10	Commute	Inshore	Red-throated diver survey 2013-14
17/12/2013	6	14:30	15:15	5	Forage	Inshore	Red-throated diver survey 2013-14
17/12/2013	5	15:30	16:15	50	Forage/ Rest	Inshore	Red-throated diver survey 2013-14
08/01/2014	8	15:00	16:00	250	Rest	Inshore	Red-throated diver survey 2013-14
08/01/2014	9	15:15	16:00	60	Rest	Inshore	Red-throated diver survey 2013-14
09/01/2014	15	10:00	10:45	20	Commute	Inshore	Red-throated diver survey 2013-14
23/01/2014	3	6:45	7:45	25	Commute	Inshore	Red-throated diver survey 2013-14
23/01/2014	1	8:15	9:00	20	Commute	Inshore	Red-throated diver survey 2013-14
23/01/2014	12	9:20	10:05	80	Rest/ Forage	Inshore	Red-throated diver survey 2013-14
23/01/2014	15	10:00	10:45	200	Forage/ Commute	Inshore	Red-throated diver survey 2013-14

NOT PROTECTIVELY MARKED

	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
23/01/2014	11	10:50	11:35	120	Rest	Inshore	Red-throated diver survey 2013-14
23/01/2014	10	12:00	12:45	55	Forage/ Rest	Inshore	Red-throated diver survey 2013-14
23/01/2014	13	12:00	12:45	50	Commute	Inshore	Red-throated diver survey 2013-14
23/01/2014	4	13:00	13:45	50	Commute	Inshore	Red-throated diver survey 2013-14
23/01/2014	9	13:25	14:10	50	Forage	Inshore	Red-throated diver survey 2013-14
23/01/2014	6	14:45	15:30	30	Forage	Inshore	Red-throated diver survey 2013-14
04/02/2014	6	7:20	8:05	20	Commute	Inshore	Red-throated diver survey 2013-14
04/02/2014	12	9:20	10:05	26	Forage	Inshore	Red-throated diver survey 2013-14
20/02/2014	8	14:40	15:35	8	Rest	Inshore	Red-throated diver survey 2013-14
06/03/2013	7	6:15	7:00	6	Commute	Inshore	Red-throated diver survey 2013-14
06/03/2014	1	10:35	11:20	5	Commute	Inshore	Red-throated diver survey 2013-14
05/03/2014	7	17:10	17:55	10	Rest	Inshore	Red-throated diver survey 2013-14
06/03/2014	14	9:25	10:10	3	Commute	Inshore	Red-throated diver survey 2013-14
06/03/2014	15	8:25	9:10	15	Commute	Inshore	Red-throated diver survey 2013-14
19/03/2014	5	5:45	6:30	12	Commute	Inshore	Red-throated diver survey 2013-14
19/03/2014	4	5:50	6:35	14	Commute	Inshore	Red-throated diver survey 2013-14
19/03/2014	6	6:45	7:30	20	Rest/ Commute	Inshore	Red-throated diver survey 2013-14
19/03/2014	11	10:25	11:10	35	Rest	Inshore	Red-throated diver survey 2013-14
19/03/2014	10	11:40	12:25	45	Rest	Inshore	Red-throated diver survey 2013-14

NOT PROTECTIVELY MARKED

	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
19/03/2014	9	13:00	13:45	60	Rest	Inshore	Red-throated diver survey 2013-14
19/03/2014	7	14:25	15:10	30	Rest	Inshore	Red-throated diver survey 2013-14
12/11/2014	12	9:10	9:55	55	Commute	Inshore	Cormorant survey 2014-15
12/11/2014	11	11:10	11:55	55	Commute	Inshore	Cormorant survey 2014-15
12/11/2014	3	7:00	7:45	9	Commute	Inshore	Cormorant survey 2014-15
12/11/2014	5	9:10	9:55	4	Commute	Inshore	Cormorant survey 2014-15
12/11/2014	6	12:10	12:55	10	Commute	Inshore	Cormorant survey 2014-15
12/11/2014	7	13:15	14:00	32	Commute	Inshore	Cormorant survey 2014-15
12/11/2014	3	15:50	16:35	27	Commute	Inshore	Cormorant survey 2014-15
25/11/2014	2	10:38	11:23	9	Rest	Inshore	Cormorant survey 2014-15
25/11/2014	6	12:20	13:05	1	Commute	Inshore	Cormorant survey 2014-15
25/11/2014	10	12:00	12:45	4	Commute	Inshore	Cormorant survey 2014-15
25/11/2014	11	10:45	11:30	6	Commute	Inshore	Cormorant survey 2014-15
25/11/2014	12	9:10	9:55	7	Commute	Inshore	Cormorant survey 2014-15
3/12/2014	4	7:30	8:15	55	Commute	Inshore	Cormorant survey 2014-15
3/12/2014	5	7:45	8:30	18	Commute	Inshore	Cormorant survey 2014-15
3/12/2014	8	15:05	15:50	5	Commute	Inshore	Cormorant survey 2014-15
3/12/2014	12	9:15	10:00	30	Commute	Inshore	Cormorant survey 2014-15
3/12/2014	13	9:00	9:45	3	Commute	Inshore	Cormorant survey 2014-15

NOT PROTECTIVELY MARKED

	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
3/12/2014	15	12:15	13:00	16	Forage/ Rest	Inshore	Cormorant survey 2014-15
16/12/2014	1	10:00	10:45	1	rest	Inshore	Cormorant survey 2014-15
16/12/2014	6	7:20	8:05	7	Commute	Inshore	Cormorant survey 2014-15
16/12/2014	12	9:05	9:50	3	Commute	Inshore	Cormorant survey 2014-15
16/12/2014	15	7:10	7:55	45	Commute/Rest	Inshore	Cormorant survey 2014-15
16/12/2014	15	14:10	14:55	26	Commute/Rest	Inshore	Cormorant survey 2014-15
07/01/2015	1	10:05	10:50	95	Commute	Inshore	Cormorant survey 2014-15
07/01/2015	2	11:20	12:05	35	Commute	Inshore	Cormorant survey 2014-15
07/01/2015	5	12:40	13:25	15	Rest	Inshore	Cormorant survey 2014-15
07/01/2015	15	7:40	8:25	38	Commute/Rest	Inshore	Cormorant survey 2014-15
07/01/2015	15	14:25	15:10	85	Commute/Rest	Inshore	Cormorant survey 2014-15
20/01/2015	8	14:50	15:35	8	Rest	Inshore	Cormorant survey 2014-15
20/01/2015	10	12:30	13:15	1	Commute	Inshore	Cormorant survey 2014-15
20/01/2015	12	9:15	10:00	3	Commute	Inshore	Cormorant survey 2014-15
20/01/2015	13	8:35	9:20	11	Commute	Inshore	Cormorant survey 2014-15
20/01/2015	14	7:35	8:20	19	Commute	Inshore	Cormorant survey 2014-15
20/01/2015	15	13:00	13:45	74	Rest	Inshore	Cormorant survey 2014-15
04/02/2015	1	13:50	14:35	30	Rest	Inshore	Cormorant survey 2014-15
04/02/2015	1	13:50	14:35	17	Commute	Inshore	Cormorant survey 2014-15

NOT PROTECTIVELY MARKED

	VP	Start	End	Number of birds	Behaviour	Onshore or Inshore waters	Survey type
04/02/2015	3	16:30	17:15	2	Rest	Inshore	Cormorant survey 2014-15
04/02/2015	13	7:00	7:45	15	Commute	Inshore	Cormorant survey 2014-15
04/02/2015	13	11:50	12:35	2	Commute	Inshore	Cormorant survey 2014-15
04/02/2015	13	11:50	12:35	30	Commute	Inshore	Cormorant survey 2014-15
17/02/2015	8	15:30	16:15	50	Forage/ Rest	Inshore	Cormorant survey 2014-15
17/02/2015	14	8:30	9:15	18	Commute/Rest	Inshore	Cormorant survey 2014-15
17/02/2015	15	11:50	12:35	34	Commute/Forage	Inshore	Cormorant survey 2014-15

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VOLUME 2, CHAPTER 14: APPENDIX 14A7 – ORNITHOLOGY:
ANNEX 14A7.6 SPECIES ACCOUNTS (SCHEDULE 1, RED AND
AMBER LIST SPECIES)

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Plates

None provided.

Figures

None provided.

1 Schedule 1 Red and Amber List Species

1.1 Introduction

a) Purpose of this annex

1.1.1 The purpose of this annex and species accounts is to collate desk-study and field survey information in one location. This approach has been taken due to the volume of ornithological desk-study data and the extent of survey work undertaken by both Wood Group (formerly Entec and Amec Foster Wheeler) and Arcadis Consulting (UK) Limited (formerly Hyder Consulting, and hereafter referred to as Arcadis) for the Sizewell C power station at the main development site (referred to throughout this volume as the “proposed development”).

1.1.2 Two species account annexes have been produced:

- **Annex 14A7.6** provides accounts for qualifying species for one or more of the European designated sites within the Zone of Influence (Zoi) of the proposed development site (hereafter referred to as the “site”), and other seabird and waterfowl/wader species recorded.
- **Annex 14A7.6** (this Annex) provides accounts for species listed on Schedule 1 of the Wildlife and Countryside Act (W&CA) (Ref. 1.1)¹ (excluding those already included within **Annex 14A7.6**), as well as accounts for Red and Amber listed species of Birds of Conservation Concern (BoCC) (Ref. 1.2) and/or species listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act (Ref. 1.3). It also includes a list of other species (i.e. Green List species of BoCC) which have been recorded during both the Wood Group and Arcadis surveys.

1.1.3 A total of 24 Red List BoCC (Ref. 1.2)/NERC Act (Ref. 1.3) list species, eight Amber List BoCC (Ref. 1.2), and 41 Green List BoCC (Ref. 1.2) were recorded during the surveys undertaken by Wood Group (2007 to 2012) (Ref. 1.4, Ref. 1.5, Ref. 1.6)) and Arcadis (2013 to 2019).

1.1.4 A species account has been written for each of these bird species. Each account comprises a description of the desk-study results, a summary of the secondary data (from surveys undertaken by Wood Group (refer to

¹ The birds, their nests, eggs and young of all species listed on Schedule 1 are fully protected by law in the United Kingdom (UK) at all times of the year.

Annex 14A7.3), and the primary data collected from surveys undertaken by Arcadis (refer to **Annex 14A7.4**).

1.1.5 This combined information has been used to inform the summary description of the ornithological Important Ecological Features (IEFs) presented in the main ornithology baseline (**Appendix 14A7 – Ornithology**).

1.1.6 This annex is divided into five sections, as described in **Table 1.1**. Species accounts have not been written for those Green List BoCC (Ref. 1.2) species which are not part of the qualifying feature of a designated site qualification or are NERC Act (Ref. 1.3) listed. These Green List species are listed in a table of sightings during the Wood Group and Arcadis surveys and have been included within **section 4**.

Table 1.1: Section index

Section	Species (Section reference)
Section 1.2: Breeding Schedule 1 species	Barn owl (<i>Tyto alba</i>) (section 1.2b), kingfisher (<i>Alcedo atthis</i>) (section 1.2c), hobby (<i>Falco subbuteo</i>) (section 1.2d), peregrine (<i>Falco peregrinus</i>) (section 1.2e), Cetti's warbler (<i>Cettia cetti</i>) (section 1.2f), and black redstart (<i>Phoenicurus ochruros</i>) (section 1.2g)
Section 1.3: Non-breeding Schedule 1 species	Red kite (<i>Milvus milvus</i>) (section 1.3a), goshawk (<i>Accipiter gentilis</i>) (section 1.3b), osprey (<i>Pandion haliaetus</i>) (section 1.3c), firecrest (<i>Regulus ignicapilla</i>) (section 1.3d), fieldfare (<i>Turdus pilaris</i>) (section 1.3e), redwing (<i>Turdus iliacus</i>) (section 1.3f), brambling (<i>Fringilla montifringilla</i>) (section 1.3g), crossbill (<i>Loxia curvirostra</i>) (section 1.3h), and snow bunting (<i>Plectrophenax nivalis</i>) (section 1.3i).
Section 1.4: Red List and/or NERC species	Grey partridge (<i>Perdix perdix</i>) (section 1.4a), turtle dove (<i>Streptopelia turtur</i>) (section 1.4b), cuckoo (<i>Cuculus canorus</i>) (section 1.4c), willow tit (<i>Poecile montanus</i>) (section 1.4d), marsh tit (<i>Poecile palustris</i>) (section 1.4e), skylark (<i>Alauda arvensis</i>) (section 1.4f), wood warbler (<i>Phylloscopus sibilatrix</i>) (section 1.4g), starling (<i>Sturnus vulgaris</i>) (section 1.4h), ring ouzel (<i>Turdus torquatus</i>) (section 1.4i), song thrush (<i>Turdus philomelos</i>) (section 1.4j), mistle thrush (<i>Turdus viscivorus</i>) (section 1.4k), spotted flycatcher (<i>Muscicapa striata</i>) (section 1.4l), nightingale (<i>Luscinia megarhynchos</i>) (section 1.4m), whinchat (<i>Saxicola rubetra</i>) (section 1.4n), dunnock (<i>Prunella modularis</i>) (section 1.4o), house sparrow (<i>Passer domesticus</i>) (section 1.4p), tree sparrow (<i>Passer montanus</i>) (section 1.4q), yellow wagtail (<i>Motacilla flava</i>) (section 1.4r), tree pipit (<i>Anthus trivialis</i>) (section 1.4s), bullfinch (<i>Pyrrhula pyrrhula</i>) (section 1.4t), linnet (<i>Carduelis cannabina</i>) (section 1.4u), lesser redpoll (<i>Acanthis cabaret</i>) (section 1.4v), yellowhammer (<i>Emberiza citrinella</i>) (section 1.4w) and reed bunting (<i>Emberiza schoeniclus</i>) (section 1.4x).
Section 1.5: Amber list	Stock dove (<i>Columba oenas</i>) (section 1.5a), tawny owl (<i>Strix aluco</i>) (section 1.5b), short-eared owl (<i>Asio flammeus</i>) (section 1.5c),

Section	Species (Section reference)
species	swift (<i>Apus apus</i>) (section 1.5d), kestrel (<i>Falco tinnunculus</i>) (section 1.5e), house martin (<i>Delichon urbicum</i>) (section 1.5f), willow warbler (<i>Phylloscopus trochilus</i>) (section 1.5g) and meadow pipit (<i>Anthus pratensis</i>) (section 1.5h).
Section 6: Green list species	Green List BoCC (1.2) species

b) Referencing, locations and definitions

i. Survey area

1.1.7 The survey area for each of the Arcadis ornithology surveys was very much dependant on the survey type. However, the majority of the surveys were carried out in the habitats within and adjacent to the site. The survey area was extended from Dunwich in the north to Orford Ness in the south for the red-throated diver (*Gavia stellata*), tern (*Sterna* sp.) and cormorant (*Phalacrocorax carbo*) surveys in order to capture any bird activity along the likely potential route of boat movements during the construction phase of the proposed development. However, for the remaining surveys, the survey area was defined as “the site and the wider area”.

1.1.8 In the context of the Wood Group surveys, the term survey area refers to the EDF Energy estate, and land within 1km of the estate boundary, covering approximately 9km². A full description of the Wood Group survey area is presented in the individual reports found in **Annex 14A7.3**. Due to uncertainties at the time of the Wood Group surveys regarding the final layout of the proposed development, the survey area covered by the Wood Group surveys was larger than the survey area used for the more recent Arcadis surveys. It should be noted that the site boundary has changed, albeit not substantially, since the Wood Group surveys see **Appendix 14A1 – Introduction to the Ecological Baseline**.

ii. Desk-study definitions

1.1.9 **Table 1.2** provides a definition of terms used when referring to different data sources throughout this Annex (such as British Trust of Ornithology (BTO) Wetland Bird Survey (WeBS) data Ref. 1.7 and Ref. 1.8)).

Table 1.2: Desk-study data sources

Desk-study sources	Description and reference
Suffolk reports Birds	As part of the desk-study a review of the Suffolk Birds reports (Ref. 1.9, 1.10, 1.11, 1.12, 1.13, 1.14, 1.15) (Suffolk Naturalists Society, 2004, 2010, 2011, 2012, 2013, 2017 and 2018) was also undertaken. These reports were used to obtain information

Desk-study sources	Description and reference
	regarding the status of important bird species within Suffolk and within the vicinity of the site.
Royal Society for the Protection of Birds (RSPB) data	Five years of data (2001-2013) of bird records within 5km of the existing Sizewell power station complex (Ref. 1.16 & Ref. 1.17).
Suffolk Biodiversity Information Service (SBIS) data	Records of species within 2km of the site were requested from SBIS in 2014 (Ref. 1.18).
BTO WeBS data	The two count zones comprise Minsmere (not including sea) (BTO 33073 2013) and Minsmere offshore, (BTO 33074 2013). These data ranged from 2001-2012. The count zones are shown on Figure 14A7.1-3 .
RSPB species specific data (up to 2016)	Data provided about specific species, comprising: bittern (<i>Botaurus stellaris</i>) (Ref. 1.19), marsh harrier (<i>Circus aeruginosus</i>) (Ref. 1.20), woodlark (<i>Lullula arborea</i>) (Ref. 1.21) and nightjar (Ref. 1.22) (<i>Caprimulgus europaeus</i>).
NGL monitoring data	NGL, with the help of Suffolk Wildlife Trust (SWT), have monitored the EDF Energy estate (refer to Figure 14A7.1) since 1999, 14 years of data have been used in this report (NGL 2005-2014) (Ref. 1.23, 1.24, 1.25, 1.26, 1.27, 1.28, 1.29, 1.30, 1.31, 1.32, 1.33, 1.34, 1.35, 1.36 and 1.37).

iii. Location definitions

1.1.10 Within each species account, references are also made to specific locations within the survey area where birds have been recorded, such as Minsmere South Levels. **Table 1.3** and **Table 1.4** also provide a glossary of terms used to describe the different areas within and adjacent to the survey area.

Table 1.3: Locations with the survey area where bird species have been recorded

Location within survey area	Description
Ash Wood	A mixed plantation woodland within the arable fields at the northern end of the EDF Energy estate.
Ash Wood cottages	Cottages to the south east of Ash Wood.
Black Walks	An area of short sward grassland found within the arable fields at the northern end of the EDF Energy estate.
Broom Covert	A mixed plantation found within the southern end of the EDF Energy estate.
Cow Marsh Hill	Field within the RSPB Minsmere Reserve, just north of the Minsmere New Cut.

Location within survey area	Description
Fiscal Policy woodland	An area of woodland adjacent to Kenton Hills.
Goodrums Fen	Area of fen meadow and reedbed within Sizewell Marshes Site of Special Scientific Interest (SSSI).
Goose Hill	Coniferous Plantation north of Sizewell Marshes SSSI
Great Mount Wood	A conifer plantation found within the northern end of the EDF Energy estate.
Grimseys	An area of wet woodland located within Sizewell Marshes SSSI.
Kenton Hills	Coniferous Plantation northwest of Sizewell Marshes SSSI
Leiston Common	Area of acid grassland and heath within the southern end of the EDF Energy estate. The area is designated as a County Wildlife Site (CWS).
Leiston Old Abbey	A house to the southwest of Upper Abbey Farm.
Lower Abbey Farm	Located within the northern end of the EDF Energy estate. The site comprises farm buildings, outbuildings, and workshops.
Lower Abbey Farm marshes	An area of marshy grassland north of Lower Abbey Farm.
Minsmere South Levels	Area of floodplain grassland located to the north of the site and south of the Minsmere New Cut.
Nursery Covert	Conifer plantation woodland forming part of the larger Kenton Hills and Goose Hill complex.
Old Abbey Farm	Located northwest of Kenton Hills.
Reckham Pits Wood	Broadleaved woodland found within the southern end of the EDF Energy estate.
Reedbed within Sizewell Marshes SSSI	Reedbed located south of Goose Hill within Sizewell Marshes SSSI.
Retsom's field	Area of semi-improved acid grassland and heath located in the southern end of Minsmere South Levels. Forms part of the Sizewell Levels and Associated areas CWS.
Rigs associated with the Sizewell A and B power stations	The structures offshore of the existing Sizewell A and B power stations.
Rookyard Pits Wood	Area of broadleaved woodland located to the south of Sizewell Marshes SSSI.
Sandypytte Plantation	Area of semi-natural broad leaved woodland located at the northern end of the EDF Energy estate.
Sizewell Beach	Area of beech adjacent to, and north of the existing Sizewell A and B power station complex.
Main platform	The Sizewell C power station platform area to the north of

Location within survey area	Description
	the existing Sizewell B power station complex.
Sizewell Marshes SSSI	An area of species – rich fen meadow, reedbed and wet woodland within the EDF Energy estate.
Stonewall Belt	A belt of broadleaved trees within the EDF Energy estate.
The Round House	A private residence within the EDF Energy estate.
Upper Abbey Farm	Located within the EDF Energy estate. The site comprises farm buildings, outbuildings, and workshops. SWT are also based here
Walk Barn	An area of acid grassland to the north of Goose Hill.
Windmill	A wind water pump located within Retsom’s field.
Area’s 1 - 3	These refer to the Areas within Sizewell Marshes SSSI which were surveyed during the Waterbird Point Counts, refer to Annex 14A7.1-4 .
Sizewell Marshes SSSI (Compartments A – D)	These refer to the compartments surveyed during the wetland bird surveys (2018-2019), refer to Annex 14A7.1-4
Minsmere South Levels (TN1 – 8)	

Table 1.4: Locations outside of survey area where bird species have been recorded

Location	Description
Alde-Ore Estuary	Mouth of the River Alde, near Orford Ness, south of the site.
Aldeburgh	Coastal town located 6km south of the site.
Aldringham	Village approximately 3km south of the site.
Aldringham Common (= Aldringham Walks)	An area of heathland and plantation, located between Aldringham and Thorpeness, north-west of Aldeburgh. Forms part of the Sandlings Special Protected Area (SPA) and Aldeburgh to Leiston SSSI.
Aldringham-cum-Thorpe	The civil parish located south of the town of Leiston, the parish includes the villages of Aldringham and Thorpeness, which is on the coast, between the site and Aldeburgh.
Benacre Broad	Located within Benacre National Nature Reserve, approximately 20km north of the site.
RSPB Boyton Marshes Reserve	Reserve near the River Alde, near Orford Ness, approximately 17km south of the site.
Covehithe	Near Benacre National Nature Reserve.
Deben	Little tern colony located near the River Deben, approximately 25km south of the site.
Dingle Marshes/Dingle	RSPB and SWT reserve near Dunwich village, approximately 7.5km north of the site and forming part of the Minsmere to

Location	Description
Marsh	Walberswick Heaths and Marshes SPA/Special Area of Conservation (SAC)/Ramsar.
Dunwich	Village located approximately 7.5km north of the site.
Dunwich Cliffs	Cliffs in the vicinity of Dunwich heath, north of the site.
Dunwich heath	An area of heathland, managed by the National Trust south of Dunwich Village and forming part of the Minsmere to Walberswick Heaths and Marshes SPA/SAC/Ramsar.
Dunwich Forest	A forestry commission plantation found approximately 5km to the north of the site.
Eastbridge	Village approximately 3km north-east of the site.
Eastbridge Farm	Farm located within Eastbridge village.
Easton	Historic little tern colony near Easton Bavents.
Easton Broad	Broad located in Easton Bavents approximately 15km north of the site.
Felixstowe	Town located between the River Orwell and the River Deben approximately 33km to the south of the site.
Hare's Creek	A creek located along the River Orwell.
Havergate Island	An island within the Alde–Ore Estuary.
Hen reedbeds	SWT site located on the banks of the Blyth near Southwold, approximately 13km north of the site and forming part of the Minsmere to Walberswick Heaths and Marshes SPA/SAC/Ramsar/SSSI.
Island Mere Hide	A bird hide located at RSPB Minsmere Reserve.
Knodishall	Village in Suffolk south-east of Saxmundham and approximately 4km west of the site.
Kings Fleet on the river Deben–Bawdsey	Near Falkenham Suffolk, approximately 30km south of the site.
Kessingland	South of Lowestoft, Suffolk approximately 23km north of the site.
Lakenheath Fen	Inland near Brandon, near Thetford Forest, approximately 77km to the north-west of the site.
Landguard Point	Nature reserve near Felixstowe, approximately 33km south of the site.
Lantern Marshes	Marshes found on Orford Ness, approximately 15km south of the site.
Leiston	A village approximately 3km to the south-west of the site.
Lowestoft Docks	The only other breeding kittiwake colony in Suffolk, located approximately 30km north of the site.
Middleton	Village approximately 6km north of the site.
Minsmere New Cut	Artificial drain that carries the course of the Minsmere River and

Location	Description
	dividing the Minsmere North Levels from the Minsmere South Levels.
RSPB Minsmere Reserve	Area of land managed by the RSPB and forming part of the Minsmere to Walberswick Heaths and Marshes SPA/SAC/Ramsar/SSSI. The majority of their landholding is to the north of the Minsmere New Cut.
RSPB North Warren Reserve	Area of land managed by RSPB reserve north-west of Aldeburgh and forming part of the Sandlings SPA and Aldeburgh to Leiston SSSI.
Orford Ness	Orford Ness is a shingle spit, located at the mouth of the Alde-Ore Estuary and is managed by the National Trust. This is located approximately 15km south of the site and part of the Alde-Ore Estuary SPA and SSSI.
Slaughden Beach	The northern portion of Orford Ness located south of Aldeburgh.
Sandlings SPA	An SPA composed of six component SSSIs (including and Aldeburgh to Leiston SSSI) located to the south of the site.
Shingle Street	The southern portion of the Orford Ness Shingle Spit.
Sizewell Hall	A country house located on the coast approximately 1.75km south of the site.
Shotley	Shotley is the parish south of Ipswich approximately 37km south of the site, between the River Stour and the River Orwell, near Harwich, Suffolk.
Theberton	West of Eastbridge and north of Leiston, approximately 4.5km north-west of the site.
Theberton Woods	Located near Middleton, a Forestry Commission Woodland.
Trimley Marshes	Trimley Marshes is a nature reserve along the river Orwell, near Trimley St Martin, approximately 32km south of the site.
Thorpeness	Coastal Village approximately 3km south of the site and located to the north of Aldeburgh.
Thorpeness Golf Club	Golf club along the coast south of the site.
Walberswick	Village approximately 12km north of the site, near Southwold.
Westleton	Village approximately 7km north-west of the site.
Westleton Walks	Area of heathland located west of Dunwich Heath and forming part of the Minsmere to Walberswick Heaths and Marshes SPA/SAC/Ramsar/SSSI.
Westwood Marshes	Large reedbed located south-west of Walberswick and forming part of the Minsmere to Walberswick Heaths and Marshes SPA/SAC/Ramsar/SSSI.

1.2 Breeding schedule 1 species

a) Introduction

1.2.1 A number of species listed on Schedule 1 of the W&CA (Ref. 1.1) were observed during the breeding and the wintering season. These are described in detail below.

b) Barn owl

1.2.2 Barn owl is included on the UK Green List of BoCC (Ref. 1.2), and is a priority species for conservation action in the county within the Suffolk Biodiversity Action Plan (BAP) (Ref. 1.38).

i. Desk-study

Suffolk Birds

1.2.3 The Suffolk Birds reports describe barn owl as fairly common within the county, although the Suffolk population is restricted to the eastern half of the county, with only sporadic reports of birds elsewhere. Evidence suggests that densities in East Suffolk are relatively high, at approximately five breeding pairs per 10km², indicating a county population of 100-125 pairs. The 2017 Suffolk Bird Report (Ref. 1.14) stated that barn owl was present in 469 of 1774 active nest boxes, and 379 sites produced young. The locations of records were not stated within the report. The 2018 Suffolk Bird Report (Ref. 1.15) stated that 2018 was a very poor breeding season, with only 125 active nests recorded in the county and the locations were not disclosed in the report.

RSPB

1.2.4 The RSPB reported seven records of barn owl within 5km of the existing Sizewell power station complex. Records ranged from 2003 to 2013, and were of confirmed or probable breeding, with the exception of one unknown status record of one individual. All records were from RSPB North Warren Reserve, and were of apparently occupied nests, pairs or a single individual record.

SBIS

1.2.5 Information received from SBIS (2014) identified 35 sighting records of barn owl within 2km of the site. The records ranged from 1994 to 2012, with ten records in the last ten years. Records were from the following locations: RSPB Minsmere Reserve, Eastbridge, Middleton, "Sizewell", Theberton Woods, Knodishall and Leiston.

NGL

1.2.6 NGL records of barn owl on the EDF Energy estate are set out in **Table 1.5**.

Table 1.5: NGL barn owl observations

Year	Description
2018	A pair raised three chicks in a box at Goose Hill. Three chicks ringed.
2017	No breeding territories identified. Three juveniles were ringed in a nest on the Sizewell Estate.
2016	Two breeding territories. Three pulli were ringed.
2015	Three out of five boxes were occupied and produced a total of five fledglings. Five chicks were ringed.
2014	A pair raised four chicks in a box at Upper Abbey Farm.
2013	Birds present throughout the year but no nest found. Barn owl was reported during the Winter bird counts; one bird was observed in February and another solitary bird was observed in March.
2012	Birds present throughout the year but no nest was found. Barn owl was reported during the Winter farmland bird counts, with one bird observed in January and another in November.
2011	One breeding territory.
2010	No breeding territories.
2009	No breeding territories.
2008	No breeding recorded, but birds were seen hunting during the Winter farmland bird counts.
2007	One breeding territory (a pair raised two young in the box inside Lower Abbey Farm). The two young were ringed as part of the ringing undertaken on the EDF Energy estate.
2006	Two breeding territories (the pair at Goose Hill nest box raising two young). One barn owl seen during the farmland Winter bird survey in March 2006.
2005	Two breeding territories (with the pair at Goose Hill nest box raising three young).

ii. Secondary data

1.2.7 The first interim bird report produced by Wood Group (refer to **Report 14A7.3-2, Annex 14A7.3**), for the time period April to July 2007, reported a pair of barn owl had bred in one of the nest boxes erected at Goose Hill. However, barn owl was not noted during the breeding bird survey, and the nest at Upper Abbey Farm (located by NGL) was not recorded. A range of buildings within the EDF Energy estate are used for roosting on a seasonal basis. The report also noted that management measures, including the creation of field margins, may have increased the attractiveness of the EDF Energy estate to the species.

1.2.8 Barn owl was not recorded during the breeding bird survey undertaken by Wood Group in 2010 (refer to **Report 14A7.3-5, Annex 14A7.13**); however, barn owls were seen hunting over open ground in the survey area by surveyors undertaking bat surveys in Sizewell Marshes SSSI during April to June 2010. The barn owl box on the southern edge of Goose Hill showed no sign of recent or previous occupancy during the survey period. Barn owls were not thought to have bred in the survey area in 2010 but were known to be roosting in Upper Abbey Farm.

1.2.9 The Wood Group report on the breeding bird survey of the arable reversion area, undertaken in 2012 (refer to **Report 14A7.3-8, Annex 14A7.3**), reported one barn owl hunting over Cow Marsh Hill on 20 June 2012, and two barn owl flushed from a tree on the edge of Rookyard Pits Wood on 29 March 2012. These were the only records of barn owl during this survey. See Figure 1-1 within **Report 14A7.3-8, Annex 14A7.3**.

iii. Primary data

1.2.10 A single barn owl was observed during the Arcadis 2014 breeding bird survey, hunting on the campus field. Foraging barn owl was also seen incidentally during marsh harrier (*Circus aeruginosus*) surveys from Vantage Points (VPs) 1, 2, 4 and 6 in 2014.

1.2.11 A barn owl foraging survey was carried out in Spring 2015 to determine the use of the arable areas by barn owl (refer to **Figures 14A7.11**). During the dawn survey of Transect 1 on 16 April 2015 a total of two flights were recorded, with both flights observed to the north of Upper Abbey Farm. The first flight was one bird recorded hunting at 6.15am and the second was likely to be the same bird hunting in the same area at 6:24am.

1.2.12 During the dusk survey of Transect 4, on 28 April 2015, a total of three flights were recorded, all in the vicinity of Lower Abbey Farm. The first flight was identified as an adult flying into the farm complex from the north, with the bird seen to be carrying a prey item. The other two flights were seen after this, and both involved flights occurring and finishing in the Lower Abbey Farm complex.

1.2.13 Although these were the only barn owl records from the barn owl foraging surveys, a number of incidental barn owl sightings have been recorded as part of the ongoing marsh harrier VP surveys. A full list of these sightings is shown in **Table 1.6**.

Table 1.6: Barn owl sightings 2015

Date	Sighting description
17/04/2015	A single bird recorded hunting and landing in a tree in Sizewell Marshes SSSI at 7:32.

Date	Sighting description
30/04/2015	A single bird recorded hunting in the marshy grassland to the north of Sandpytle Plantation. This bird was observed hunting from 20:05-20:25.
07/05/2015	A single bird seen flying from the direction of Eastbridge and recorded flying into Lower Abbey Farm at 7:39. This bird was observed to be carrying prey.
19/05/2015	A single bird observed flying out of Lower Abbey Farm in the direction of Eastbridge at 17:29.
19/05/2015	A single bird recorded flying into Lower Abbey Farm from the north-west at 17:45. This bird was seen carrying prey.
04/06/2015	A single bird recorded hunting over the reedbeds to the south of the woodland at Grimseys at 6:33.
04/16/2015	A single bird seen hunting over the reedbed to the south of the woodland at Grimseys between 7:23-7:31.
05/16/2015	A single bird recorded hunting over the reedbed to the south of the woodland at Grimseys at 6:35.
05/06/2015	A single bird recorded hunting over the reedbed to the south of the woodland at Grimseys between 6:35-7:00. This bird was the same bird as recorded above and this bird was observed flying south-east into the wet woodland west of Sizewell B power station.
09/07/2015	A single bird seen hunting over the marshy grassland to the south of the Minsmere New Cut at 7:05.
09/07/2015	A single bird seen flying from the west into Lower Abbey Farm at 7:30.
09/07/2015	A single bird seen commuting north from Lower Abbey Farm to Minsmere at 8:20.
20/07/2015	A single bird observed hunting in Sizewell Marshes SSSI between 17:30-17:45. This bird was also observed landing in a tree before flying east and being lost to sight.
23/07/2015	A single bird seen hunting to the west of Sizewell B power station in Sizewell Marshes SSSI at 6.30.

1.2.14 Barn owls was also recorded incidentally during other ecological work on the EDF Energy estate during 2015. These records include a single bird observed resting in a nest box located at Upper Abbey Farm, and birds were seen on two separate occasions south of Goose Hill.

1.2.15 The 2015 surveys confirmed a single breeding pair of barn owl at Lower Abbey Farm; however, the distribution of sightings, the historical use of the survey area and the known overlap of home ranges of breeding barn owl (Ref. 1.39) could indicate that in some years up to three breeding barn owl pairs could be present on the site. The main parts of the survey area used by foraging barn owl have been shown to be the rough marshy grassland and reedbeds of Sizewell Marshes SSSI, and the marshy grassland to the

north of the site directly adjacent to RSPB Minsmere Reserve, whilst the central arable fields are of lower importance.

1.2.16 A single barn owl pellet was also observed on a fence post within Studio reptile receptor area during the December 2018 marsh harrier survey visit. This suggests that barn owl use the habitat present for foraging. Bat surveys undertaken in 2019 also recorded two barn owls at Lower Abbey Farm, no nesting was confirmed, but the sightings indicate their continued presence in the area.

1.2.17 In summary, barn owl is known to forage and breed within the survey area.

c) Kingfisher

1.2.18 Kingfisher is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This is due to its European conservation status being listed as ‘vulnerable’ (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.2.19 The Suffolk Birds reports describe kingfisher as a fairly common resident and was confirmed breeding at 14 sites (Ref. 1.9 – 1.13). The 2017 Suffolk Bird Report (Ref. 1.14) confirmed nesting at eight widespread sites (an increase on the six sites recorded in 2016). These breeding pairs were all found in west Suffolk. The 2018 Suffolk Bird Report (Ref. 1.15) stated that confirmed breeding was reported at 10 sites, however the locations of these were not stated within the report.

RSPB

1.2.20 The RSPB returned seven records of kingfisher within 5km of the existing Sizewell power station complex. Records were from 2003, 2004, 2005 and 2008; three records were of individuals of unknown breeding status and four records were pairs of confirmed or probable breeding status.

SBIS

1.2.21 Desk-study records provided by SBIS (2014) reported 12 records of kingfisher between 2004 and 2012 within 2km of the site, with 11 records in the last ten years. These records were at RSPB Minsmere Reserve, “Sizewell” (likely to be within the site), Eastbridge, Middleton and Aldringham Walks.

NGL

1.2.22 NGL records of kingfisher on the EDF Energy estate are provided in **Table 1.7**.

Table 1.7: NGL kingfisher records

Year	Description
2018	Three records of kingfisher were recorded during the BTO WeBS count. One breeding territory.
2017	One breeding territory.
2016	Four records of kingfisher were recorded during the BTO WeBS count. One breeding territory. Two adult kingfisher were ringed.
2015	Kingfisher was observed on five out of six of the WeBS count surveys with a peak count of two (March and November). One breeding territory.
2014	One kingfisher recorded during breeding bird surveys within Sizewell Marshes SSSI. Seven records of kingfisher were recorded during the BTO WeBS counts, with a single bird recorded in March, two birds recorded in September, one bird recorded in October, two birds recorded in November and a single bird recorded in December.
2013	One kingfisher recorded during breeding bird surveys within Sizewell Marshes SSSI. Three birds were also recorded during the BTO WeBS counts, with single birds recorded in March, October and December.
2012	One kingfisher recorded during breeding bird surveys within Sizewell Marshes SSSI.
2011	Two breeding territories.
2010	One breeding territory located in Sizewell Marshes SSSI.
2009	One breeding territory.
2008	One breeding territory.
2007	One breeding territory recorded and one kingfisher recorded during the BTO WeBS count in December.
2006	One breeding territory.
2005	One breeding territory recorded, and three kingfisher recorded during BTO WeBS counts in October 2005. During BTO WeBS counts in January and March 2005, one kingfisher was seen in both months.

ii. Secondary data

1.2.23 The Wood Group 2008 breeding bird survey (refer to **Report 14A7.3-5, Annex 14A7.3**) reported a kingfisher territory within the survey area. Kingfisher was recorded breeding towards the western edge of Sizewell Marshes SSSI on an area of ditch bank which has been managed by SWT with the specific aim of providing a nesting location for the species (Ref. 1.40).

1.2.24 During the walkover surveys undertaken by Wood Group in the Winter of 2007 and 2008 (refer to **Report 14A7.3-1, Annex 14A7.3**) kingfisher was recorded during all surveys, with sightings located along the ditch adjacent to Sandpytle Plantation and within Sizewell Marshes SSSI.

iii. Primary data

1.2.25 Kingfisher was not recorded as part of the Arcadis site 2014 breeding bird survey nor the 2014-2015 wintering bird surveys. However, during the 2014-2015 waterfowl surveys, kingfisher was recorded on two occasions, with a single bird recorded during the Rookyard Pits Woods transect in January 2015, and two birds recorded in Sizewell Marshes SSSI in March 2015. The two birds recorded in Sizewell Marshes SSSI were observed digging a nest hole, and breeding is likely to occur at this location. A single kingfisher was also recorded during the January wetland bird surveys (2018-2019) within the Sizewell Marshes SSSI.

1.2.26 Kingfisher have also been observed within Sizewell Marshes SSSI during the marsh harrier VP surveys.

1.2.27 In summary, kingfisher are present within the survey area and are likely to breed within Sizewell Marshes SSSI.

d) Hobby

1.2.28 Hobby is included on the Green List of BoCC (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.2.29 The Suffolk Birds reports described hobby as a fairly common Summer visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that 836 reports were submitted in 2017. At RSPB Minsmere Reserve, the 2017 peak count was seven individuals, with three breeding pairs confirmed. The 2018 Suffolk Bird Report (Ref. 1.15) stated that 583 sightings were reported (a significant drop from 2017) and breeding was confirmed at 13 sites across the county. Peak counts of 20 were recorded at RSPB Minsmere Reserve and 11 at RSPB North Warren Reserve. Four breeding pairs were confirmed at RSPB Minsmere Reserve.

RSPB

1.2.30 The RSPB reported 21 records of hobby within 5km of the existing Sizewell power station complex between 2003 and 2013. All records are probable or confirmed breeding records from both RSPB Minsmere and RSPB North

Warren Reserves. A maximum of four pairs were recorded at RSPB Minsmere Reserve in 2012.

SBIS

1.2.31 Desk-study records provided by SBIS reported 25 sightings of hobby between 1995 and 2012 within 2km of the site, with 17 records in the last ten years. These records were located at RSPB Minsmere Reserve, Thorpeness, “Sizewell”, Aldringham Common, Eastbridge and Theberton.

NGL

1.2.32 NGL have recorded hobby observations on the EDF Energy estate, and these are detailed in **Table 1.8**.

Table 1.8: NGL hobby records

Year	Description
2018	No breeding pairs identified.
2017	No breeding pairs identified.
2016	One breeding pair.
2015	One pair held territory.
2014	A pair held territory on the EDF Energy estate.
2013	A pair held territory on the EDF Energy estate.
2012	One pair held a territory on the EDF Energy estate and birds were still on the estate in October.
2011	One breeding pair.
2010	One pair held territory in the EDF Energy estate and was recorded at Retsom’s field/South Marsh during the breeding bird survey. One bird recorded during the farmland Winter bird counts, in September 2010.
2009	One pair held territory on the EDF Energy estate.
2008	Two breeding territories. At least one pair bred at Goose Hill, and a second pair held territory at Lower Abbey Farm.
2007	At least one pair bred in Goose Hill and possibly a second pair nested in the southern areas of Sizewell Marshes SSSI.
2006	Birds present throughout the Summer, but breeding not confirmed.
2005	Birds present throughout the Summer, but breeding not confirmed.

ii. **Secondary data**

1.2.33 The first interim bird report produced by Wood Group (refer to **Report 14A7.3-2, Annex 14A7.3**) reports on a specific hobby survey undertaken in 2007. Two hobby pairs were thought to have bred, with a third pair possibly breeding. Both were within the EDF Energy estate, in plantation woodland

to the south-east of Broom Covert and in the Goose Hill area, respectively. The nesting location in Broom Covert, approximately 1.1km from the site, was mapped with confidence, while the location in Goose Hill, which was approximately 300m from the site, was more indicative. The presence of a third territory, in Ash Wood, could not be discounted, as hobby nests have been recorded as close together as 200m in other studies (Ref. 1.41) but there was no strong evidence to conclude that there were three active territories in 2007.

1.2.34 The second interim bird report (refer to **Report 14A7.3-1, Annex 14A7.3**) again recorded two confirmed breeding hobby territories, one located in Goose Hill, which raised two juvenile birds, and another in Broom Covert, where it was assumed that one young bird was fledged. As well as these confirmed breeding territories, another potential territory was located at Ash Wood; however, again this could not be confirmed.

1.2.35 During the Wood Group 2010 breeding bird survey under (refer to **Report 14A7.3-5, Annex 14A7.3**), a hobby was seen carrying food into Ash Wood on 2 June 2010, indicating that a pair was probably present. Birds were also seen by SWT wardens in the vicinity of the regular breeding location in Goose Hill, although nesting was not confirmed (Ref. 1.42).

iii. Primary data

1.2.36 The Arcadis 2014 breeding bird survey only recorded hobby during the third survey visit, with two birds recorded. These birds were both recorded on the northern edge of Goose Hill. Hobby nest locations are monitored by SWT, and along with the Arcadis records, it is likely that there were two breeding hobby territories present within the survey area during the 2014 breeding season.

1.2.37 Hobby was infrequently recorded during the arable harrier surveys carried out in Spring and Summer 2015. From VPA, located east of Lower Abbey Farm, two birds were recorded, with one recorded on 30 April 2015 and the other on 12 August 2015. From VPD, located west of Lower Abbey Farm, two birds were recorded, with one bird recorded on 19 May 2015 and the other on 2 June 2015. From VPE, directly north of Ash Wood, a single bird was recorded on 3 June 2015.

1.2.38 The northern arable breeding bird survey in 2015 recorded a single hobby flying south towards Ash Wood on 29 April 2015.

1.2.39 In summary, hobby breed within the survey area and have been observed within across the survey area. Likely and/or confirmed nesting locations include Goose Hill, Ash Wood and Broom Covert.

e) Peregrine

1.2.40 Peregrine is included on the Green List of BoCC (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.2.41 The Suffolk Birds reports describe peregrine as an uncommon, but increasing, Winter visitor and passage migrant. Breeding has occurred in the county since 2008. The 2017 Suffolk Bird Report (Ref. 1.14) stated that 433 reports of peregrine were received in 2017, including regular sightings at RSPB Minsmere Reserve and breeding pairs were confirmed from six locations within the county. The 2018 Suffolk Bird Report (Ref. 1.15) stated that a total of 327 sightings were reported, with up to two individuals recorded each month at RSPB Minsmere, with the exception of July. Records were also reported at Orfordness and Hollesley Marshes. Pairs were noted to be holding territories in Orfordness and Sizewell, however no breeding evidence was found.

RSPB

1.2.42 The RSPB reported one record (from 2003) of peregrine within 5km of the existing Sizewell power station complex.

SBIS

1.2.43 Desk-study records provided by SBIS (2014) reported 18 records between 1995 and 2012 within 2km of the site, with 15 records in the last ten years. These records were from the following locations: “Sizewell”, Thorpeness, RSPB Minsmere Reserve, Middleton, Leiston and Aldringham Walks.

NGL

1.2.44 NGL have irregularly recorded peregrine using the EDF Energy estate. Breeding is likely to have occurred on Sizewell A power station during 2014. A summary of NGL surveys (2005-14) is presented in **Table 1.9**.

Table 1.9: NGL peregrine records

Year	Description
2018	Two birds recorded in November and one recorded in December during BTO WeBS counts. No records of peregrine during Spring.
2017	One record of peregrine in February during BTO WeBS count. No records of peregrine during Spring.
2016	No records.
2015	Three birds recorded during January and December BTO WeBS surveys,

Year	Description
	peak count was 2 in December. No records of peregrine during Spring.
2014	A pair of birds was present throughout the first Winter period and Spring; they are thought to have bred on Sizewell A power station.
2013	No records.
2012	No records.
2011	No records.
2010	No records.
2009	A single bird recorded in November.
2008	No records.
2007	No records.
2006	A single bird recorded in March.
2005	A single bird observed in November.

ii. Secondary data

1.2.45 Wood Group did not record the presence of peregrine as part of their bird surveys.

iii. Primary data

1.2.46 No sightings of peregrine were recorded as part of the Arcadis 2014 breeding bird survey nor in the wintering bird survey of 2014-2015. Peregrine was, however, regularly seen using Minsmere South Levels during both the marsh harrier surveys and the waterfowl survey, with up to two birds present at the same time. A single bird was also recorded in February 2019 within Minsmere South Levels during the wetland bird surveys 2018-2019.

1.2.47 The 2015 marsh harrier survey recorded peregrine on three occasions over Sizewell Marshes SSSI. There were two records from VP 2 in Sizewell Marshes SSSI Goodrums Fen, with solitary birds seen on 13 April and 18 May 2015. There was also a record of two birds seen from VP 4, just west of Rookyard Pits Wood on 12 May 2015.

1.2.48 It should also be noted that during a site visit, a security guard informed an Arcadis ornithologist that there was a breeding pair of peregrine located on the southern side of Sizewell A power station during the 2015 breeding season.

1.2.49 In summary, peregrine was recorded occasionally within the survey area in both 2014 and 2015, and a pair may have breed on the Sizewell A power station in both years.

f) Cetti’s warbler

1.2.50 Cetti’s warbler is included on the Green List of BoCC (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.2.51 The Suffolk Birds reports describe Cetti’s warbler as a fairly common resident and a rare passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that 428 pairs were recorded. At RSPB Minsmere Reserve, 90 singing birds were recorded. The 2018 Suffolk Bird Report (Ref. 1.15) stated that harsh weather in February decimated the population, particularly on the coast. From 11 sites, there was a decline in singing males in 10 of the sites and only an increase of 11% at Snape Warren. At Sizewell, there was an estimated decline of 95% with only one singing male recorded and at Minsmere there was a decline of 96% with only four males singing.

RSPB

1.2.52 The RSPB reported 22 records of Cetti’s warbler between 2003 and 2013 within 5km of the existing Sizewell power station complex. All records were of confirmed or probable breeders. Of these records, at RSPB Minsmere Reserve a maximum of 95 Cetti’s warblers territories were recorded in 2009, and a minimum of 19 territories were recorded in 2003. At RSPB North Warren Reserve, a maximum of 49 singing males were recorded in 2007, and a minimum record of one pair was recorded in 2003.

SBIS

1.2.53 Desk-study records provided by SBIS (2014) revealed ten records of Cetti’s warbler between 2004 and 2012 within 2km of the site, nine of which were in the last ten years. These records were located in the following areas: “Sizewell”, Lower Abbey Farm, Eastbridge, RSPB Minsmere Reserve, Leiston and Aldringham Walks.

NGL

1.2.54 NGL land management reports contained the following references to Cetti’s warbler (see **Table 1.10**).

Table 1.10: NGL Cetti’s warbler records

Year	Description
2018	Three individuals were recorded during BTO WeBS count. One breeding territory and two adults ringed and one re-trap/recovery.
2017	Two records of Cetti’s warbler were recorded during BTO WeBS count.

Year	Description
	Nineteen breeding territories.
2016	Twenty-one breeding territories. Five adult Cetti's warbler were ringed and six were re-trapped/recovered.
2015	Sixteen breeding territories.
2014	Eighteen territories found on site. Eleven Cetti's warbler ringed and one bird recovered.
2013	Ten territories recorded on the EDF Energy estate. Eight Cetti's warbler ringed and two birds recovered.
2012	Only nine territories recorded, a 77% decrease on numbers in 2011. Severe Winter and heavy Spring rain thought to be main factors. One Cetti's warbler ringed on the EDF Energy estate in 2012 - recaptured twice during ringing sessions.
2011	Twenty-three breeding territories.
2010	Twenty-one territories recorded, a significant increase, despite the harsh Winter. Territories located in the following locations: Sizewell Marshes SSSI (11), Retsom's field/South Marsh (six) and Lower Abbey Farm marshes (four). Two Cetti's warblers caught whilst ringing. One recorded during farmland Winter bird survey in November 2010.
2009	Thirteen territories found, a 35% decrease on 2008, probably as a result of the cold Winter. Three adult Cetti's warbler were ringed on the EDF Energy estate.
2008	Twenty breeding territories recorded (a site record). Five adult Cetti's warbler ringed on the EDF Energy estate.
2007	Fourteen territories recorded, a decrease on the 19 territories recorded in 2005. Five adult Cetti's warblers ringed as part of the EDF Energy estate ringing scheme.
2006	Eleven breeding territories.
2005	Nineteen breeding territories reported (eight in Sizewell Marshes SSSI, four in Retsom's field/Salt Marshes and seven at Lower Abbey Farm marshes) and five adults ringed on site.

ii. Secondary data

1.2.55 The first interim bird report produced by Wood Group (in 2007, refer to **Report 14A7.3-2, Annex 14A7.3**) reported 13 Cetti's warbler territories. Six territories were recorded in the Sizewell Marshes SSSI, with a further four in the marshes around Retsom's field and the south-eastern edge of the RSPB landholding, and three in scrub in Lower Abbey Farm marshes.

1.2.56 The Wood Group 2010 breeding bird survey (refer to **Report 14A7.3-5, Annex 14A7.3**) recorded five Cetti's warbler territories. Four Cetti's warblers were heard singing in the reedbeds and wet scrub in the north-east corner of the Sizewell Marshes SSSI and a further singing male was present near Walk Barn.

1.2.57 The Wood Group report on the 2012 breeding bird survey of the arable reversion area (refer to **Report 14A7.3-8, Annex 14A7.3**), reported six Cetti's warbler breeding territories in the northern part of the survey area. These territories were located in wet scrub.

iii. Primary data

1.2.58 Breeding bird surveys undertaken in the survey area by Arcadis in 2014 recorded Cetti's warbler in each survey visit, with a peak count of four birds recorded during the first survey visit. These birds were recorded either within or directly adjacent to the reedbed. Although a smaller number of birds were recorded by Arcadis compared to NGL, the NGL surveys covered a wider area, and as such identified more birds.

1.2.59 The continued presence of Cetti's warbler during the breeding season, and the availability of suitable breeding habitat, would indicate that up to four breeding territories were present within the site. With a UK breeding population of 2,000 pairs (Ref. 1.43), the breeding population of the survey area makes up a small percentage of this population.

1.2.60 The 2014-2015 Winter bird surveys recorded Cetti's warbler during two survey visits, with a peak count of three birds recorded during the January 2015 survey visit. All birds were recorded in the reedbed adjacent to the main platform, north of the Sizewell B power station.

1.2.61 The northern arable fields breeding bird survey in 2015 recorded Cetti's warbler on two occasions, with one bird located in the hedge to the east of Sandpytle Plantation on 29 April 2015, and the other located to the south-east of Sandpytle Plantation on 7 May 2015.

1.2.62 Cetti's warbler was also recorded as a secondary species on a single occasion during the arable marsh harrier survey in 2015, with one bird recorded from VPD north of Lower Abbey Farm on 19 May 2015.

1.2.63 A single Cetti's warbler was recorded during the December 2018 and January 2019 visits at the eastern end of the reedbed at Aldhurst Farm during the 2018-2019 marsh harrier surveys.

1.2.64 In summary, Cetti's warbler are present within the survey area and within the site up to four breeding territories were located in 2014, with a further 14 territories located across the wider EDF Energy estate identified by NGL. Cetti's warbler have mostly been recorded in Sizewell Marshes SSSI and the Minsmere South Levels but have also been recorded in at the northern end of the EDF Energy estate and are likely to be present within the southern end of the EDF Energy estate.

g) Black redstart

1.2.65 Black redstart is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a decline of 52% in the UK breeding population in the last 25 years, a longer term decline of 33% in the UK breeding population since the first BoCC review, its breeding rarity (with a UK breeding population of just 19-44 pairs) and its wintering rarity (with a UK non-breeding population of 400 birds) (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.2.66 The Suffolk Birds reports describe black redstart as an uncommon Summer visitor and passage migrant, with small numbers overwintering. Black redstart is an infrequent breeder in the county, and is localised to a few sites, including Landguard Point, Felixstowe and the existing Sizewell power station complex. In 2008 and 2012, the existing Sizewell power station complex had the only confirmed successful breeders in the county. The 2017 Suffolk Bird Report (Ref. 1.14) stated that a pair was seen regularly throughout the year at Sizewell Power Station but there was no confirmation of breeding. The 2018 Suffolk Bird Report (Ref. 1.15) stated that reports of up to two birds were recorded at Sizewell in January and February and a pair bred successfully at Sizewell Power Station in 2018, with another pair recorded.

RSPB

1.2.67 The RSPB reports one record of black redstart within 5km of the current Sizewell power station complex.

SBIS

1.2.68 Desk-study records provided by SBIS (2014) reported 14 records of black redstart between 1994 and 2012 within 2km of the site, 11 of which were in the last ten years. Records were between 2005 and 2012 and were located from Thorpeness, RSPB Minsmere Reserve, Eastbridge, Aldringham Walks and “Sizewell”.

NGL

1.2.69 NGL management reports revealed a number of records of black redstart, as presented in **Table 1.11**.

Table 1.11: NGL black redstart records

Year	Description
2018	No records.
2017	No records.
2016	No records.
2015	No records.
2014	Black redstart were known to have bred within the Sizewell power station complex, though no numbers are given.
2013	Black redstart were known to have bred within the Sizewell power station complex, though no numbers are given.
2012	Two pairs are thought to have bred within the Sizewell power station complex.
2011	Two pairs are thought to have bred within the Sizewell power station complex.
2010	Two pairs are thought to have bred within the Sizewell power station complex.
2009	Two pairs are thought to have bred within the Sizewell power station complex.
2008	Two pairs are thought to have bred within the Sizewell power station complex.
2007	Two pairs are thought to have bred within the Sizewell power station complex.
2006	Two pairs are thought to have bred within the Sizewell power station complex.
2005	Three pairs are thought to have bred within the Sizewell power station complex.

ii. Secondary data

1.2.70 The first interim bird report produced by Wood Group (refer to **Report 14A7.3-2, Annex 14A7.3**) reports black redstart breeding within the existing Sizewell power station complex, where two to three pairs are normally present.

1.2.71 During the Wood Group 2010 breeding bird survey (refer to **Report 14A7.3-5, Annex 14A7.3**) two black redstart were recorded. Two black redstarts were heard singing on the northern boundary of the Sizewell B power station. A further two singing males were heard along the eastern boundary of Sizewell A and B power stations, respectively, during the 2010 survey. It was considered likely that the short grassland along the coastal strip is used by this species for foraging.

- 1.2.72 A targeted black redstart breeding bird survey was undertaken in 2011 (refer to **Report 14A7.3-12, Annex 14A7.3**), and there were 24 records of black redstart over four survey visits. This included two confirmed successful pairs, with a pair located at Sizewell A power station raising two juveniles and another pair also raising two juveniles at Sizewell B power station. The presence of another adult male around Sizewell A power station could have indicated that another pair was present, although this was not confirmed.
- 1.2.73 As well as these confirmed breeding birds, black redstart was also recorded foraging on the beach and dune system adjacent to both Sizewell A and B power stations and the short grassland to the north of Sizewell B power station.
- 1.2.74 Subsequent surveys in 2011 (refer to **Report 14A7.3-12, Annex 14A7.3**) reported the presence of six black redstart records, spread over five separate dates between August and November 2011. These records were again located within Sizewell A power station and Sizewell Beach.

iii. Primary data

- 1.2.75 During the Arcadis 2014 breeding bird surveys, black redstart was recorded during both the first and second survey visits, with a peak count of two birds recorded during the second visit. All birds recorded were located on the beach and in the dunes adjacent to the Sizewell B power station.
- 1.2.76 The site 2014-2015 Winter bird survey recorded black redstart on a single survey visit, with a solitary bird recorded on Sizewell Beach during March 2015.
- 1.2.77 Black redstart was also recorded as a secondary species during the 2014-2015 cormorant surveys, with a single bird recorded feeding at Orford Ness (from VP 11) on 20 January 2015.
- 1.2.78 A dedicated black redstart foraging survey was carried out in Spring 2015, and a total of 12 birds were recorded. A summary of these records is shown in **Table 1.12**.

Table 1.12: Arcadis black redstart survey 2015 records

Survey date	No. black redstarts recorded	Notes
1 st survey visit – 14 April	One male recorded.	A single adult male black redstart recorded on the south-east corner of the roof of the main Sizewell B power station building.
2 nd survey visit – 27	No black redstarts recorded.	N/a

Survey date	No. black redstarts recorded	Notes
April		
3 rd survey visit – 30 April	One male recorded.	A single adult male black redstart observed singing in the south-east corner of the Sizewell A power station compound, directly below the yellow crane structure. After initially finding this bird, it was observed to fly into the Sizewell A power station compound and was lost to view
4 th survey visit – 19 May	Five black redstarts recorded.	As part of the coastal transect, three black redstarts were recorded at two separate locations. One record was of a single adult male recorded foraging beneath the yellow crane structure on the short grass and scrub habitat adjacent to the south-east corner of the Sizewell A power station compound. The other record was of a singing adult male and a female observed together on a building to the east of the Sizewell B power station. As part of the proposed main platform transect, an adult male black redstart was observed singing on a building on the northeast corner of the Sizewell B power station compound. This male is likely to be the same bird as the male recorded with the female as part of the coast transect. Also recorded as part of the proposed main platform transect was a single bird heard singing in the north-west corner of the compound. This bird was not seen, though it was likely that this was a male
5 th survey visit – 21 May	Three black redstarts recorded	As part of the coast transect, one adult male was observed perched under the yellow crane structure to the south-east of the Sizewell A power station compound, and another bird was heard singing in the northeast corner of the Sizewell B power station compound. This latter was also recorded during the proposed main platform transect, with the surveyor visually identifying this as an adult male bird.
6 th survey visit – 19 June	Two black redstarts recorded	Two records of black redstart recorded on the coast transect, with both of these birds located in the vicinity of the yellow crane structure to the south-east of Sizewell A power station compound, with a female bird seen foraging beneath the structure and a juvenile seen perched on a fence in the same location. The juvenile was a recently fledged bird.

1.2.79 The results of this 2015 survey confirmed the presence of a breeding pair within the Sizewell A power station, and these successfully fledged at least one juvenile, with another probable breeding pair located in the northeast corner of the Sizewell B power station. The single record of a singing male in the northwest corner of the compound could mean that up to three breeding pairs were present within the existing Sizewell power station complex in 2015.

1.2.80 In summary, between two and three pairs of black redstarts are known to utilise the existing Sizewell power station complex during the breeding season. These birds also forage within the adjacent coastal habitats.

1.3 Non-breeding schedule 1 species

a) Red kite

1.3.1 Red kite is included on the Green List of BoCC (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.3.2 The Suffolk Birds reports describe red kite as an uncommon but increasing Winter visitor and passage migrant. Red kite has bred in the county in 1996 and 1997. The 2017 Suffolk Bird Report (Ref. 1.14) stated that there were 321 reports across Suffolk, compared with only six records in 2007. A peak count of six were recorded at RSPB Minsmere Reserve, however the only breeding record came from west Suffolk.

RSPB

1.3.3 The RSPB reported one record of red kite within 5km of the existing Sizewell power station complex. This record was located at RSPB North Warren Reserve in 2003.

SBIS

1.3.4 Desk-study records provided by SBIS (2014) reported 15 records of red kite between 2004 and 2012 within 2km of the site, with 14 records in the last ten years. These records were located at Aldringham Walks, RSPB Minsmere Reserve, Eastbridge, Knodishall, Westleton Walks, Leiston and Theberton Wood.

NGL

1.3.5 NGL (2005-2018) have recorded the presence of red kite irregularly over the EDF Energy estate, refer to **Table 1.13**.

Table 1.13: NGL red kite records

Year	Description
2018	No records.
2017	No records.
2016	No records.

Year	Description
2015	One bird recorded during February wintering farmland survey.
2014	No records.
2013	No records.
2012	No records.
2011	Three birds were recorded during Spring, one each in March, April and May.
2010	No records.
2009	No records.
2008	No records.
2007	No records.
2006	Two birds seen over Kenton Hills in November.
2005	No records.

ii. **Secondary data**

1.3.6 Wood Group did not record red kite during any of their bird surveys.

iii. **Primary data**

1.3.7 Red kite was recorded during the arable harrier survey, with a single bird recorded over Black Walks from VPC on 22 July 2015. This was the only record of red kite during the Arcadis bird surveys.

1.3.8 In summary, red kite has only been very rarely observed within the survey area. Observations were focussed within the northern end of the EDF Energy estate and Kenton and Goose Hill Woodlands.

b) **Goshawk**

1.3.9 Goshawk is included on the Green List of BoCC (Ref. 1.2).

i. **Desk-study**

Suffolk Birds

1.3.10 The Suffolk Birds reports describe goshawk as a scarce Winter visitor and passage migrant. Goshawk are also described as an uncommon resident. The 2017 Suffolk Bird Report (Ref. 1.14) stated that 11 pairs nested in west Suffolk. There were no sightings in east Suffolk.

RSPB

1.3.11 The RSPB reported no records of goshawk within the 5km of the existing Sizewell power station complex.

SBIS

1.3.12 Desk-study records provided by SBIS (2014) reported six records of goshawk within 2km of the site, with no records in the last ten years. These records were located at RSPB Minsmere Reserve, Leiston and “Sizewell”.

NGL

1.3.13 NGL (2005-2018) have recorded the presence of goshawk irregularly over the EDF Energy estate, refer to **Table 1.14**.

Table 1.14: NGL goshawk records

Year	Description
2018	No records.
2017	No records.
2016	No records.
2015	No records.
2014	No records.
2013	No records.
2012	No records.
2011	A single bird seen over Goose Hill on 8 February.
2010	No records.
2009	Goshawk observed during BTO WeBS count in December.
2008	No records.
2007	No records.
2006	A single bird seen at Leiston Common in December.
2005	No records.

ii. Secondary data

1.3.14 Wood Group (refer to **Report 14A7.3-2, Annex 14A7.3**) recorded a single female goshawk near the main Sizewell car park on 16 April 2007 as part of the breeding bird survey. This was the only record of goshawk during the Wood Group surveys.

iii. Primary data

- 1.3.15 Goshawk has not been recorded during any Arcadis bird surveys.
- 1.3.16 In summary, goshawk have only very rarely been observed within the survey area in recent years.

c) Osprey

- 1.3.17 Osprey is of medium conservation concern in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2), this is due to a historical decline and recovery and breeding rarity in the UK.
- 1.3.18 Osprey was observed only incidentally, during the Arcadis arable harrier surveys. On 28 August 2015 a single osprey was observed flying south over VPD and later over VPE.

d) Firecrest

- 1.3.19 Firecrest is included on the Green List of BoCC (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.3.20 The Suffolk Birds reports describe firecrest as an uncommon breeder and passage migrant, with some birds over-wintering. The 2017 Suffolk Bird Report (Ref. 1.14) stated that there were multiple breeding records in west Suffolk. There were no breeding records from RSPB Minsmere Reserve, however five singing males were recorded there in 2016.

RSPB

- 1.3.21 The RSPB reported five records of firecrest within 5km of the existing Sizewell power station complex. Records were from 2003, 2006, 2008 and 2009. All records were of probable or confirmed breeding pairs. The maximum number reported was seven pairs from RSPB Minsmere Reserve in 2008.

SBIS

- 1.3.22 Desk-study records provided by SBIS (2014) reported 17 records of firecrest between 1994 and 2012 within 2km of the site, with 13 records in the last ten years. These were located at RSPB Minsmere Reserve, “Sizewell”, Thorpeness, Aldringham Common and Walks, and Aldringham-cum-Thorpe.

NGL

1.3.23 NGL (2005-2018) reported two records of firecrest. In March 2008, two birds were recorded during the farmland wintering bird count, and in March 2014, a single bird was recorded during the farmland wintering bird count.

ii. Secondary data

1.3.24 The Wood Group second interim report (refer to **Report 14A7.3-1, Annex 14A7.3**), of surveys undertaken between August 2007 and March 2008, recorded firecrest in woodland to the west of Kenton Hills in January 2008, and on the northern edge of Nursery Covert in March 2008.

1.3.25 Two firecrest were recorded during the Wood Group 2010-2011 breeding bird survey (refer to **Report 14A7.3-5, Annex 14A7.3**). Two singing males were heard: one in Fiscal Policy woodland at the western end of the survey area during, and another on the southern fringes of Goose Hill during April 2010. Neither bird was heard on subsequent visits in May and June 2010, indicating that these records may have related to individuals on migration rather than attempting to breed.

iii. Primary data

1.3.26 Firecrest was not observed during any of the Arcadis bird surveys.

1.3.27 In summary, firecrest have been recorded in low numbers within the survey area, largely in the farmland and in the conifer plantation of Goose Hill and Kenton Hills, but no firm evidence to indicate breeding

e) Fieldfare

1.3.28 Fieldfare is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to: a decline of 50% in the UK breeding population in the last 25 years; a longer-term decline of 63% in the UK breeding population since the first BoCC review; a breeding range reduction of 77% in the last 25 years; a longer-term breeding range reduction of 32%; and its breeding rarity, with only one to two pairs breeding in the UK (Ref. 1.2).

1.3.29 Note fieldfare only breed within the UK in the north of Scotland and therefore are a winter visitor only to Suffolk. They have been included within this Annex for completeness.

i. Desk-study

Suffolk Birds

1.3.30 The Suffolk Birds reports describe fieldfare as a common Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that there were 349 sightings recorded. A late sighting was recorded at Sizewell in June 2017.

RSPB

1.3.31 The RSPB reported a solitary record of fieldfare within 5km of the current Sizewell power station complex, with six birds recorded at RSPB North Warren Reserve in 2003.

SBIS

1.3.32 Desk-study records provided by SBIS (2014) reported a total of 14 records of fieldfare within 2km of the site between 1994 and 2012, of which 11 have been recorded in the last ten years. These records were located at RSPB Minsmere Reserve, Thorpeness, Westleton Walks, Aldringham Common and Walks, Leiston, Eastbridge and “Sizewell”.

NGL

1.3.33 Fieldfare was occasionally recorded on the EDF Energy estate by NGL (2005-2018), refer to **Table 1.15**.

Table 1.15: NGL records of fieldfare

Year	Description
2018	Eight records of fieldfare during the wintering farmland bird surveys with a peak count of six birds during the December survey.
2017	No records.
2016	Three records of fieldfare during the wintering farmland bird surveys with a peak count of 199 birds during the October survey.
2015	Four records of fieldfare during the wintering farmland bird surveys with a peak count of seven during the October and November surveys.
2014	Four records of fieldfare during the Winter bird surveys with a peak count of 15 birds during the March survey.
2013	Four records of fieldfare during the wintering farmland bird surveys with a peak count of four birds during the October survey.
2012	No records.
2011	No records.
2010	One record of four birds during the wintering farmland bird surveys in January.

Year	Description
2009	No records.
2008-2009	No records.
2007-2008	Four records of fieldfare during the wintering farmland bird surveys with a peak count of 44 birds in March 2008.
2006-2007	No records.
2005-2006	One record of 31 birds during the wintering farmland surveys in March 2006.

ii. **Secondary data**

1.3.34 Wood Group did not record fieldfare during any of the surveys undertaken.

iii. **Primary data**

1.3.35 Fieldfare was recorded on two occasions during the Winter bird survey 2014-2015, with both records occurring on the proposed main platform. One record related to two birds present in December 2014 and another two birds present in January 2015.

1.3.36 Fieldfare have also been observed during the marsh harrier VP survey in both Sizewell Marshes SSSI and the arable fields around Upper Abbey Farm.

1.3.37 In summary, fieldfare have been observed only rarely within the survey area, during the Winter.

f) **Redwing**

1.3.38 Redwing is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to: a decline of 73% in the UK breeding population in the last 25 years; a longer-term decline of 49% in the UK breeding population since the first BoCC review; a 45% reduction in the breeding range in the last 25 years; a longer-term reduction in the UK breeding range of 32%; and its breeding rarity, with only four to 16 pairs breeding in the UK (Ref. 1.2).

1.3.39 Note redwing, like fieldfare, only breed within the UK in the north of Scotland and therefore are a winter visitor only to Suffolk. They have been included within this Annex for completeness.

i. Desk-study

Suffolk Birds

1.3.40 The Suffolk Birds reports describe redwing as a common Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that there were 447 records, the closest sightings were in Aldeburgh (340 in October 2017).

RSPB

1.3.41 The RSPB reported two records of redwing within 5km of the current Sizewell power station complex, with both records located at RSPB North Warren Reserve. One record was of eight birds recorded in January 2003 and the other related to 60 birds in March 2003.

SBIS

1.3.42 Desk-study records provided by SBIS (2014) reported a total of 14 records of redwing within 2km of the site between 1995 and 2012, 11 of which were within the last ten years. These records were located at RSPB Minsmere Reserve, Thorpeness, Westleton Walks, Kenton Hills, Aldringham Common and Walks/Thorpeness Golf Course and “Sizewell”.

NGL

1.3.43 Redwing was recorded occasionally on the EDF Energy estate by NGL (2005-2018), refer to **Table 1.16**.

Table 1.16: NGL records of redwing

Year	Description
2018	Thirty-three records of redwing during the wintering farmland bird surveys with a peak count of 21 birds during the November survey.
2017	Three records of redwing during the wintering farmland bird surveys with a peak count of 2 birds during the February survey. Five records of redwing during the Upper Abbey Farm cover plot survey during October.
2016	Two records of redwing during the wintering farmland bird surveys with a peak count of 68 birds during the October survey. Five records of redwing during the Upper Abbey Farm cover plot survey during October.
2015	Three records of redwing during the wintering farmland bird surveys with a peak count of 22 birds during the October survey.
2014	Redwing was recorded on four occasions during the wintering farmland bird surveys, with a peak count of nine birds in March.
2013	Three records of redwing during the wintering farmland bird surveys with a peak count of 16 birds recorded during the November survey.

Year	Description
2012	One record of a single redwing during the November wintering farmland bird survey.
2011	One record of three redwing during the December wintering farmland bird survey.
2010	One record of 14 birds during the wintering farmland bird surveys in January.
2009	No records.
2008-2009	No records.
2007-2008	Two records of redwing during the wintering farmland bird surveys with a peak count of 31 birds in January 2008.
2006-2007	No records.
2005-2006	No records.

ii. **Secondary data**

1.3.44 Wood Group did not record redwing during any of the surveys undertaken.

iii. **Primary data**

1.3.45 Redwing was recorded on three occasions during the site 2014-2015 Winter bird survey. Two of these records occurred on the arable fields near Upper Abbey Farm, with four and five birds recorded during the November and December 2014 surveys respectively. The remaining record was located on the proposed main platform, with eight birds present during the December 2014 survey visit.

1.3.46 Redwing have also been observed during the marsh harrier VP survey in both Sizewell Marshes SSSI and the arable fields around Upper Abbey Farm.

1.3.47 In summary, redwing have been observed relatively regularly within the survey area during Winter, mostly in the arable fields across the site.

g) **Brambling**

1.3.48 Brambling is included on the Green List of BoCC (Ref. 1.2) Note Brambling also only breed within the UK in the north of Scotland and therefore are a winter visitor only to Suffolk. They have been included within this Annex for completeness.

i. Desk-study

Suffolk Birds

1.3.49 The Suffolk Birds reports describe brambling as a fairly common Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that 207 sightings were reported, with the majority in west Suffolk. The closest records were at Hollesley Common (over 20km south of Sizewell).

RSPB

1.3.50 The RSPB reported a solitary record of brambling within 5km of the existing Sizewell power station complex, with a single bird located at RSPB North Warren Reserve in 2003.

SBIS

1.3.51 Desk-study records provided by SBIS reported a total of 15 records of brambling within 2km of the site between 2004 and 2012 within 2km of the site, with 13 records in the last ten years. These records were located at RSPB Minsmere Reserve Thorpeness, Aldringham Common and Walks, Leiston, Eastbridge, Middleton and “Sizewell”.

NGL

1.3.52 Brambling was recorded occasionally on the EDF Energy estate by NGL, refer to **Table 1.17**.

Table 1.17: NGL records of brambling

Year	Description
2018	No records.
2017	Brambling was recorded once during the farmland wintering bird surveys during October.
2016	Three records of brambling were recorded in October during the farmland wintering bird surveys. Four records of brambling were recorded during the Eastbridge walk cover plot farmland bird survey in October.
2015	No records.
2014	Brambling was recorded twice during the farmland wintering bird surveys, with 20 birds recorded in January and 24 birds recorded in February.
2013	No records.
2012	No records.
2011	One adult bird was caught and ringed.
2010	No records.

Year	Description
2009	No records.
2008	No records.
2007	No records.
2006	One bird was caught and ringed.
2005	A total of four birds trapped.

ii. **Secondary data**

1.3.53 Wood Group did not record brambling during any of the surveys undertaken.

iii. **Primary data**

1.3.54 Brambling was recorded on a single occasion during the 2014-2015 Winter bird survey, with a solitary bird recorded commuting over the arable fields near Upper Abbey Farm in January 2015. This was the only record of brambling during the Arcadis bird surveys.

1.3.55 In summary, brambling have been observed very rarely, and in low numbers, within the survey area during Winter, mostly in the arable fields across the site.

h) **Crossbill**

1.3.56 Crossbill is included on the Green List of BoCC (Ref. 1.2).

i. **Desk-study**

Suffolk Birds

1.3.57 The Suffolk Birds reports describe crossbill as a locally common resident and irruptive visitor (i.e. it can occasionally occur in large numbers). The 2017 Suffolk Bird Report (Ref. 1.14) stated that 59 sightings were recorded, the closest records were at Hollesley Common (over 20km south of Sizewell).

RSPB

1.3.58 The RSPB reported two records of crossbill within 5km of the current Sizewell power station complex. These were from 2011 and 2012 and were of probable breeders located at RSPB Minsmere Reserve.

SBIS

1.3.59 Desk-study records provided by SBIS (2014) reported 17 records of crossbill within 2km of the site. Records are from between 2005 and 2012 and records were located at Thorpeness, RSPB Minsmere Reserve, “Sizewell”, Westleton Walks, Theberton Wood, Leiston and Aldringham Common.

NGL

1.3.60 NGL (2005-14) recorded crossbill on the EDF Energy estate, see **Table 1.18**.

Table 1.18: NGL records of crossbill

Year	Description
2018	No records.
2017	No records.
2016	No records.
2015	Thirty individuals were observed on Goose Hill in July.
2014	No records.
2013	No records.
2012	No records.
2011	No records.
2010	No records.
2009	No records.
2008	No records.
2007	No records.
2006	Birds seen throughout the year. Peak count of 60 on 12 May 2006 and 80 in May 2006.
2005	Birds seen throughout the year. Peak count of 20 on 29 August 2005.

ii. Secondary data

1.3.61 In the first interim Wood Group report in 2007 (refer to **Report 14A7.3-2, Annex 14A7.3**) crossbill was referred to as a historic breeding species; the last record of breeding within the EDF Energy estate was 1998, when three pairs were thought to have bred.

1.3.62 The second interim Wood Group bird report (refer to **Report 14A7.3-1, Annex 14A7.3**), covering August 2007 to March 2008, reported crossbill as present throughout the survey period. Crossbill is an early breeder (breeding is timed to coincide with cone ripening and can occur as early in

the year as January), and these records suggest that breeding could have occurred in Goose Hill, in both years.

1.3.63 Crossbill was recorded in Goose Hill whilst surveyors were undertaking bittern, marsh harrier and hen harrier surveys in April and July 2008 (when flocks of up to 100 birds were present). These flocks included a large number of “grey” and “brown” crossbills (adult females are grey green and adult males tend to be boldly red), indicating these were dispersing post-breeding birds from core breeding populations in Breckland, the wider UK or Continental Europe.

1.3.64 During the Wood Group 2010 breeding bird survey (refer to **Report 14A7.3-5, Annex 14A7.3**) crossbill was observed in Goose Hill but was not thought to be breeding.

1.3.65 During the Wood Group 2012 breeding bird survey of the arable conversion areas (refer to **Report 14A7.3-8, Annex 14A7.3**), crossbill was observed twice, but no evidence of breeding was recorded. Observations were located at Lower Abbey Farm on 15 May 2012 and Black Walks on 20 June 2012 when 15 birds and a single bird were recorded, respectively. In the southern part of the survey area, a single crossbill was recorded flying over the access road to Sizewell A and B power stations on 16 May 2012.

iii. Primary data

1.3.66 No crossbills were recorded during the Arcadis 2014 breeding bird survey. However, five crossbill were recorded at Goose Hill in January 2015, during the Arcadis 2014-2015 Winter bird surveys. These were the only record of crossbill during the Arcadis bird surveys.

1.3.67 In summary, crossbill have been recorded relatively regularly, both during the Winter and the Summer, with most records in Goose Hill and across the northern part of the survey area.

i) Snow bunting

1.3.68 Snow bunting is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to snow bunting being a breeding rarity in the UK. Snow bunting was recorded incidentally, and these are detailed below.

1.3.69 Snow bunting only breed in Scotland in the UK but are a winter visitor to Suffolk and other areas on the east coast and are included within this annex for completeness.

1.3.70 Snow bunting was recorded during the Wood Group seabird report in December 2011 and January 2012. Two records, with a peak count of 12

birds were recorded on the beach adjacent to Sizewell A power station during the December 2011 survey.

- 1.3.71 The Suffolk Birds reports describe snow bunting as a locally common Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that there were 121 records. The closest records were at Thorpeness (within 5km of Sizewell) where nine sightings were reported.

1.4 Red list and/or NERc species

a) Grey partridge

- 1.4.1 Grey partridge is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a dramatic decline of 76% in the last 25 years, a longer-term decline of 91% since the first BoCC review and a breeding range decline of 40% in the last 25 years (Ref. 1.2). Grey partridge is also listed as a priority species in Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified grey partridge as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

- 1.4.2 The Suffolk Birds reports described grey partridge as a formerly common resident but is now localised within the county. The 2017 Suffolk Bird Report (Ref. 1.14) stated that there were 154 records submitted, the highest counts were in west Suffolk, with other locations of sightings not disclosed. The 2018 Suffolk Bird Report (Ref. 1.15) stated that there were 111 reports from 46 sites, with a less successful year than 2017. There were no records of sightings in the south east of the county and breeding site locations were not stated.

RSPB

- 1.4.3 The RSPB reported two records of grey partridge within 5km of the existing Sizewell power station complex, with both records being of a single breeding pair located at RSPB Minsmere Reserve (one record in 2008, and the other in 2006).

SBIS

- 1.4.4 SBIS (2014) reported 12 records of grey partridge within 2km of the site, however, all records were older than 2002. These records were located at Aldringham Common and Walks, Theberton, Eastbridge, Leiston and “Sizewell”.

NGL

- 1.4.5 NGL have only recorded grey partridge as present within the EDF Energy estate on a single occasion within the last 14 years, with two birds recorded at Upper Abbey Farm during the 2006 farmland bird survey (NGL, 2007). Prior to 2004, grey partridge was irregularly recorded as a breeding species, with no more than a single territory present.

ii. Secondary data

- 1.4.6 Wood Group did not record the presence of grey partridge during their bird surveys.

iii. Primary data

- 1.4.7 During the Arcadis 2014 breeding bird survey, grey partridge was only recorded during the third survey visit, with a single bird recorded in an arable field to the north of Goose Hill. No grey partridge was recorded during the Arcadis 2014/15 Winter bird surveys.

- 1.4.8 In summary, grey partridge have been observed within the survey area during the breeding season and during the non-breeding season on farmland bird surveys conducted by NGL. Observations of grey partridge have been occasional with only individuals or a single pair observed at one time.

b) Turtle dove

- 1.4.9 Turtle dove is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to it being listed as “Vulnerable” by the International Union for the Conservation of Nature (IUCN) (Ref. 1.44), a 92% reduction in the UK breeding population in the last 25 years, a longer term decline of 96% in the UK breeding population since the first BoCC review, a reduction in the UK breeding range of 35% in the last 25 years and a longer term decline of 51% in the UK breeding range since the first BoCC review (Ref. 1.2). Turtle dove is also listed as a priority species in Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified turtle dove as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

- 1.4.10 The Suffolk Birds reports described turtle dove as a declining Summer visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that the number of reports were significantly lower than in 2016,

however in the RSPB Minsmere Reserve/Westleton area, numbers of turtle dove had increased, with 14 territories identified.

RSPB

1.4.11 The RSPB reported 27 records of turtle dove within 5km of the existing Sizewell power station complex. All but three of these records related to either confirmed or probable breeding. These records were located at both RSPB Minsmere Reserve and RSPB North Warren Reserve, but also records originated from Knodishall, “Sizewell”, Dunwich heath and Leiston. Peak counts at RSPB Minsmere and RSPB North Warren Reserves were 24 pairs in 2004 and 21 pairs in 2007, respectively.

SBIS

1.4.12 SBIS (2014) reported 18 records of turtle dove within 2km of the site. These records were at Aldringham Common, Thorpeness, Leiston, Aldringham-cum-Thorpe, RSPB Minsmere Reserve, Theberton, Eastbridge and “Sizewell”.

NGL

1.4.13 NGL have recorded turtle dove as a breeding species on the EDF Energy estate in nine of the last 14 years. A summary of turtle dove breeding records is shown in **Table 1.19**.

Table 1.19: Turtle dove breeding territories

Year	No. breeding territories April-June
2018	0
2017	0
2016	1
2015	1
2014	2
2013	0
2012	1
2011	1
2010	1
2009	2
2008	1
2007-08	2
2006-07	3
2005-06	1

Year	No. breeding territories April-June
2004-05	2

ii. Secondary data

1.4.14 During the Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), a single breeding turtle dove territory near Upper Abbey Farm. During the Wood Group 2010 breeding bird surveys (refer to **Report 14A7.3-5, Annex 14A7.3**), a single turtle dove was also recorded near Upper Abbey Farm. These were the only record of turtle dove, and it was unclear if this related to a breeding territory.

1.4.15 Turtle doves was not recorded during the Wood Group 2012 arable reversion breeding bird surveys (refer to **Report 14A7.3-8, Annex 14A7.3**).

iii. Primary data

1.4.16 Turtle dove was only recorded during the third survey visit during the Arcadis 2014 breeding bird survey, with three birds recorded singing in the reedbed within Sizewell Marshes SSSI, to the south of Goose Hill. The presence of three singing turtle dove during the breeding season, and the availability of suitable breeding habitat, would indicate that up to three breeding territories could be present within the survey area.

1.4.17 In summary, turtle dove has been present within the survey area during the breeding season. Turtle dove have been observed in the proposed main platform area, Sizewell Marshes SSSI and the arable fields in the northern part of the site. A maximum of three territories were recorded during the 2014 breeding bird season.

c) Cuckoo

1.4.18 Cuckoo is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a decline of 60% in the UK breeding population in the last 25 years and a longer-term decline of 62% in the UK breeding population since the first BoCC review (Ref. 1.2). Cuckoo is also listed as a priority species in Section 41 of the NERC Act (2006) (Ref. 1.3) and the Suffolk BAP identified cuckoo as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

1.4.19 The Suffolk Birds reports described cuckoo as a declining Summer visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that at least three sightings were reported at RSPB Minsmere Reserve.

RSPB

1.4.20 The RSPB reported 24 records of cuckoo within 5km of the existing Sizewell power station complex. These records were split between RSPB Minsmere and RSPB North Warren Reserves, with peak counts of ten individuals at RSPB Minsmere Reserve in 2012, and 12 singing males at RSPB North Warren Reserve in 2004.

SBIS

1.4.21 SBIS (2014) reported 20 records of cuckoo within 2km of the site. These records were located at RSPB Minsmere Reserve, Aldringham Common, Thorpeness, Eastbridge, Middleton, Lower Abbey Farm marshes and “Sizewell”.

NGL

1.4.22 NGL have recorded cuckoo as being present as a breeding species on the EDF Energy estate during each of the last 14 years. **Table 1.20** shows the number of breeding territories per year.

Table 1.20: Cuckoo breeding territories recorded by NGL

Year	No. breeding territories April-June
2018	2
2017	1
2016	1
2015	2
2014	2
2013	1
2012	1
2011	1
2010	1
2009	2
2008	2
2007	2

Year	No. breeding territories April-June
2006	1
2005	1

ii. Secondary data

1.4.23 During the Wood Group 2007 breeding bird survey (refer to **Report 14A7.3-2, Annex 14A7.3**), two cuckoo territories were recorded, one of which was within the site. During the 2010 breeding bird survey (refer to **Report 14A7.3-5, Annex 14A7.3**), only a single bird was observed, with a male recorded calling from the arable fields to the east of Upper Abbey Farm.

1.4.24 During the 2012 arable reversion breeding bird surveys (refer to **Report 14A7.3-8, Annex 14A7.3**), a single cuckoo territory was located on the south of the site near Leiston Common.

iii. Primary data

1.4.25 During the Arcadis 2014 breeding bird surveys, cuckoo was recorded during the first and third survey visit, each time with only a single bird recorded. The first visit record was located in close proximity to the Round House and the third survey visit record was observed in scrub to the north of Goose Hill.

1.4.26 Cuckoo was also recorded during the northern arable 2015 breeding bird surveys, with a single bird recorded near Lower Abbey Farm in May. Cuckoo was also recorded during the 2015 arable marsh harrier surveys, with a single bird recorded in May 2015.

1.4.27 The presence of cuckoo throughout the breeding season suggests it was likely that the site and its immediate surrounds supported at least two breeding cuckoo territories during the 2014 breeding season, and one in the 2015 breeding season.

d) Willow tit

1.4.28 Willow tit is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a 91% decline in the UK breeding population in the last 25 years, a longer term decline of 94% in the UK breeding population since the first BoCC review, a breeding range decline of 49% in the last 25 years, a longer term decline of 54% in the breeding range since the first BoCC review, and a decline of 43% in the non-breeding range in the last 25 years (Ref. 1.2). Willow tit is also listed as a priority species in Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified willow tit as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

- 1.4.29 The Suffolk Birds reports described willow tit as an uncommon resident and scarce passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that there were only two sightings of willow tit reported in north-west Suffolk on the Norfolk/Suffolk border. The 2018 Suffolk Bird Report (Ref. 1.15) stated that there was one record in the county which was reported at Landguard Fen RSPB Reserve in January 2018.

RSPB

- 1.4.30 The RSPB reported no records of willow tit within 5km of the existing Sizewell power station complex.

SBIS

- 1.4.31 SBIS (2014) reported three records of willow tit within 2km of the site, although none of these records were within the last ten years. These records were located at Eastbridge, RSPB Minsmere Reserve, and “Sizewell”.

NGL

- 1.4.32 NGL have not recorded willow tit as present on the EDF Energy estate in the last 14 years.

ii. Secondary data

- 1.4.33 Wood Group did not record the presence of willow tit as part of their bird surveys.

iii. Primary data

- 1.4.34 Willow tit was recorded on a single occasion during the Arcadis bird surveys, with a single bird recorded during the northern arable breeding bird surveys carried out in 2015. This bird was recorded in Sandpytle Plantation in May 2015. It is possible that willow tit may have bred within this plantation in 2015.

- 1.4.35 In summary, willow tit has been recorded within the site and the wider area during the breeding season on a single occasion but is unlikely to still be present on the site, given its apparent near extinction in Suffolk by 2018.

e) Marsh tit

1.4.36 Marsh tit is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a decline of 43% in the UK breeding population in the last 25 years and a longer-term decline of 72% in the UK breeding population since the first BoCC review (Ref. 1.2). Marsh tit is listed as a species of European Conservation Concern (REF) and is also listed as a priority species in Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified marsh tit as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

1.4.37 The Suffolk Birds reports described marsh tit as a fairly common resident. The 2017 Suffolk Bird Report 1.14) stated that six breeding pairs were confirmed at Sizewell SWT, single breeding pairs were also recorded at RSPB Minsmere Reserve, Dingle Marshes, and Darsham Marshes SWT (within 10km of Sizewell).

RSPB

1.4.38 The RSPB reported 23 records of marsh tit within 5km of the existing Sizewell power station complex. These records were located at both RSPB Minsmere and RSPB North Warren Reserves, with all but one record of confirmed or probable breeding. The peak counts were 27 pairs at RSPB Minsmere Reserve in 2004, and five pairs at RSPB North Warren Reserve in both 2003 and 2004.

SBIS

1.4.39 SBIS reported seven records of marsh tit within 2km of the site. These records were located at Lower Abbey Farm marshes, Theberton Woods, Eastbridge, RSPB Minsmere Reserve, and “Sizewell”.

NGL

1.4.40 NGL have recorded marsh tit regularly as a breeding species within the EDF Energy estate. Marsh tit have also been recorded during the farmland Winter bird surveys. A summary of marsh tit records is shown in **Table 1.21**.

Table 1.21: NGL marsh tit records

Year	No. breeding territories	Winter farmland bird surveys (peak count) January-March and September-December
2018	9	Unknown
2017	6	Unknown
2016	3	Unknown
2015	4	0
2014	6	0
2013	9	1
2012	6	0
2011	6	0
2010	5	0
2009	3	No survey
2008-09	2	No survey
2007-08	3	0
2006-07	2	No survey
2005-06	0	0
2004-05	1	0

ii. Secondary data

- 1.4.41 During the Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), five marsh tit territories were recorded. The territories were present in Kenton Hills, Goose Hill, and Ash Wood and in the proximity of Walk Barn. During the 2010 breeding survey (refer to **Report 14A7.3-5, Annex 14A7.3**), five marsh tit territories were also identified. Two territories on the southern fringes of Kenton Hills, two territories on the eastern boundary of Sizewell Marshes SSSI and a single territory in Fiscal Policy woodland.
- 1.4.42 During the 2012 arable reversion breeding bird surveys (refer to **Report 14A7.3-8, Annex 14A7.3**), a single marsh tit territory was recorded in arable fields in the north of the site and the area to the south associated with Leiston Common.
- 1.4.43 Wood Group reported marsh tit as being present in the Winter as part of the second interim bird report (refer to **Report 14A7.3-1, Annex 14A7.3**), though no numbers of individuals or locations of these records were reported.

iii. Primary data

- 1.4.44 Marsh tit was recorded during both the first and second survey visits of the Arcadis 2015 breeding bird surveys. A peak count of four birds was recorded during the first survey visit, with all records located within Kenton Hills. A solitary bird was recorded in the second visit and was located to the north of Sizewell B power station.
- 1.4.45 Marsh tit was not observed during the northern 2015 breeding bird surveys. However, they were recorded during the 2015 arable marsh harrier surveys on a single occasion, with two birds recorded from VPC in June 2015.
- 1.4.46 The presence of marsh tit during the breeding season, and the availability of suitable breeding habitat would indicate that this species is present as a breeding species within the survey area, with up to four breeding territories present.
- 1.4.47 Marsh tit was recorded on two occasions during the 2014-2015 Winter bird surveys, with six birds recorded in the November 2014 Goose Hill transect and two birds recorded during the December 2014 reedbed transect.
- 1.4.48 In summary, marsh tit have been observed within the site and the wider area during the breeding and non-breeding season. Sightings were located in the proposed main platform, in the woodland of Kenton Hills, the arable fields within and adjacent to the site and Sizewell Marshes SSSI. A maximum of nine breeding territories have been recorded historically.

f) Skylark

- 1.4.49 Skylark is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a decline of 32% in the UK breeding population in the last 25 years and a longer-term decline of 62% in the UK breeding population since the first BoCC review (Ref. 1.2). Skylark is also listed as a priority species in Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified skylark as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

- 1.4.50 The Suffolk Birds reports described skylark as a common resident, passage migrant and Winter visitor. The 2017 Suffolk Bird Report (Ref. 1.14) stated that 20 skylark territories were recorded at Sizewell (SWT).

RSPB

1.4.51 The RSPB reported 20 records of skylark within 5km of the existing Sizewell power station complex. These records were located at both RSPB Minsmere and RSPB North Warren Reserves, with all records relating to either confirmed or probable breeding. The peak counts for these records were 141 pairs at RSPB North Warren Reserve in 2008, and 82 at RSPB Minsmere Reserve in 2005.

SBIS

1.4.52 SBIS reported 17 records of skylark within 2km of the site. These records were located at Thorpeness, RSPB Minsmere Reserve, Kenton Hills, Aldringham Common and Walks/Thorpeness Golf Course, Leiston, Theberton, and “Sizewell”.

NGL

1.4.53 NGL have recorded skylark as present as a breeding species within the EDF Energy estate in every year for the past 14 years. Skylark have also regularly been recorded as part of the Winter farmland bird survey. **Table 1.22** summarises NGL skylark records.

Table 1.22: NGL records of skylark

Year	No. breeding territories April-June yearly	Winter farmland bird survey (peak count) January-March and September-December yearly
2018	27	52
2017	20	87
2016	23	87
2015	15	60
2014	5	71
2013	7	38
2012	6	21
2011	4	74
2010	7	36
2009	9	No survey
2008-2009	15	No survey
2007-2008	14	53
2006-2007	16	No survey
2005-2006	15	60

Year	No. breeding territories April-June yearly	Winter farmland bird survey (peak count) January-March and September-December yearly
2004-2005	23	98

ii. Secondary data

1.4.54 During the Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), 24 skylark territories were recorded. During the 2010 breeding bird surveys (refer to **Report 14A7.3-5, Annex 14A7.3**), 18 skylark territories were recorded. Two of these territories were on the proposed main platform land, with another territory in the adjacent dunes. There were ten territories located in the arable fields between Ash Wood and Goose Hill, three territories to the north of Goose Hill and a single territory to the west of Fiscal Policy woodland.

1.4.55 Skylark was observed during the 2012 arable reversion area breeding bird surveys (refer to **Report 14A7.3-8, Annex 14A7.3**). A total of 23 territories were recorded, 15 at the southern end of the site near Leiston Common and eight to the north in arable fields.

1.4.56 Skylark was also recorded as part of the 2007-2008 Winter walkover survey; however, no specific count was made (refer to **Report 14A7.3-1, Annex 14A7.3**).

iii. Primary data

1.4.57 Skylark was recorded during each of the three visits of the Arcadis 2014 breeding bird survey, with peak counts of seven birds recorded during the second and third survey visits. All skylarks were recorded in the arable fields to the north of Kenton Hills. Skylark was recorded during 2015 northern breeding bird surveys, with two records of skylark. One record was of a solitary bird located to the west of Ash Wood in April 2015, and another solitary bird recorded to the north east of Ash Wood in May 2015. Skylark was also recorded during the arable marsh harrier surveys in 2015 on 16 occasions, with a peak count of three birds recorded on two occasions, once from VPA in April 2015 and once from VPF in May 2015. The continued presence of skylark during the breeding season and the availability of suitable breeding habitat would indicate that up to seven breeding territories were present within the survey area.

1.4.58 Skylark was recorded in four of the five surveys visits during the 2014-2015 Winter bird surveys. All of these records were located in the arable fields around Upper Abbey Farm, with a peak count of 16 birds recorded in November 2014.

1.4.59 Skylark was also recorded during the 2018-2019 marsh harrier surveys within the Minsmere South Levels.

1.4.60 In summary, skylark have been recorded within the site and the wider area during the breeding and non-breeding season. A maximum of 23 territories were recorded by Wood Group within the EDF Energy estate during the breeding bird survey in 2012.

g) Wood warbler

1.4.61 Wood warbler is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a decline of 66% in the UK breeding population in the last 25 years, a decline in the breeding range of 37% in the UK in the last 25 years and a longer term decline of 34% in the breeding range since the first BoCC review (Ref. 1.2). Wood warbler is also listed as a priority species in Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified wood warbler as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

1.4.62 The Suffolk Birds reports described wood warbler as a scarce Spring and Autumn migrant. This species has formerly bred within the county. The 2017 Suffolk Bird Report (Ref. 1.14) stated that six sightings were recorded, with one record at each of the following locations: RSPB Minsmere Reserve, Thorpeness and Dunwich Heath.

RSPB

1.4.63 The RSPB reported no records of wood warbler within 5km of the existing Sizewell power station complex.

SBIS

1.4.64 SBIS (2014) reported four records of wood warbler within 2km of the site, three of which were in the last ten years. These records were located at RSPB Minsmere Reserve, Theberton Woods, and Aldringham Common.

NGL

1.4.65 NGL have not recorded the presence of wood warbler on the EDF Energy estate in the last 14 years.

ii. Secondary data

1.4.66 During the Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), a singing wood warbler was recorded at Fiscal Policy woodland, although it is not thought that this bird bred at this location.

iii. Primary data

1.4.67 Wood warbler was not recorded as part of the Arcadis bird surveys.

1.4.68 In summary, wood warbler has been observed historically within the survey area; however, it was concluded that wood warbler has not breed within the survey area in recent years and are therefore unlikely to be present as a breeding species within the survey area.

h) Starling

1.4.69 Starling is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a 70% reduction in the UK breeding population in the last 25 years and a longer-term decline of 83% in the UK breeding population since the first BoCC review (Ref. 1.2). Starling is listed as a species of European Conservation Concern, and is also listed as a priority species in Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified starling as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

1.4.70 The Suffolk Birds reports described starling as a very common but declining resident, Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that 1953 records were submitted from 194 sites. Flocks of up to 50,000 were recorded at RSPB Minsmere Reserve.

RSPB

1.4.71 The RSPB reported three records of starling within 5km of the existing Sizewell power station complex. One record was of probable breeding at RSPB Minsmere Reserve in 2008, although the number of birds was not reported. The remaining two records were of birds located at RSPB North Warren Reserve, with a single record of a pair confirmed as breeding in 2004. A flock of 1,500 birds was also recorded in March 2003.

SBIS

1.4.72 SBIS (2014) reported ten records of starling within 2km of the site. These records were located at Aldringham Common, Leiston, Thorpeness, RSPB Minsmere Reserve, Theberton, and “Sizewell”.

NGL

1.4.73 NGL have not recorded starling as a breeding species on the EDF Energy estate within the last ten years of surveys; however, starling have been recorded as present during the Winter farmland bird surveys. A summary of these records is presented in **Table 1.23**.

Table 1.23: NGL records of starling

Year	Winter farmland bird survey (peak count) January-March and September-December
2018	0
2017	0
2016	150
2015	0
2014	12
2013	32
2012	1
2011	150
2010	9
2009	No survey
2008-2009	No survey
2007-2008	30
2006-2007	No survey
2005-2006	28
2004-2005	0

ii. Secondary data

1.4.74 The Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), recorded the presence of a single pair of starlings in woodland near Old Abbey Farm. During the 2010 breeding bird survey (refer to **Report 14A7.3-5, Annex 14A7.3**), starling was not recorded as present, however, only one survey was carried out in the area around Old Abbey Farm and it is possible that birds could have been missed.

1.4.75 Starling was also observed during the arable reversion area 2012 breeding bird surveys (refer to **Report 14A7.3-8, Annex 14A7.3**). Three pairs of starlings were observed in association with the buildings near Sizewell Beach and juvenile starling were also observed in this area. It is likely that starling use the Sizewell Beach as a foraging resource during the breeding season.

iii. Primary data

1.4.76 Starling was recorded during the second and third survey visits of the Arcadis 2014 breeding bird surveys, with a peak count of ten birds recorded during the third visit. During the second survey visit there were two birds recorded on Sizewell Beach, and during the third survey visit a flock of ten birds were recorded foraging in an arable field adjacent to Upper Abbey Farm. Starling was recorded during the northern 2015 breeding bird survey on two occasions with a total of four birds recorded. In April 2015, three birds were recorded in Black Walks and in May a single bird was recorded to the east of Lower Abbey Farm. Starling was also recorded during the 2015 arable marsh harrier survey on six occasions, with a peak count of 22 birds recorded in August 2015.

1.4.77 The continued presence of starling during the breeding season and the availability of suitable breeding habitat would indicate that up to ten territories could be present within the site and the wider area.

1.4.78 Starling was not recorded as present on the site during the 2014-2015 Winter bird surveys.

1.4.79 In summary, starling have been observed within the site and its immediate surround during the breeding and non-breeding season. During the non-breeding season starling was observed within arable fields, with a peak count of 150 individuals and during the breeding season starling was observed within arable fields and Sizewell Beach, with a maximum of ten breeding territories within the survey area.

i) Ring ouzel

1.4.80 Ring ouzel is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a 72% decline in the UK breeding population in the last 25 years and a breeding range decline of 43% in since the first BoCC review (Ref. 1.2). Ring ouzel is also listed as a priority species in Section 41 of NERC Act (Ref. 1.3).

i. Desk-study

Suffolk Birds

- 1.4.81 The Suffolk Birds reports described ring ouzel as a fairly common passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that there were 166 sightings recorded. The first bird of the spring was recorded at RSPB Minsmere Reserve and the first bird of the autumn was seen at Thorpeness.

RSPB

- 1.4.82 The RSPB reported no records of ring ouzel within 5km of the site.

SBIS

- 1.4.83 SBIS (2014) reported 16 records of ring ouzel within 2km of the site, 11 of which were in the last ten years. These records were located at Aldringham-cum-Thorpe, Leiston Common, Thorpeness, RSPB Minsmere Reserve, Aldringham Common, and “Sizewell”.

NGL

- 1.4.84 NGL have not recorded the presence of ring ouzel on the EDF Energy estate in the last 14 years.

ii. Secondary data

- 1.4.85 Ring ouzel was recorded during the Wood Group 2007 breeding bird surveys; however, the number of birds present was not recorded (refer to **Report 14A7.3-2, Annex 14A7.3**).

iii. Primary data

- 1.4.86 Ring ouzel was not recorded as part of the Arcadis bird surveys.
- 1.4.87 In summary, ring ouzel are an upland bird, only recorded as a breeding species in North and Western Britain and only recorded in East Anglia on passage. Ring ouzel will therefore not be a breeding species within the survey area.

j) Song thrush

- 1.4.88 Song thrush is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a severe decline of 59% in the UK breeding population in the last 25 years (Ref. 1.2). Song thrush is also listed as a priority species in

Section 41 of NERC Act (Ref. 1.3) and the Suffolk BAP identified song thrush as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

1.4.89 The Suffolk Birds reports describe song thrush as a fairly common resident, Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that there were 123 sightings reported. At Sizewell SWT, eight breeding pairs were reported.

RSPB

1.4.90 The RSPB reported 23 records of song thrush within 5km of the existing Sizewell power station complex. All but one record were of either confirmed or probable breeding, and were located at both RSPB Minsmere and RSPB North Warren Reserves. The peak count for RSPB Minsmere Reserve was 13 pairs in 2003, 40 pairs at RSPB North Warren Reserve in 2005.

SBIS

1.4.91 SBIS (2014) reported 13 records of song thrush within 2km of the site. These records were located at Aldringham-cum-Thorpe, Thorpeness, Aldringham Walks and Common, Leiston, RSPB Minsmere Reserve, Theberton and “Sizewell south marsh” and Sizewell Marshes SSSI.

NGL

1.4.92 NGL have recorded song thrush as present as a breeding species in every year for the past 14 years. Song thrush have also regularly been recorded as part of the Winter farmland bird survey. **Table 1.24** summarises NGL song thrush records.

Table 1.24: NGL song thrush records

Year	No. breeding territories April-June	Winter farmland bird survey (peak count) Jan-Mar and Sept-Dec
2018	5	3
2017	8	3
2016	3	9
2015	3	2
2014	2	2
2013	8	1

Year	No. breeding territories April-June	Winter farmland bird survey (peak count) Jan-Mar and Sept-Dec
2012	13	2
2011	6	2
2010	6	2
2009	5	No survey
2008-2009	12	No survey
2007-2008	4	2
2006-2007	2	No survey
2005-2006	1	1
2004-2005	3	0

ii. Secondary data

1.4.93 In 2007, 12 song thrush territories were recorded during the Wood Group breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**). The 2010 breeding bird surveys (refer to **Report 14A7.3-5, Annex 14A7.3**) recorded ten song thrush territories, with territories found in Kenton Hills and Goose Hill woodland, arable fields and Sizewell Marshes SSSI. Song thrush was also observed during the 2012 arable reversion area breeding bird surveys (refer to **Report 14A7.3-8, Annex 14A7.3**). A total of four territories were recorded, with three to the south of the site in the vicinity of Leiston Common and one in the arable fields to the north.

1.4.94 Song thrush was recorded once during the 2008-2009 winter bird surveys (refer to **Report 14A7.3-1, Annex 14A7.3**). The single bird was recorded foraging within the survey area; however, the location of this bird was not provided.

iii. Primary data

1.4.95 Song thrush was recorded during each of the three Arcadis 2014 breeding bird, with a peak count of three birds recorded during the third visit. Song thrushes was recorded across the entire site. Song thrush was not recorded during the 2015 northern arable breeding bird survey. The continued presence of song thrush during the breeding season and the availability of suitable breeding habitat would indicate that up to three breeding territories present within the site and the wider area.

1.4.96 Song thrush was recorded during three of the five survey visits during the 2014-2015 Winter bird surveys. These records were located across the site, with a peak count of two birds recorded in the vicinity of Ash Wood Cottages.

1.4.97 Song thrush was also recorded during the 2018-2019 marsh harrier surveys within the Minsmere South Levels.

1.4.98 In summary, song thrush has been recorded within the site and the wider area during the breeding season, with a maximum of 13 territories present within the EDF Energy estate recorded by NGL. During the non-breeding season, a maximum of two song thrush were recorded.

k) Mistle thrush

1.4.99 Mistle thrush is regarded as being of medium conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a decline of 45% in the UK breeding population in the last 25 years, and a longer-term decline of 62% in the UK breeding population since the first BoCC review (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.4.100 The Suffolk Birds reports described mistle thrush as a fairly common resident and scarce passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that 473 sightings were reported. There were no notable double-figure counts found near to Sizewell however, not all locations were discussed within the report.

RSPB

1.4.101 The RSPB reported 26 records of mistle thrush within 5km of the existing Sizewell power station complex. All records were of either confirmed or probable breeding and records were located at both RSPB Minsmere and RSPB North Warren Reserves. Peak counts were 26 pairs at RSPB Minsmere Reserve in 2005, and 37 pairs at RSPB North Warren Reserve also in 2005.

SBIS

1.4.102 SBIS (2014) did not report any mistle thrush records within 2km of the site.

NGL

1.4.103 NGL have recorded mistle thrush as a breeding species within the EDF Energy estate in every year of the past 14 years. Mistle thrush have also irregularly been recorded as present during the Winter farmland bird surveys. A summary of NGL mistle thrush records are shown in **Table 1.25**.

Table 1.25: NGL mistle thrush records

Year	No. breeding territories April-June	Winter farmland bird survey (peak count) Jan-Mar and Sept-Dec
2018	1	Unknown
2017	1	Unknown
2016	2	Unknown
2015	1	1
2014	2	0
2013	2	0
2012	1	0
2011	1	0
2010	1	0
2009	1	No survey
2008-2009	2	No survey
2007-2008	3	2
2006-2007	1	No survey
2005-2006	1	0
2004-2005	5	1

ii. Secondary data

1.4.104 During the Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), 13 breeding mistle thrush territories were recorded with a single breeding territory located within the site. During the 2010 breeding bird surveys (refer to **Report 14A7.3-5, Annex 14A7.3**), the presence of three breeding mistle thrush territories were recorded. These territories were located in the plantation within Goose Hill and Kenton Hills. Wood Group also reported the presence of mistle thrush during the 2012 arable reversion breeding bird survey (refer to **Report 14A7.3-8, Annex 14A7.3**). The birds were recorded as present in both the northern area, arable fields around The Round House and Lower Abby Farm and the southern area, in the vicinity of Leiston Common.

1.4.105 Wood Group did not report the presence of mistle thrush during the 2008-2009 Winter walkover surveys (refer to **Report 14A7.3-1, Annex 14A7.3**).

iii. Primary data

1.4.106 Mistle thrush was recorded during the first survey visit of the Arcadis 2014 breeding bird survey, with two birds observed. One bird was heard singing in Ash Wood, and another singing in Stonewall Belt. Mistle thrush was not

recorded as part of the 2015 northern arable breeding bird survey; however, mistle thrush was recorded during the 2015 arable marsh harrier survey on seven occasions, with a peak count of three birds recorded from VPD in May 2015. The sightings of mistle thrush during the breeding season, and the presence of suitable breeding habitat would indicate that up to three breeding territories were located within the site and the wider area.

1.4.107 Mistle thrush was recorded on a single occasion during the 2014-2015 Winter bird surveys, with a single bird recorded in Ash Wood during the March 2015 visit.

1.4.108 In summary, mistle thrush have been observed within the site and the wider area during the breeding season, a maximum of five territories have been recorded and during the non-breeding season, with a peak count of two mistle thrush records. Mistle thrush are associated with the small woodland areas within the arable fields to the north.

l) Spotted flycatcher

1.4.109 Spotted flycatcher is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a decline of 80% in the UK breeding population in the last 25 years and due to a longer-term decline of 88% in the UK breeding population since the first BoCC review (Ref. 1.2). Spotted flycatcher is also listed as a priority species in Section 41 of NERC Act (Ref. 1.3) and the Suffolk BAP identified spotted flycatcher as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

1.4.110 The Suffolk Birds reports described spotted flycatcher as a declining Summer visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that various sightings were reported at RSPB Minsmere Reserve and Thorpeness, however west Suffolk continues to be a stronghold for this species.

RSPB

1.4.111 The RSPB reported four records of spotted flycatcher within 5km of the existing Sizewell power station complex. These records were all of either confirmed or probable breeding located at RSPB Minsmere Reserve. The peak count was of two pairs at RSPB Minsmere Reserve in 2006.

SBIS

- 1.4.112 SBIS (2014) reported 19 records of spotted flycatcher within 2km of the site, with 12 of these records within the last ten years. These records were located at Thorpeness, RSPB Minsmere Reserve, Theberton Woods, Eastbridge, Theberton, Aldringham Common, Westleton and “Sizewell”.

NGL

- 1.4.113 NGL have only recorded spotted flycatcher as a breeding species on the EDF Energy estate in two years. These were 2006 and 2007, and in both years a single pair of spotted flycatchers raised four young at Upper Abbey Farm. Other than this, birds were noted on passage in 2004 and 2008.

ii. Secondary data

- 1.4.114 Wood Group recorded two pairs of spotted flycatchers as present during the 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**). One of these pairs was located in woodland to the north of Fiscal Policy woodland and the other pair was located in Kenton Hills. Wood Group recorded a single pair of spotted flycatchers during the 2010 breeding bird survey (refer to **Report 14A7.3-5, Annex 14A7.3**), with a single pair present to the west of Sizewell B power station.
- 1.4.115 Wood Group did not record spotted flycatcher during the 2012 arable reversion breeding bird surveys (refer to **Report 14A7.3-8, Annex 14A7.3**).

iii. Primary data

- 1.4.116 Spotted flycatcher was not recorded during any of the Arcadis bird surveys.
- 1.4.117 In summary, spotted flycatcher have been recorded historically within the site and the wider area during the breeding season, but in line with a national decline, this species has not been recorded breeding since 2010 and is not considered to currently breed within the site.

m) Nightingale

- 1.4.118 Nightingale is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a decline of 60% in the UK breeding population in the last 25 years, a longer-term decline of 85% since the first BoCC review and a breeding range decline of 43% since the first BoCC review (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.4.119 The Suffolk Birds reports described nightingale as a declining Summer visitor and scarce passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that sightings were reported at RSPB Minsmere Reserve, Thorpeness and Westleton, Key breeding territories were recorded at RSPB Minsmere Reserve, Dingle Marshes, Dunwich and RSPB North Warren Reserves.

RSPB

1.4.120 The RSPB reported 23 records of nightingale within 5km of the existing Sizewell power station complex. These records were all of either confirmed or probable breeding located at both RSPB Minsmere and RSPB North Warren Reserves. The peak counts were of 44 pairs at RSPB North Warren Reserve in 2006, and 37 pairs at RSPB Minsmere Reserve in 2006.

SBIS

1.4.121 SBIS (2014) reported 15 records of nightingale within 2km of the site, with 12 of these records within the last ten years. These records were located at Thorpeness, RSPB Minsmere Reserve, Aldringham-cum-Thorpe, Eastbridge, Aldringham Green, Aldringham Common, and the existing Sizewell power station complex.

NGL

1.4.122 NGL have recorded nightingale as present as a breeding species on the EDF Energy estate in 11 of the last 14 years. A summary of NGL nightingale records is shown in **Table 1.26**.

Table 1.26: NGL nightingale records

Year	No. breeding territories (April-June)
2018	0
2017	0
2016	2
2015	1
2014	1
2013	0
2012	3
2011	2
2010	3

Year	No. breeding territories (April-June)
2009	2
2008-2009	2
2007-2008	1
2006-2007	1
2005-2006	1
2004-2005	1

ii. Secondary data

1.4.123 Wood Group recorded five breeding bird territories during the 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**). Four of these territories were located in the vicinity of Broom Covert, and there was a single territory to the north of Upper Abbey Farm. Nightingale was not recorded as part of the 2008 breeding bird surveys (refer to **Report 14A7.3-5, Annex 14A7.3**). However, nightingale was recorded during the 2012 arable reversion breeding bird surveys (refer to **Report 14A7.3-8, Annex 14A7.3**), with one territory located in the southern area associated with Leiston Common.

iii. Primary data

1.4.124 Nightingale was not recorded during any of the Arcadis bird surveys, however, a single bird was heard calling from the Fiscal Policy car park in 2014 during the Wood Group surveys, but no evidence to suggest it stayed to breed.

1.4.125 In summary, historically nightingale was recorded within the site and the wider area during the breeding season, a maximum of five territories were recorded in 2008. Nightingale are not thought to currently breed within the survey area.

n) Whinchat

1.4.126 Whinchat is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a decline of 55% in the UK breeding population in the last 25 years, a decline of 38% in the breeding range in the last 25 years and a longer-term decline of 48% in the breeding range since the first BoCC review (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.4.127 The Suffolk Birds reports described whinchat as a declining passage migrant and this species has formerly bred in the county. The 2017 Suffolk Bird Report (Ref. 1.14) stated that only a few sightings were recorded, including four records from RSPB Minsmere Reserve.

RSPB

- 1.4.128 The RSPB reported no records of whinchat within 5km of the existing Sizewell power station complex.

SBIS

- 1.4.129 SBIS (2014) reported 11 records of whinchat within 2km of the site, eight of which were in the last ten years. These records were located at RSPB Minsmere Reserve, Aldringham Common, and Sizewell Beach.

NGL

- 1.4.130 NGL have recorded whinchat on the EDF Energy estate on two occasions; with a single adult bird ringed in 2011, and another single adult bird ringed in 2008.

ii. Secondary data

- 1.4.131 Whinchat was recorded as present during the Wood Group 2007 breeding bird surveys, although the location and number of birds was not reported (refer to **Report 14A7.3-2, Annex 14A7.3**). No other sightings of whinchat were observed during the Wood Group surveys.

iii. Primary data

- 1.4.132 Whinchat was not recorded as part of the Arcadis bird surveys.

- 1.4.133 In summary, whinchat was recorded sporadically within the survey area during the breeding season. Only single whinchats have been recorded within the site and the wider area. It is, therefore, concluded that whinchat do not breed within the site.

o) Dunnock

- 1.4.134 Dunnock is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This is due to a long-term decline of 31% in the UK breeding population since the first BoCC review (Ref. 1.2). Dunnock is also listed as a priority species in

Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified dunnock as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

1.4.135 The Suffolk Birds reports described dunnock as a very common resident and fairly common migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that 42 pairs were confirmed to be breeding at Sizewell SWT.

RSPB

1.4.136 The RSPB reported 24 records of dunnock within 5km of the existing Sizewell power station complex. These records were all of either confirmed or probable breeding and were located at both RSPB Minsmere and RSPB North Warren Reserve. Peak counts during the breeding season were not recorded at RSPB Minsmere Reserve, however at RSPB North Warren Reserve the peak count was 237 pairs in 2007.

SBIS

1.4.137 SBIS (2014) reported four records of dunnock within 2km of site. These records were located at Kenton Hills, RSPB Minsmere Reserve and “Sizewell”.

NGL

1.4.138 NGL have recorded the presence of dunnock as a breeding species on the EDF Energy estate in each of the last 14 years. Dunnock has also been recorded as part of the Winter farmland bird surveys. A summary of NGL dunnock data is shown in **Table 1.27**.

Table 1.27: NGL dunnock records

Year	No. breeding territories April-June	Winter farmland bird survey (peak count) Jan-Mar and Sept-Dec
2018	46	8
2017	42	9
2016	52	7
2015	55	9
2014	46	14
2013	43	3
2012	31	4

Year	No. breeding territories April-June	Winter farmland bird survey (peak count) Jan-Mar and Sept-Dec
2011	29	2
2010	24	7
2009	21	No survey
2008-2009	29	No survey
2007-2008	43	5
2006-2007	27	No survey
2005-2006	34	2
2004-2005	25	2

ii. Secondary data

1.4.139 The Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), reported the presence of 48 breeding dunnock territories. The 2010 breeding bird surveys (refer to **Report 14A7.3-5, Annex 14A7.3**) reported the presence of a total of 39 dunnock territories. Dunnock territories were located on the proposed main platform, in Kenton Hills and Goose Hill, in the arable fields, and in Sizewell Marshes SSSI. A total of 32 dunnock territories were recorded by Wood Group during the 2012 arable reversions breeding bird survey (refer to **Report 14A7.3-8, Annex 14A7.3**). Of these, 20 territories were within the area associated with Leiston Common and 12 were within the arable fields to the north.

1.4.140 Dunnock was also reported as present during the 2007-2008 Winter walkover surveys (refer to **Report 14A7.3-1, Annex 14A7.3**).

iii. Primary data

1.4.141 Dunnock was recorded throughout the Arcadis 2014 breeding bird survey, with a peak count of eight birds recorded during the third survey visit. Dunnock was found across the site, although the largest numbers were recorded in the arable fields to the north of Kenton Hills. The 2015 northern arable breeding bird surveys recorded dunnock on three occasions, with all records located in the vicinity of Lower Abbey Farm, Black Walks or the Round House. Dunnock was also recorded during the arable 2015 marsh harrier surveys on 14 occasions, with a peak count of three birds recorded from VPA in August 2015.

1.4.142 The continued presence of dunnock during the breeding season and the availability of suitable breeding habitat would indicate that up to eight breeding territories could be present within the survey area.

1.4.143 Dunnock was recorded during every survey visit of the 2014-2015 Winter bird surveys. These records were scattered widely across the site, although the main concentration of birds was located in the arable fields in the vicinity of Upper Abbey Farm. The peak count (11 birds) was recorded in March 2015.

1.4.144 In summary, dunnock have been observed throughout the site and the wider area during the breeding season, with a maximum of 46 breeding territories recorded. Dunnock have also been observed within the non-breeding season, with a peak count of 14 birds.

p) House sparrow

1.4.145 House sparrow is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a decline of 32% in the UK breeding population in the last 25 years, a dramatic long-term decline of 66% in the UK breeding population since the first BoCC review (Ref. 1.2). House sparrow is also listed as a priority species in Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified house sparrow as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

1.4.146 The Suffolk Birds reports (Suffolk Naturalists Society, 2004, 2010 to 2013) described house sparrow as a common but declining resident. The 2017 Suffolk Bird Report (Ref. 1.14) stated that there had been an increase in sightings reported from previous years. No flocks of more than 40 birds were recorded within 10km of Sizewell.

RSPB

1.4.147 The RSPB reported two records of house sparrow within 5km of the existing Sizewell power station complex, with records of a single pair each at RSPB Minsmere and RSPB North Warren Reserves.

SBIS

1.4.148 SBIS (2014) reported eight records of house sparrow within 2km of the site. These records were located at Leiston, Leiston Common, Lower Abbey Farm marshes, Eastbridge, RSPB Minsmere Reserve, Sizewell Beach, and Black Walks.

NGL

1.4.149 NGL have reported house sparrow as breeding on the EDF Energy estate in every year for the past 14 years. House sparrow have also been regularly recorded during the farmland Winter bird surveys. **Table 1.28** summarise the house sparrow records from NGL.

Table 1.28: NGL house sparrow records

Year	No. breeding territories April- June	Farmland bird survey (peak count) Jan-Mar and Sept-Dec
2018	9	11
2017	7	21
2016	8	37
2015	9	27
2014	9	45
2013	13	50
2012	5	11
2011	12	15
2010	8	10
2009	8	No survey
2008-2009	15	No survey
2007-2008	12	12
2006-2007	8	No survey
2005-2006	4	0
2004-2005	7	0

ii. Secondary data

1.4.150 During the Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), there was a colony of 16 pairs located at Upper Abbey Farm. During the 2010 breeding bird surveys (refer to **Report 14A7.3-1, Annex 14A7.3**), house sparrow was recorded in the vicinity of domestic properties and farms, including Upper Abbey Farm , however, the number of birds was not recorded.

1.4.151 During the arable 2012 reversion breeding bird surveys (refer to **Report 14A7.3-8, Annex 14A7.3**), ten house sparrow breeding territories were recorded. Four territories were recorded in the arable fields in the north of the survey area and six in the south area, associated with Leiston Common.

iii. Primary data

- 1.4.152 House sparrow was recorded during the Arcadis 2014 breeding bird survey, with birds recorded throughout the breeding season. The peak count of five birds was recorded during both the second and third survey visits. House sparrow records were confined to the beach located in close proximity to Sizewell village. The 2015 northern arable breeding bird surveys recorded house sparrow at Lower Abbey Farm on two occasions. The peak count was 10+ birds in May 2015. The 2015 arable marsh harrier survey recorded house sparrow on nine occasions, with a peak count of ten birds recorded from VPA in July 2015.
- 1.4.153 The majority of the house sparrow records were found to the south of the site boundary, and as such, it is likely that the domestic and farm buildings, and the beach adjacent to Sizewell A power station are used as nesting and foraging resources.
- 1.4.154 The 2014-2015 wintering bird survey recorded house sparrow on three occasions, with all records located around Sizewell village. The peak count was three birds recorded in both December 2014 and January 2015.
- 1.4.155 In summary, house sparrow was recorded within the site and the wider area during the breeding season, often associated with domestic and farm buildings. A peak count of 15 house sparrow breeding territories have been recorded. House sparrow was also recorded during the non-breeding season, a peak count of 50 house sparrow have been recorded within arable fields north of Kenton Hills.

q) Tree sparrow

- 1.4.156 Tree sparrow is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a dramatic long-term decline of 90% in the UK breeding population since the first BoCC review, and a reduction in the breeding range of 37% since the first BoCC review (Ref. 1.2). Tree sparrow is also listed as a priority species in Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified tree sparrow as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

- 1.4.157 The Suffolk Birds reports described the tree sparrow as an uncommon and declining resident and a scarce passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that there was a decline in the number of records.

There were no records mentioned near to Sizewell, with significant numbers mostly seen in west Suffolk.

RSPB

- 1.4.158 The RSPB reported a single record of tree sparrow within 5km of the existing Sizewell power station complex. This record was of probable breeding at RSPB Minsmere Reserve in 2008, however, the number of pairs was not reported (Ref. 1.45).

SBIS

- 1.4.159 SBIS (2014) reported seven tree sparrow records within 2km of the site. These records were located at Thorpeness, Aldringham Common, Aldringham-cum-Thorpe, RSPB Minsmere Reserve and Ash Wood within the EDF Energy estate.

NGL

- 1.4.160 NGL have not reported the presence of tree sparrow as a breeding species within the past 14 years. Tree sparrow have been noted on the main EDF Energy estate during the Winter months, with the last record in Ash Wood in 2008.

ii. Secondary data

- 1.4.161 Wood Group did not record the presence of tree sparrow during their surveys.

iii. Primary data

- 1.4.162 Tree sparrow was only recorded during the first visit of the Arcadis 2014 breeding bird survey, with only a single bird located in scrub to the south of Goose Hill. The presence of only a single tree sparrow at the beginning of the breeding season indicates that tree sparrow is unlikely to be breeding within the site. Tree sparrow was not recorded during the 2014-2015 Winter bird surveys.

- 1.4.163 In summary, tree sparrow has been recorded sporadically during the breeding season, with one record of tree sparrow at the beginning of the breeding season within Kenton or Goose Hill Wood, suggesting that tree sparrow are unlikely to breed within the site and the wider area. Tree sparrow was recorded during the non-breeding season within the arable fields north of Kenton Hills.

r) Yellow wagtail

1.4.164 Yellow wagtail is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This is due to a decline of 63% of the UK breeding population in the last 25 years, a long-term decline of 70% in the UK breeding population since the first BoCC review, a decline of 25% in the UK breeding population in the last 25 years, and a long term decline of 32% in the breeding range since the first BoCC review (Ref. 1.2). Yellow wagtail is also listed as a priority species in Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified yellow wagtail as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

1.4.165 The Suffolk Birds reports described yellow wagtail as a rapidly declining Summer visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that 285 sightings were reported, with a peak count of 25 recorded at RSPB Minsmere Reserve. There were no breeding pairs recorded in north-east or south-east Suffolk. The 2018 Suffolk Bird Report (Ref. 1.15) stated that records and number of sites had declined slightly since 2017 (278 records and 67 sites). A peak count of 12 were reported at Aldeburgh and a sighting was reported at Hollesley Marshes.

RSPB

1.4.166 The RSPB reported three records of yellow wagtail within 5km of the existing Sizewell power station complex. All of these records were of either confirmed or probable breeding located at RSPB Minsmere Reserve, with the latest record of a single pair in 2010.

SBIS

1.4.167 SBIS (2014) reported ten records of yellow wagtail within 2km of the site, nine of which were in the last ten years. These records were located at RSPB Minsmere Reserve, Aldringham Common, Leiston, Thorpeness and “Sizewell”.

NGL

1.4.168 NGL have only recorded yellow wagtail in a single year on the EDF Energy estate in the last 14 years.

ii. Secondary data

- 1.4.169 The Wood Group 2007 breeding bird survey recorded yellow wagtail, but the location and number of birds was not reported (refer to **Report 14A7.3-2, Annex 14A7.3**).

iii. Primary data

- 1.4.170 No yellow wagtail was recorded during the Arcadis bird surveys.
- 1.4.171 In summary, yellow wagtail was recorded within the survey area sporadically, with only one recorded during the breeding season.

s) Tree pipit

- 1.4.172 Tree pipit is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a decline of 64% in the UK breeding population in the last 25 years, a longer-term decline of 70% in the UK population since the first BoCC review, and a reduction of 29% in the UK breeding range in the last 25 years. Tree pipit is also listed as a priority species in Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified tree pipit as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

- 1.4.173 The Suffolk Birds reports tree pipit as a declining Summer visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that there was an increase in records compared with 2016. There were no breeding pairs recorded in north-east Suffolk and one breeding pair found in south-east Suffolk at Landguard.

RSPB

- 1.4.174 The RSPB reported five records of tree pipit within 5km of the existing Sizewell power station complex. All of the records were of confirmed or probable breeding located at RSPB Minsmere Reserve, with a peak count of three pairs in 2004.

SBIS

- 1.4.175 SBIS (2014) reported eight records of tree pipit within 2km of the site, five of which were in the last ten years. These records were located at Westleton Walks, Thorpeness, RSPB Minsmere Reserve, Aldringham Common, and “Sizewell”.

NGL

1.4.176 NGL have only recorded tree pipit as present on the EDF Energy estate on a single occasion, with a single adult bird ringed in 2008.

ii. Secondary data

1.4.177 Tree pipit was recorded on one occasion during the Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**). The single bird was recorded in Kenton Hills in April and it was assumed to be a passage bird.

iii. Primary data

1.4.178 No tree pipit was recorded during the Arcadis bird surveys.

1.4.179 In summary, tree pipit has been recorded historically within the survey area during the passage period. Tree pipit are therefore not thought to be present as a breeding species within the site and the wider area.

t) Bullfinch

1.4.180 Bullfinch is regarded as being of medium conservation importance following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to a long-term decline of 39% in the UK population since the first BoCC review. Bullfinch is also listed as a priority species in Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified bullfinch as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

1.4.181 The Suffolk Birds reports described bullfinch as a common but declining resident. The 2017 Suffolk Bird Report (Ref. 1.14) stated that bullfinch were widely reported (379 records). Six sightings were recorded at RSPB Minsmere Reserve and seven at Thorpeness.

RSPB

1.4.182 The RSPB reported 22 records of bullfinch within 5km of the existing Sizewell power station complex. These records were located at both North Warren RSPB and RSPB Minsmere Reserves. All records were of either confirmed or probable breeding. A peak count of 25 pairs was recorded at RSPB Minsmere Reserve in 2004. A peak count of 40 pairs was recorded at RSPB North Warren Reserve in 2005.

SBIS

1.4.183 SBIS (2014) reported 13 records of bullfinch within 2km of the site. These records were located at Thorpeness, RSPB Minsmere Reserve, Theberton Woods, Eastbridge, Aldringham Common, Kenton Hills and “Sizewell”.

NGL

1.4.184 NGL have recorded bullfinch as a breeding species in ten of the past 14 years on the EDF Energy estate. Bullfinch have also been recorded infrequently during the Winter farmland bird surveys. A summary of NGL bullfinch records is shown in **Table 1.29**.

Table 1.29: NGL bullfinch records

Year	No. breeding territories April-June	Winter farmland bird survey (peak count) Jan-Mar and Sept-Dec
2018	2	2
2017	2	1
2016	2	3
2015	1	2
2014	1	4
2013	0	0
2012	1	1
2011	1	1
2010	2	0
2009	0	No survey
2008-2009	1	No survey
2007-2008	1	1
2006-2007	0	No survey
2005-2006	0	0
2004-2005	2	0

ii. Secondary data

1.4.185 During the Wood Group 2007 breeding bird survey (refer to **Report 14A7.3-2, Annex 14A7.3**), ten bullfinch breeding territories were recorded. During the 2010 breeding bird surveys (refer to **Report 14A7.3-5, Annex 14A7.3**), three breeding bullfinch territories were recorded to the south of the Round House, in Kenton Hills.

1.4.186 During the 2007-2008 Winter walkover surveys (refer to **Report 14A7.3-1, Annex 14A7.3**), bullfinch was recorded within the EDF Energy estate, although numbers and the location of these records was not reported.

iii. Primary data

1.4.187 During the breeding season, bullfinch was only recorded once during the 2015 arable marsh harrier surveys. A single bird was noted from VPB in April 2015. Given the presence of suitable habitat for breeding bullfinch within the site, it is likely that bullfinch is breeding within the survey area.

1.4.188 Bullfinch was recorded during two of the five survey visits during the 2014-2015 wintering bird surveys. These records were both located to the south of Ash Wood, with a peak count of three birds recorded during February 2015.

1.4.189 In summary, bullfinch have been recorded during the breeding and non-breeding season within the site and the wider area. A peak count of four breeding territories have been recorded within the arable fields to the north of Kenton Hills and within Kenton Hills and Goose Hill and a peak count of three bullfinch, located the arable fields to the north of Kenton Hills, were recorded during the non-breeding season.

u) Linnet

1.4.190 Linnet is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a long-term decline of 60% in the UK breeding population since the first BoCC review (Ref. 1.2). Linnet is also listed as a priority species in Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified linnet as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

1.4.191 The Suffolk Birds reports described linnet as a common Summer visitor and passage migrant, which also overwinters in small numbers. The 2017 Suffolk Bird Report (Ref. 1.14) stated that there was a significant increase in records. Significant flocks were recorded at RSPB Minsmere Reserve, Dingle Marshes and Boyton and Hollesley Marshes.

RSPB

1.4.192 The RSPB reported 23 records of linnet within 5km of the existing Sizewell power station complex. These records were located at both RSPB Minsmere and RSPB North Warren Reserves. All but two records related

to either confirmed or probable breeding. A peak count of 76 pairs was reported at RSPB North Warren Reserve in 2005, and a peak count of 44 pairs was reported at RSPB Minsmere Reserve in 2004.

SBIS

1.4.193 SBIS (2014) reported 17 records of linnet within 2km of the site. These records were located at Thorpeness, Aldringham Common, Thorpeness golf course, Leiston Common, Lower Abbey Farm marshes, RSPB Minsmere Reserve, Theberton, Eastbridge, and “Sizewell”.

1.4.194 NGL have reported linnet as breeding on the main EDF Energy estate in every year for the past 14 years. Linnet have also been regularly recorded during the farmland Winter bird surveys. **Table 1.30** summarises the linnet records from NGL.

Table 1.30: NGL linnet records

Year	No. breeding territories April- June	Farmland bird survey (peak count) Jan-Mar and Sept –Dec
2018	9	60
2017	14	24
2016	10	147
2015	15	81
2014	6	80
2013	9	21
2012	7	76
2011	11	250
2010	8	40
2009	8	No survey
2008-2009	5	No survey
2007-2008	6	6
2006-2007	9	No survey
2005-2006	6	40
2004-2005	13	40

ii. **Secondary data**

1.4.195 During the Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), six breeding territories were recorded. During the 2010 breeding bird survey (refer to **Report 14A7.3-5, Annex 14A7.3**), a total of eight linnet territories were recorded, with five located in coastal

scrub to the north of Sizewell B power station and the remaining three territories were located in the arable fields between Ash Wood and Goose Hill. During the 2012 arable reversion breeding bird surveys (refer to **Report 14A7.3-8, Annex 14A7.3**), a total of seven linnet territories were recorded. Four linnet territories were observed in arable fields north of Kenton Hills and three in the areas to the south associated with Leiston Common

1.4.196 Linnet was also recorded as being present during the 2007/2008 Winter walkover surveys (refer to **Report 14A7.3-1, Annex 14A7.3**), with a peak count of 73 birds recorded to the west of Walk Barn.

iii. Primary data

1.4.197 Linnet was recorded throughout the Arcadis 2015 breeding bird surveys, with a peak count of ten birds recorded during the second survey visit. All records of linnet were recorded either on or adjacent to Sizewell Beach and dunes adjacent to Sizewell B power station. One linnet territory was observed during the 2015 northern arable breeding bird surveys. Linnet was also frequently recorded during the 2015 arable marsh harrier surveys. Linnet was recorded on 26 occasions, with a peak count of 20 birds recorded from VPA in April 2015.

1.4.198 The continued presence of linnet during the breeding season and the availability of suitable breeding habitat would indicate that up to ten breeding territories could be present within the site.

1.4.199 During the 2014-2015 Winter bird survey, linnet was recorded using the site in every survey visit. Records were spread across the site, with the highest numbers of birds found on Sizewell Beach during the proposed main platform and Sizewell Beach transects, and in the arable fields around Upper Abbey Farm, with peak counts of 11 and 19 birds in each area respectively.

1.4.200 In summary, linnet has been recorded within the site and the wider area during the breeding and non-breeding seasons. A peak count of 13 breeding territories were recorded and a peak count of 80 linnet were recorded during the non-breeding season. Linnet was recorded within the arable fields north of Kenton Hills and on Sizewell Beach.

v) Lesser redpoll

1.4.201 Lesser redpoll is regarded as being of high conservation importance following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a decline of 64% in the UK breeding population in the last 25 years and a long-term decline of 83% in the UK breeding population since the first BoCC review in 1969 (Ref. 1.2). Lesser redpoll is also listed as a priority

species in Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified lesser redpoll as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

- 1.4.202 The Suffolk Birds reports described lesser redpoll as an uncommon and declining resident, a declining Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that significant counts were recorded at RSPB Minsmere Reserve, Thorpeness and Aldeburgh.

RSPB

- 1.4.203 The RSPB reported a single record of lesser redpoll within 5km of the existing Sizewell power station complex. This record was located at RSPB Minsmere Reserve in 2008, however, no other data for this record was available.

SBIS

- 1.4.204 SBIS (2014) reported eight records of lesser redpoll within 2km of the site. These records were located at Thorpeness, RSPB Minsmere Reserve, Middleton, Aldringham Common, and “Sizewell”.

NGL

- 1.4.205 NGL have only recorded the presence of lesser redpoll in one of the last 14 years of surveys, with a solitary record of a breeding pair present in Sizewell Marshes SSSI in 2004. Two adults were ringed in 2017 and 5 adults were ringed in 2018.

ii. Secondary data

- 1.4.206 Wood Group did not record the presence of lesser redpoll during their surveys.

iii. Primary data

- 1.4.207 Lesser redpoll was recorded on a single occasion during the Arcadis 2014-2015 wintering bird surveys, with a flock of 51 recorded in the reedbed within Sizewell Marshes SSSI during March 2015.

- 1.4.208 In summary, lesser redpoll have been recorded within the site and the wider area during the non-breeding season and passage period, with a peak count of 51 in Sizewell Marshes SSSI. In addition, a pair of lesser redpolls

were observed during the breeding season in Sizewell Marshes SSSI in 2004.

w) **Yellowhammer**

1.4.209 Yellowhammer is regarded as being of high conservation importance in the UK following its inclusion on the Red List of BoCC (Ref. 1.2). This inclusion is due to a decline of 49% in the UK breeding population in the last 25 years and a longer-term decline of 54% in the UK population since the first BoCC review (Ref. 1.2). Yellowhammer is also listed as a priority species in Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified yellowhammer as a priority species for conservation action in the county (Ref. 1.38).

i. **Desk-study**

Suffolk Birds

1.4.210 The Suffolk Birds reports described yellowhammer as a common but declining resident and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that most of the large gatherings were recorded in west Suffolk.

RSPB

1.4.211 The RSPB reported 21 records of yellowhammer within 5km of the existing Sizewell power station complex. All records were of confirmed or probable breeding and were located at both RSPB Minsmere and RSPB North Warren Reserves. Peak counts of 38 pairs were reported at RSPB Minsmere Reserve in 2004 and 2006. A peak count of 76 territories was reported at RSPB North Warren Reserve in 2003.

SBIS

1.4.212 SBIS (2014) reported eight records of yellowhammer within 2km of the site. These records were located in Eastbridge, RSPB Minsmere Reserve, Aldringham Common, Thorpeness Golf Course, and “Sizewell”.

NGL

1.4.213 NGL have regularly recorded yellowhammer during the breeding bird surveys and the Winter farmland bird surveys of the main site in the last 14 years. A summary of NGL yellowhammer records is shown in **Table 1.31**.

Table 1.31: NGL Yellowhammer records

Year	No. breeding territories April-June	Winter farmland bird survey (peak count) Jan-Mar and Sept-Dec
2018	2	4
2017	4	3
2016	4	10
2015	6	7
2014	5	36
2013	5	22
2012	2	3
2011	5	10
2010	3	3
2009	0	No survey
2008-2009	2	No survey
2007-2008	3	11
2006-2007	7	No survey
2005-2006	2	1
2004-2005	2	0

ii. Secondary data

1.4.214 The Wood Group 2007 breeding bird survey (refer to **Report 14A7.3-2, Annex 14A7.3**), reported 14 yellowhammer pairs. During the 2010 breeding bird surveys (refer to **Report 14A7.3-5, Annex 14A7.3**) six territories were recorded within the survey area, all of which were located in the arable fields in the vicinity of Upper Abbey Farm and to the north of Goose Hill. During the 2012 arable reversion breeding bird surveys (refer to **Report 14A7.3-8, Annex 14A7.3**), seven yellowhammer territories were recorded, with five to the north and two to the south.

1.4.215 Yellowhammer was also reported as present during the 2007-2008 Winter walkover surveys (refer to **Report 14A7.3-1, Annex 14A7.3**).

iii. Primary data

1.4.216 Yellowhammer was recorded during each of the three Arcadis 2014 breeding bird survey visits, with a peak count of four birds recorded during the second visit. All records of yellowhammer were located in the arable fields to the north of Kenton Hills. During the 2015 breeding bird survey, two yellowhammer territories were recorded. One territory was located in Black Walks with another located to the north east of Ash Wood.

Yellowhammer was also recorded during the 2015 arable marsh harrier survey on 17 occasions, with a peak count of four birds recorded on two occasions; from VPA in July 2015; and from VPC in May 2015.

1.4.217 The continued presence of yellowhammer during the breeding season and the availability of suitable breeding habitat would indicate that up to four yellowhammer breeding territories could be present within the survey area.

1.4.218 Yellowhammer was recorded as present on the site during a single survey visit of the 2014-2015 Winter bird surveys. This record was of five birds in a field adjacent to the Round House in March 2015.

1.4.219 In summary, yellowhammer have been recorded within Sizewell Marshes SSSI survey area during the breeding season, with a peak count of six breeding territories and the non-breeding season, with a peak count of seven yellowhammer. Yellowhammer was observed within that arable fields to the north of Kenton Hills and to the south, near Leiston Common.

x) Reed bunting

1.4.220 Reed bunting is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This inclusion is due to a long-term decline of 38% in the UK population since the first BoCC review (Ref. 1.2). Reed bunting is also listed as a priority species in Section 41 of the NERC Act (Ref. 1.3) and the Suffolk BAP identified reed bunting as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

1.4.221 The Suffolk Birds reports described reed bunting as a common but declining resident and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that peak counts in the county included Aldeburgh Marshes and Orfordness.

RSPB

1.4.222 The RSPB reported 22 records of reed bunting within 5km of the existing Sizewell power station complex. All records were of either confirmed or probable breeding and records were located at both RSPB Minsmere and RSPB North Warren Reserves. A peak count of 77 pairs was reported at RSPB Minsmere Reserve in 2010, and a peak count of 76 pairs was reported at RSPB North Warren Reserve in 2004.

SBIS

1.4.223 SBIS (2014) reported ten records of reed bunting within 2km of the site. These records were located at Lower Abbey Farm marshes, RSPB Minsmere Reserve, Aldringham Common, Thorpeness and “Sizewell”.

NGL

1.4.224 NGL recorded reed bunting as a breeding species in every year of the past 14 years. Reed bunting has also been irregularly recorded as part of the Winter farmland bird surveys. A summary of NGL reed bunting records are shown in **Table 1.32**.

Table 1.32: NGL Reed bunting records

Year	No. breeding territories April-June	Winter farmland bird survey (peak count) Jan-Mar and Sept-Dec
2018	11	17
2017	15	2
2016	12	24
2015	6	20
2014	6	45
2013	8	24
2012	1	1
2011	4	0
2010	8	0
2009	8	No survey
2008-2009	9	No survey
2007-2008	12	1
2006-2007	12	No survey
2005-2006	12	1
2004-2005	12	1

ii. Secondary data

1.4.225 During the Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-1, Annex 14A7.3**), four reed bunting territories were recorded. Three of these territories were located in the wet meadows of Sizewell Marshes SSSI and a single territory was located elsewhere within the survey area, although the exact location of this territory was not reported. During the 2010 breeding bird surveys (refer to **Report 14A7.3-5, Annex 14A7.3**), a single reed bunting territory was recorded in a ditch to the south

of Goose Hill. The 2012 arable reversion breeding bird survey (refer to **Report 14A7.3-8, Annex 14A7.3**) reported the presence of a single breeding reed bunting territory in the northern area.

1.4.226 Wood Group did not record the presence of reed bunting during the Winter walkover surveys (2007-2008) (refer to **Report 14A7.3-1, Annex 14A7.3**).

iii. Primary data

1.4.227 Reed bunting was recorded during the first survey visit of the Arcadis 2014 breeding bird survey, with two male reed buntings recorded singing in the reedbed to the south of Goose Hill. The presence of two singing male reed bunting during the breeding season and the presence of suitable breeding habitat would indicate that up to two breeding bird territories were present within the survey area. Reed bunting was not recorded as part of the 2014-2015 Winter bird surveys.

1.4.228 In summary, reed bunting was recorded within the site and the wider area during the breeding season, a peak count of 12 breeding territories were recorded in 2007/2008 by NGL. These were located within Sizewell Marshes SSSI. Reed bunting was also recorded during the non-breeding season, in lower numbers, with a peak count of a single reed bunting located within the arable fields to the north of Kenton Hills.

1.5 Amber list species

a) Stock dove

1.5.1 Stock dove is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2), this inclusion is due to the UK possessing 20-30% of the European non-breeding population (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.5.2 The Suffolk Birds reports described stock dove as a fairly common resident and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that peak counts were recorded in the October migration at RSPB Minsmere Reserve and Aldeburgh.

RSPB

1.5.3 The RSPB reported 27 records of stock dove within 5km of the existing Sizewell power station complex. All but three of these records were of either confirmed, or probable, breeding. The records were located at both

RSPB Minsmere and RSPB North Warren Reserves. Peak counts comprised 18 pairs at RSPB Minsmere Reserve in 2004, and 20 pairs at RSPB North Warren Reserve also in 2004.

SBIS

1.5.4 SBIS (2014) did not report any records of stock dove within 2km of the site.

NGL

1.5.5 NGL have recorded stock dove as a breeding species in each of the last 14 years on the EDF Energy estate. Stock dove have also frequently been recorded as being present during the Winter farmland bird surveys. A summary of NGL stock dove records is shown in **Table 1.33**.

Table 1.33: NGL stock dove records

Year	No. breeding territories April-June	Winter farmland bird survey (peak count) Jan-Mar and Sept-Dec
2018	9	Unknown
2017	12	17
2016	8	5
2015	7	2
2014	7	3
2013	11	6
2012	1	4
2011	4	3
2010	3	0
2009	6	Unknown
2008-2009	4	Unknown
2007-2008	3	5
2006-2007	4	Unknown
2005-2006	1	3
2004-2005	4	25

ii. Secondary data

1.5.6 During the Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**) three stock dove territories were recorded within the survey area. Wood Group did not record stock dove during the 2007/2008 Winter walkover survey (refer to **Report 14A7.3-1, Annex 14A7.3**).

- 1.5.7 During the Wood Group 2010 breeding bird survey (refer to **Report 14A7.3-5, Annex 14A7.3**), nine breeding stock dove territories were observed, scattered widely across the survey area. Two territories were located at Upper Abbey Farm and Leiston Old Abbey, a single territory was in Fiscal Policy woodland, one territory was at Stonewall Belt, two territories were in Ash Wood, one territory was in Goose Hill, and two territories were located within the wet woodland to the south of Goose Hill.
- 1.5.8 Stock dove was also recorded as part of the Wood Group 2012 arable reversion breeding bird survey (refer to **Report 14A7.3-8, Annex 14A7.3**), with a single breeding territory located in the south of the survey area in an area associated with Leiston Common, and six territories located in the arable fields north of Kenton Hills survey area.
- iii. Primary data
- 1.5.9 Stock dove was recorded throughout the Arcadis 2014 breeding bird survey, with a peak count of 26 birds recorded during the second survey visit. Stock doves was recorded across the survey area. The continued presence of stock dove during the breeding season, and the presence of suitable breeding habitat would indicate that up to 26 breeding stock dove territories were present within the survey area.
- 1.5.10 Stock dove was recorded during two of the five survey visits during the 2014-2015 Winter bird surveys. These records occurred during both the arable transect and the Sizewell Marshes SSSI reedbed transect. The peak count of stock dove across the site was six birds recorded during March 2015, with three birds recorded in the reedbed within Sizewell Marshes SSSI and another three on the arable field between Ash Wood and Kenton Hills.
- 1.5.11 Stock dove was recorded on two occasions during the 2015 northern arable breeding bird survey. One record was of two birds recorded to the east of Lower Abbey Farm in April 2015, with the other record comprising of a single bird recorded to the west of Lower Abbey Farm in May 2015.
- 1.5.12 Stock dove was recorded during the 2015 arable marsh harrier survey on 20 occasions, with a peak count of 11 birds recorded from VPA in April 2015.
- 1.5.13 In summary, stock dove was observed within the site and the wider area during the breeding season, with a peak count of seven breeding territories. Stock dove was also observed during the non-breeding season, with a peak count of 25 recorded at the northern end of the EDF Energy estate. Stock dove was observed throughout the site and the wider area.

b) Tawny owl

- 1.5.14 Tawny owl is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2) as this species has suffered a moderate decline of 31% in the breeding population in the last 25 years, and a longer term decline of 30% since the first BoCC review (Ref. 1.2).

i. Desk-study

Suffolk birds

- 1.5.15 The Suffolk Birds reports described tawny owl as a common resident. The 2017 Suffolk Bird Report (Ref. 1.14) stated that this species is under-recorded, there were 11 confirmed breeding locations recorded, however the locations were not disclosed in the report.

RSPB

- 1.5.16 The RSPB reported 20 records of tawny owl within 5km of the existing Sizewell power station complex. All of these records related to either confirmed, or probable, breeding. These records were located at both RSPB Minsmere and RSPB North Warren Reserves. Peak counts at RSPB Minsmere and RSPB North Warren Reserves were eight pairs in 2008, and ten pairs in 2006, respectively.

SBIS

- 1.5.17 SBIS (2014) reported 34 records of tawny owl within 2km of the site, with seven of these records within the past ten years. These records were located at Eastbridge, RSPB Minsmere Reserve, Reckham Pits Wood, Theberton and Middleton.

NGL

- 1.5.18 Tawny owl was recorded during breeding bird surveys on the EDF Energy estate in 2016, 2014, 2013, 2010, 2009 and 2006-2005. One tawny owl pair was recorded in 2016, 2014 and 2013, and two tawny owl pairs were recorded in all other years. It should be noted that specific owl surveys were not undertaken by NGL and, therefore, the number of tawny owls' present is likely to be an underestimate in some years.

ii. Secondary data

- 1.5.19 Wood Group reported two tawny owl territories within the survey area during the breeding bird surveys in 2007 (refer to **Report 14A7.3-2, Annex 14A7.3**). However, these sightings were incidental sightings during other

survey work, therefore, Wood Group concluded that two territories were likely to be an underestimate of the breeding tawny owl population within the survey area.

- 1.5.20 A single tawny owl territory was also recorded within the survey area during the 2010 breeding bird survey (refer to **Report 14A7.3-5, Annex 14A7.3**).

iii. Primary data

- 1.5.21 Tawny owl was not recorded during any surveys undertaken by Arcadis. It should be noted that no specific surveys for tawny owl were undertaken.

- 1.5.22 In summary, tawny owl was observed within the site and the wider area during the breeding season, with a peak count of two tawny owl territories. However, given the amount of suitable habitat, it is likely that this is an underestimate of the tawny owl population within the site and the wider area.

c) Short-eared owl

- 1.5.23 Short-eared owl is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2) due to a moderate breeding range decline of 28% over 25 years and a longer term moderate breeding range decline of 48% since the first BoCC review (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.5.24 The Suffolk Birds reports described short-eared owl as an uncommon Winter visitor and passage migrant and has formally bred in the county. The 2017 Suffolk Bird Report (Ref. 1.14) stated that peak counts were recorded at Walberswick and Shingle Street (over 10km from Sizewell).

RSPB

- 1.5.25 The RSPB reported a single record of short-eared owl within 5km of the existing Sizewell power station complex. This record was of a single bird located at RSPB North Warren Reserve in February 2003.

SBIS

- 1.5.26 SBIS (2014) reported 14 records of short-eared owl within 2km of the site, with nine of these records within the past ten years. These records were located at RSPB Minsmere Reserve, Thorpeness, Aldringham Common and Goose Hill.

NGL

1.5.27 NGL have only recorded short-eared owl infrequently during the last 14 years. A single bird was present in April 2011, and a single bird was recorded on the saltmarsh field in December 2005.

ii. Secondary data

1.5.28 The Wood Group 2011/2012 seabird survey recorded two records of short-eared owl, with a peak count of two birds seen on the beach from VP 10 (Orford Ness) in March 2012 (refer to **Report 14A7.3-3, Annex 14A7.3**).

iii. Primary data

1.5.29 Short-eared owl was not recorded during any Arcadis bird surveys and no specific surveys for short-eared owl were undertaken.

1.5.30 In summary, short-eared owl was observed sporadically within the site and the wider area, with only two records of single birds recorded in ten years. Short-eared owl was also observed along the coast on one occasion. It is, therefore, concluded that short-eared owl is a Winter visitor and are highly unlikely to breed on the site.

d) Swift

1.5.31 Swift is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2), this is due to a moderate breeding population decline of 38% over 25 years (Ref. 1.2). Suffolk BAP identified swift as a priority species for conservation action in the county (Ref. 1.38).

i. Desk-study

Suffolk Birds

1.5.32 The Suffolk Birds reports described swift as a very common Summer visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that sightings were reported at RSPB Minsmere Reserve, including some of the first and last sightings of the season.

RSPB

1.5.33 The RSPB reported 24 records of swift within 5km of the existing Sizewell power station complex. These records were located at Knodishall, Thorpeness, Leiston, Aldringham, Aldeburgh and Eastbridge. Five of these records were of probable breeding, with a peak count of six nests recorded at Leiston in 2010. The remaining 19 records were of screaming parties of

swifts, with records of between a single bird, up to a flock of 400 birds recorded in June 2013, though the location of this record was unavailable.

SBIS

- 1.5.34 SBIS (2014) reported seven records of swift within 2km of the site. These records were located at Thorpeness, RSPB Minsmere Reserve, Leiston and “Sizewell”.

NGL

- 1.5.35 NGL have not recorded swift as a breeding species on the EDF Energy estate.

ii. Secondary data

- 1.5.36 During the Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), it was noted that swift could possibly breed on the EDF Energy estate. However, the domestic properties and farm buildings (suitable for breeding, but outside of the survey area) were not surveyed, therefore, an accurate count of the number of territories could not be made.

- 1.5.37 During the Wood Group 2010 breeding bird surveys (refer to **Report 14A7.3-5, Annex 14A7.3**) no swift was recorded.

- 1.5.38 The Wood Group 2012 arable reversion surveys (refer to **Report 14A7.3-8, Annex 14A7.3**) reported the presence of swift in the area north of Kenton Hills and in habitat associated with Leiston Common to the south of the survey area, although the number of birds present were not provided.

iii. Primary data

- 1.5.39 Swift was recorded during the third survey visit of the Arcadus 2014 breeding bird survey, with a flock of 12 birds recorded foraging over the arable fields to the north of Kenton Hills.

- 1.5.40 Although swift was recorded during the breeding season, the lack of buildings suitable for nesting locations within the survey area, would indicate that the species is not present as a breeding species. It is likely, however, that the site would be used as a foraging resource for swift breeding elsewhere.

- 1.5.41 Swift was recorded as part of the 2015 arable harrier survey on 13 occasions, with a peak count of 36 birds recorded at VPF in June 2015. Swift was not recorded as part of the 2015 northern arable breeding bird survey.

1.5.42 In summary, swift was observed within the site and the wider area during the breeding season; however, there is a lack of buildings to provide suitable nesting habitat. Therefore, swift are likely to forage over the survey area, but do not breed within the site and the wider area.

e) Kestrel

1.5.43 Kestrel is regarded as being of medium conservation importance following its inclusion on the Amber List of BoCC, (Ref. 1.2) due to a moderate (33%) decline in breeding population over 25 years and a longer-term breeding decline of 46% since the first BoCC review (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.5.44 The Suffolk Birds reports described kestrel as a common resident and scarce passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that fledglings were reported at Hollesley Marshes.

RSPB

1.5.45 The RSPB reported 21 records of kestrel within 5km of the existing Sizewell power station complex. These records were located at both RSPB Minsmere and RSPB North Warren Reserves, and all but one record was of either confirmed, or probable, breeding. The peak counts were two pairs at RSPB Minsmere Reserve in 2004, and nine pairs at RSPB North Warren Reserve in 2004.

SBIS

1.5.46 SBIS (2014) reported 38 records of kestrel within 2km of the site. These records were located at RSPB Minsmere Reserve, Eastbridge, Thorpeness, Aldringham Walks and Common/Thorpeness Golf Course, Aldringham-cum-Thorpe, Leiston, Leiston Common, "Sizewell", Reckham Pits Wood and Sizewell Marshes SSSI.

NGL

1.5.47 NGL have recorded kestrel as a confirmed breeding species on the EDF Energy estate in 12 of the last 14 years. Kestrel have also been recorded during the Winter farmland bird surveys. A summary of NGL kestrel records is shown in **Table 1.34**.

Table 1.34: NGL kestrel records

Year	No. breeding territories April-June	Winter farmland bird survey (peak count) Jan-Mar and Sept-Dec
2018	2	1
2017	1	Unknown
2016	1	1
2015	2	Unknown
2014	1	1
2013	1	2
2012	1	2
2011	1	0
2010	1	1
2009	1	Unknown
2008-2009	1	Unknown
2007-2008	1	1
2006-2007	0	Unknown
2005-2006	0	0
2004-2005	2	1

ii. Secondary data

- 1.5.48 During the Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), a single breeding kestrel territory was recorded. The location of this territory was not reported.
- 1.5.49 The Wood Group 2010 breeding bird surveys (refer to **Report 14A7.3-5, Annex 14A7.3**) reported the presence of a single kestrel breeding territory located on the bund on the eastern boundary of the proposed main platform.
- 1.5.50 During the 2007/2008 Winter walkover surveys (refer to **Report 14A7.3-1, Annex 14A7.3**) kestrel was recorded regularly, although numbers and the location of these sightings was not recorded.
- 1.5.51 Kestrel was also recorded during the 2012 arable reversion breeding bird survey (refer to **Report 14A7.3-8, Annex 14A7.3**), with birds noted as present in the arable fields north of the survey area.

iii. Primary data

- 1.5.52 Kestrel was not recorded during the Arcadis 2014 breeding bird survey.

- 1.5.53 Kestrel was recorded during both the November 2014 and January 2015 survey visits during the 2014-2015 wintering bird surveys. Both of these records were of a solitary bird recorded flying over the arable fields between Ash Wood and Kenton Hills.
- 1.5.54 Kestrel was recorded on a single occasion during the 2015 northern arable breeding bird survey, with a single bird recorded immediately south of Lower Abbey Farm during May 2015.
- 1.5.55 Kestrel was also recorded during the 2015 arable harrier survey on 14 occasions. All records were of single birds located in the arable fields north of Kenton Hills.
- 1.5.56 In summary, kestrel was observed within the site and the wider area during the breeding season and the non-breeding season. A single breeding territory was recorded within the arable fields north of Kenton Hills.

f) House martin

- 1.5.57 House martin is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2) due to a moderate (33%) decline in breeding population over 25 years and a 49% longer-term breeding decline since the first BoCC review (Ref. 1.2).

i. Desk-study

Suffolk Birds

- 1.5.58 The Suffolk Birds reports described house martin as a as a very common Summer visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that most breeding records came from west Suffolk, however there were peak sightings at RSPB Minsmere Reserve, Orfordness, and Boyton and Hollesley Marshes.

RSPB

- 1.5.59 The RSPB did not report any records of house martin within 5km of the existing Sizewell power station complex.

SBIS

- 1.5.60 SBIS (2014) reported 11 records of house martin within 2km of the site. These records were located at Thorpeness, RSPB Minsmere Reserve, Eastbridge, Aldringham Common, “Sizewell” and the existing Sizewell power station complex.

NGL

1.5.61 NGL have not recorded house martin as present as a breeding species on the EDF Energy estate within the last 14 years.

ii. Secondary data

1.5.62 During the Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), it was noted that it was likely that house martin breeds on the EDF Energy estate. However, the domestic properties and farm buildings (suitable for breeding) were not surveyed, therefore, an accurate count of the number of territories could not be made.

1.5.63 The Wood Group 2010 breeding bird surveys (refer to **Report 14A7.3-5, Annex 14A7.3**) did not report the presence of any house martin territories.

1.5.64 House martin was recorded during the 2012 arable reversion breeding bird survey (refer to **Report 14A7.3-8, Annex 14A7.3**), with birds present in the northern area, the arable fields north of Kenton Hills, although breeding was not confirmed.

iii. Primary data

1.5.65 House martin was recorded during the Arcadis 2014 breeding bird survey during the third survey visit, with two birds recorded over the arable fields to the north of Kenton Hills. Although house martin was recorded during the breeding season, the lack of buildings suitable for nesting would indicate that the species is not present as a breeding species within the site. It is likely, however, that Upper Abbey Farm contains breeding pairs and the site would be used as a foraging resource for breeding house martin.

1.5.66 House martin was recorded during the 2015 arable harrier surveys on 12 occasions, with a peak count of six birds recorded on two occasions, at VPA in May 2015, and VPE in August 2015.

1.5.67 In summary, house martin was observed within the site and the wider area during the breeding season; domestic buildings may provide nesting habitat, but these are limited. It is more likely that house martin forage over the survey area, in particular within the arable fields to the north of Kenton Hills.

g) Willow warbler

1.5.68 Willow warbler (is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2). This is due to both a decline of 32% in the breeding population in the last 25 years,

and a longer-term breeding population decline of 38% in the UK population since the first BoCC review (Ref. 1.2).

i. Desk-study

Suffolk birds

1.5.69 The Suffolk Birds reports described willow warbler as a declining Summer visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that sightings were reported at Orfordness and Hollesley Marshes.

RSPB

1.5.70 The RSPB reported 23 records of willow warbler within 5km of the existing Sizewell power station complex. These records were all of either confirmed or probable breeding and were located at both RSPB Minsmere and RSPB North Warren Reserves. Peak counts were 47 singing males at RSPB Minsmere Reserve in 2008 and 66 pairs at RSPB North Warren Reserve in 2003.

SBIS

1.5.71 SBIS (2014) reported no records of willow warbler within 2km of the site.

NGL

1.5.72 NGL have recorded willow warbler as a breeding species in each of the last 14 years on the EDF Energy estate. A summary of NGL willow warbler records is shown in **Table 1.35**.

Table 1.35: NGL willow warbler records

Year	No. breeding territories (April-June)
2018	1
2017	5
2016	2
2015	3
2014	4
2013	7
2012	6
2011	5
2010	1
2009	5
2008	3

Year	No. breeding territories (April-June)
2007-2008	3
2006-2007	2
2005-2006	4
2004-2005	5

ii. Secondary data

- 1.5.73 During the Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**) 16 willow warbler territories were recorded, three of which were within the proposed main platform.
- 1.5.74 During the Wood Group 2010 breeding bird surveys (refer to **Report 14A7.3-5, Annex 14A7.3**), only a single willow warbler territory was recorded, located in the wet woodland to the south of Goose Hill.
- 1.5.75 The Wood Group 2012 arable reversion survey (refer to **Report 14A7.3-8, Annex 14A7.3**) recorded a single willow warbler breeding territory in the southern area. This was the only breeding willow warbler territory recorded.

iii. Primary data

- 1.5.76 Willow warbler was recorded during both the second and third survey visits of the Arcadis 2014 breeding bird surveys, with a peak count of three birds recorded during the second survey visit. Willow warbler was recorded across the survey area. The presence of willow warbler during the 2014 breeding season and the availability of suitable breeding habitat would indicate that up to three breeding territories were present within the site.
- 1.5.77 Willow warbler was not recorded during the 2015 northern arable breeding bird survey.
- 1.5.78 In summary, willow warbler was recorded during the breeding season. A peak count of 16 breeding territories were recorded within wet woodland to the south of Goose Hill and Leiston Common.

h) Meadow pipit

- 1.5.79 Meadow pipit is regarded as being of medium conservation importance in the UK following its inclusion on the Amber List of BoCC (Ref. 1.2), this is due to a long-term decline of 44% in the UK breeding population (Ref. 1.2).

i. Desk-study

Suffolk Birds

1.5.80 The Suffolk Birds reports described meadow pipit as a common resident, Winter visitor and passage migrant. The 2017 Suffolk Bird Report (Ref. 1.14) stated that significant counts of passage birds were reported from coastal sites including: RSPB Minsmere Reserve, Snape, Southwold, Hollesley Marshes and Shingle Street. Additionally, the report described meadow pipit as a common bird on Orfordness with an estimated breeding population of between 34 and 38 pairs.

RSPB

1.5.81 The RSPB reported 21 records of meadow pipit within 5km of the existing Sizewell power station complex. All records were of either confirmed, or probable, breeding. The records were located at both RSPB Minsmere and RSPB North Warren Reserves. The peak counts comprised 31 pairs at RSPB Minsmere Reserve in 2005, and 28 pairs at RSPB North Warren Reserve, also in 2005.

SBIS

1.5.82 SBIS (2014) reported nine meadow pipit records within 2km of the site. These records were located at Thorpeness, RSPB Minsmere Reserve, Aldringham Common, Thorpeness Golf Course, and Reckham Pits Wood within the EDF Energy estate.

NGL

1.5.83 NGL have regularly recorded meadow pipit as being present as a breeding species within the EDF Energy estate. Meadow pipit have also been recorded as being present during the Winter farmland bird surveys. A summary of NGL meadow pipit records is found in **Table 1.36**.

Table 1.36: NGL meadow pipit records

Year	No. breeding territories April-June	Winter farmland bird survey (peak count) Jan-Mar and Sept-Dec
2018	0	18
2017	3	4
2016	1	15
2015	0	11
2014	0	20
2013	1	8

Year	No. breeding territories April-June	Winter farmland bird survey (peak count) Jan-Mar and Sept-Dec
2012	0	16
2011	0	50
2010	1	15
2009	1	Unknown
2008-2009	1	Unknown
2007-2008	0	51
2006-2007	1	Unknown
2005-2006	3	83
2004-2005	2	130

ii. Secondary data

1.5.84 During the Wood Group 2007 breeding bird surveys (refer to **Report 14A7.3-2, Annex 14A7.3**), a single breeding meadow pipit territory recorded; however, the location of this territory was not reported. During the Wood Group 2010 breeding bird surveys (refer to **Report 14A7.3-5, Annex 14A7.3**) no breeding meadow pipit territories were recorded.

1.5.85 During the 2007/2008 Winter walkover surveys (refer to **Report 14A7.3-1, Annex 14A7.3**), meadow pipit was observed, although the numbers and locations of these records were not provided.

1.5.86 Meadow pipit was not recorded during the 2012 northern arable reversion breeding bird survey (refer to **Report 14A7.3-8, Annex 14A7.3**).

iii. Primary data

1.5.87 Meadow pipit was recorded during the second and third survey visit of the Arcadis 2014 breeding bird survey. A single bird seen to the north of Upper Abbey Farm during the second survey visit, and another bird recorded on Sizewell Beach during the third visit. The presence of meadow pipit during the breeding season, and the availability of suitable breeding habitat, would indicate that only a single breeding territory was present within the site.

1.5.88 Meadow pipit was recorded in every survey visit during the 2014-2015 Winter bird surveys. These records occurred during the proposed main platform and Sizewell Beach transect and the Upper Abbey Farm arable transect. The peak count occurred during January 2015, with 17 birds recorded on the site.

1.5.89 Meadow pipit was not recorded during the 2015 northern arable breeding bird survey.

1.5.90 Meadow pipit was also recorded during the 2018-2019 marsh harrier surveys within the Minsmere South Levels.

1.5.91 In summary, meadow pipit was recorded during the breeding and non-breeding season in the site and the wider area. A peak count of three breeding territories and 130 individuals were recorded during non-breeding season. Meadow pipit was recorded in proposed main platform, Upper Abby Farm and Sizewell Beach.

1.6 Green list species

1.6.1 In addition to the Red and Amber Listed species of BoCC (Ref. 1.2), and Section 41 species described in **section 2** and **3**, Green Listed BoCC (Ref. 1.2) species have also been recorded during the Wood Group and Arcadis surveys. Species accounts have not been included for these species as they are of least conservation concern; however, an indication of the surveys in which Green Listed BoCC species have been observed are provided in **Table 1.37** and **Table 1.38**.

Table 1.37: Green list species of BoCC (Ref. 1.2) observed during Wood Group surveys (where recorded)

Species	Breeding bird survey	Winter walkover survey	Breeding bird survey 2012	Northern arable reversion breeding bird survey 2012
Red-legged partridge (<i>Alectoris rufa</i>)	✓		✓	✓
Pheasant (<i>Phasianus colchicus</i>)	✓		✓	✓
Sparrowhawk (<i>Accipiter nisus</i>)	✓	✓		✓
Buzzard (<i>Buteo buteo</i>)	✓	✓		✓
Feral pigeon (<i>Columba livia</i>)				✓
(<i>Columba palumbus</i>)	✓	✓	✓	✓
Collared dove (<i>Streptopelia decaocto</i>)	✓		✓	✓
Little owl (<i>Athene noctua</i>)	✓			
Green woodpecker (<i>Picus viridis</i>)	✓	✓	✓	✓
Great spotted woodpecker (<i>Dendrocopos major</i>)	✓	✓	✓	✓
Magpie (<i>Pica pica</i>)	✓		✓	✓
Jay (<i>Cyanocitta cristata</i>)	✓		✓	✓
Jackdaw (<i>Corvus monedula</i>)	✓	✓	✓	✓
Rook (<i>Corvus frugilegus</i>)	✓	✓		✓
Carrion crow (<i>Corvus corone</i>)	✓		✓	✓
Goldcrest (<i>Regulus regulus</i>)	✓	✓	✓	✓

NOT PROTECTIVELY MARKED

Species	Breeding bird survey	Winter walkover survey	Breeding bird survey 2012	Northern arable reversion breeding bird survey 2012
Blue tit (<i>Cyanistes caeruleus</i>)	✓	✓	✓	✓
Great tit (<i>Parus major</i>)	✓	✓	✓	✓
Coal tit (<i>Parus ater</i>)	✓	✓	✓	✓
Long-tailed tit (<i>Aegithalos caudatus</i>)	✓	✓	✓	✓
Swallow (<i>Hirundo rustica</i>)	✓		✓	✓
Chiffchaff (<i>Phylloscopus collybita</i>)	✓	✓	✓	✓
Blackcap (<i>Sylvia atricapilla</i>)	✓		✓	✓
Garden warbler (<i>Sylvia borin</i>)	✓		✓	✓
Whitethroat (<i>Sylvia communis</i>)	✓		✓	✓
Lesser whitethroat (<i>Sylvia curruca</i>)	✓		✓	✓
Sedge warbler (<i>Acrocephalus schoenobaenus</i>)	✓		✓	✓
Reed warbler (<i>Acrocephalus scirpaceus</i>)	✓		✓	✓
Treecreeper (<i>Certhia familiaris</i>)	✓	✓	✓	✓
Wren (<i>Troglodytes troglodytes</i>)	✓	✓	✓	✓
Blackbird (<i>Turdus merula</i>)	✓	✓	✓	✓
Robin (<i>Erithacus rubecula</i>)	✓	✓	✓	✓
Stonechat (<i>Saxicola rubicola</i>)	✓	✓		

Species	Breeding bird survey	Winter walkover survey	Breeding bird survey 2012	Northern arable reversion breeding bird survey 2012
Wheatear (<i>Oenanthe oenanthe</i>)	✓			
Pied wagtail (<i>Motacilla alba</i>)	✓	✓	✓	✓
Chaffinch (<i>Fringilla coelebs</i>)	✓	✓	✓	✓
Greenfinch (<i>Carduelis chloris</i>)	✓	✓	✓	✓
Goldfinch (<i>Spinus tristis</i>)	✓	✓	✓	✓
Siskin (<i>Carduelis spinus</i>)		✓		✓

Table 1.38: Green list species of BoCC (Ref. 1.2) observed during Arcadis surveys (where recorded)

Species	Red-throated diver survey 1 st Winter 2012-13	Little tern survey 2013	Red-throated diver survey 2 nd Winter 2013-14	Breeding bird survey 2014	Wintering bird survey 2014-15	Arable harrier survey 2015	Northern Breeding Bird Survey 2015	Arable Bird Survey
Red-legged partridge				✓	✓	✓	✓	
Pheasant				✓	✓	✓	✓	
Sparrowhawk				✓	✓	✓	✓	
Buzzard				✓	✓	✓	✓	
Feral pigeon				✓	✓	✓		
Woodpigeon				✓	✓	✓	✓	
Collared dove						✓		
Little owl						✓		
Green woodpecker				✓	✓	✓	✓	

NOT PROTECTIVELY MARKED

Species	Red-throated diver survey 1 st Winter 2012-13	Little tern survey 2013	Red-throated diver survey 2 nd Winter 2013-14	Breeding bird survey 2014	Wintering bird survey 2014-15	Arable harrier survey 2015	Northern Breeding Bird Survey 2015	Arable Survey
Great spotted woodpecker				✓	✓	✓		
Magpie				✓	✓	✓	✓	
Jay				✓	✓	✓	✓	
Jackdaw				✓	✓	✓	✓	
Rook				✓	✓	✓		
Carrion crow				✓	✓	✓	✓	
Goldcrest				✓	✓	✓	✓	
Blue tit				✓	✓	✓	✓	
Great tit				✓	✓	✓	✓	
Coal tit				✓	✓	✓	✓	
Long-tailed tit				✓	✓	✓	✓	
Sand martin		✓				✓		
Swallow				✓		✓	✓	
Chiffchaff				✓	✓	✓	✓	
Blackcap				✓		✓	✓	
Garden warbler				✓				
Lesser whitethroat				✓			✓	
Whitethroat				✓		✓	✓	

NOT PROTECTIVELY MARKED

NOT PROTECTIVELY MARKED

Species	Red-throated diver survey 1 st Winter 2012-13	Little tern survey 2013	Red-throated diver survey 2 nd Winter 2013-14	Breeding bird survey 2014	Wintering bird survey 2014-15	Arable harrier survey 2015	Northern Breeding Bird Survey 2015	Arable Survey
Reed warbler				✓			✓	
Treecreeper				✓	✓	✓		
Wren				✓	✓	✓	✓	
Blackbird				✓	✓	✓	✓	
Robin				✓	✓	✓	✓	
Stonechat	✓				✓	✓		
Pied wagtail				✓	✓	✓	✓	
Rock pipit								
Chaffinch				✓	✓	✓	✓	
Greenfinch				✓	✓	✓		
Goldfinch				✓	✓	✓	✓	
Siskin				✓	✓			

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