

MONA OFFSHORE WIND PROJECT

Environmental Statement

Volume 7, Annex 4.1: Onshore ornithology – wintering and migratory birds technical report

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Image of an offshore wind farm

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Glossary

Term	Meaning
Breeding season	This is the season during which species are engaged with mating and raising offspring. Although it is species dependant it is generally assumed to run from April to July (inclusive).
British Trust for Ornithology	A non-statutory ornithological research organisation.
Expert Working Group (EWG)	Expert working groups set up with relevant stakeholders as part of the Evidence Plan process.
Migratory	This describes birds that winter and breed in different geographic locations. The migratory (or passage) period describes the time during which they are in transit between these different wintering and breeding areas.
Non-breeding season	This is the season during which birds are not engaged with mating and raising offspring. This season is split into both wintering and migratory phases for many species.
Potential Special Protection Areas	A site identified as potentially qualifying for Special Protection Area classification and for which a decision to classify has yet to be taken pending consultation.
Ramsar sites	Wetlands of international importance that have been designated under the criteria of the Ramsar Convention. In combination with Special Protection Areas and Special Areas of Conservation, these sites contribute to the national site network.
Sedentary	This describes birds that are not migratory and instead stay in the same territory or area all year. Many species are both sedentary and migratory
Special Protection Areas	A site designation specified in the Conservation of Habitats and Species Regulations 2017, classified for rare and vulnerable birds, and for regularly occurring migratory species. Special Protection Areas contribute to the national site network.
Wintering	This describes the period when birds settle in one area to see the winter through. Many British breeding species winter further south in southern Europe or Africa whilst many Scandinavian and Arctic birds' winter in Britain.

Acronyms

Acronym	Description
BTO	British Trust for Ornithology
EWG	Expert Working Group
LNR	Local Nature Reserves
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
NNR	National Nature Reserves
pSPA	Potential Special Protection Area
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

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Units

Unit	Description
km	Kilometre
m	Metre
%	Percentage
km ²	Square kilometre

1 Onshore ornithology - wintering and migratory birds technical report

1.1 Introduction

- 1.1.1.1 The Mona Onshore Development Area for the Mona Offshore Wind Project is located between Llandulas on the North Wales coast, and St Asaph to the south of Rhyl, straddling two local authorities, Conwy and Denbighshire (Figure 1.1).
- 1.1.1.2 The Mona Onshore Development Area runs 15 km inland from Mean Low Water Springs (MLWS) at the landfall to Bodelwyddan. However, the area between MLWS and Mean High Water Springs (MHWS) is covered by Annex 4.2: Intertidal ornithology – wintering and migratory birds technical report.
- 1.1.1.3 The terrestrial habitats landward of MHWS within the Mona Onshore Development Area consist mainly of improved pasture used for grazing and arable farming, with patches of woodland and stretches of hedgerow (Figure 1.3). There are no major watercourses and very limited wetland habitat.
- 1.1.1.4 Bird seasons can be split into breeding and non-breeding. The breeding season is species dependant but is normally accepted as running between April and July (inclusive). The non-breeding season can be split again into a wintering period, the period when birds ‘overwinter’ in an area, and migratory (or passage) period, the period during which birds are travelling between their breeding and non-breeding grounds.
- 1.1.1.5 The purpose of this technical report is to present baseline data on the wintering and migratory bird assemblage recorded along the Mona Onshore Development Area. It describes the methods used to characterise the baseline bird assemblage and presents the results of the desk-based studies and site-specific surveys undertaken at the Mona Onshore Development Area during the 2022/23 wintering and migratory season. This baseline information has been used to inform the assessment reported in Volume 3, Chapter 4: Onshore and intertidal ornithology of the Environmental Statement.

1.2 Onshore ornithology search and study areas

1.2.1 Overview

- 1.2.1.1 In this report there are two specific terms used to identify areas used for data collection. These are the onshore ornithology search area and the onshore ornithology study area.

1.2.2 The onshore ornithology search area

- 1.2.2.1 The onshore ornithology search area has been used as a tool to identify designated sites with wintering and migratory features that are likely to utilise the broad habitat types that are present within the Mona Onshore Development Area. The onshore ornithology search area reflects standard industry good practice for identification of ornithological sites that could be affected by the Mona Offshore Wind Project. It covers:
 1. Internationally designated ornithological sites, specifically Special Protection Areas (SPAs), potential Special Protection Areas (pSPAs) and Ramsar sites located within 20 km of the Mona Onshore Development Area

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2. Nationally designated sites, specifically Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs) located within 5 km of the Mona Onshore Development Area
3. Locally designated sites, such as Local Nature Reserves (LNRs) and Local Wildlife Sites (LWSs) located within 2 km of the Mona Onshore Development Area.

1.2.2.2 The location and geographic extent of designated sites within the onshore ornithology search area is presented in Figure 1.1 of this technical report below.

1.2.3 The onshore ornithology study area

1.2.3.1 The onshore ornithology study area comprises the Mona Onshore Development Area landward of MHWS plus a 250 m buffer. The 250 m buffer is included to take account of bird interests that may occur adjacent or close to the Mona Onshore Development Area. This distance is based on potential maximum disturbance distances for wintering and migratory birds expected to be found in the area (Goodship and Furness, 2022).

1.2.3.2 The location and geographic extent of the onshore ornithology study area is presented in Figure 1.2 of this technical report below.

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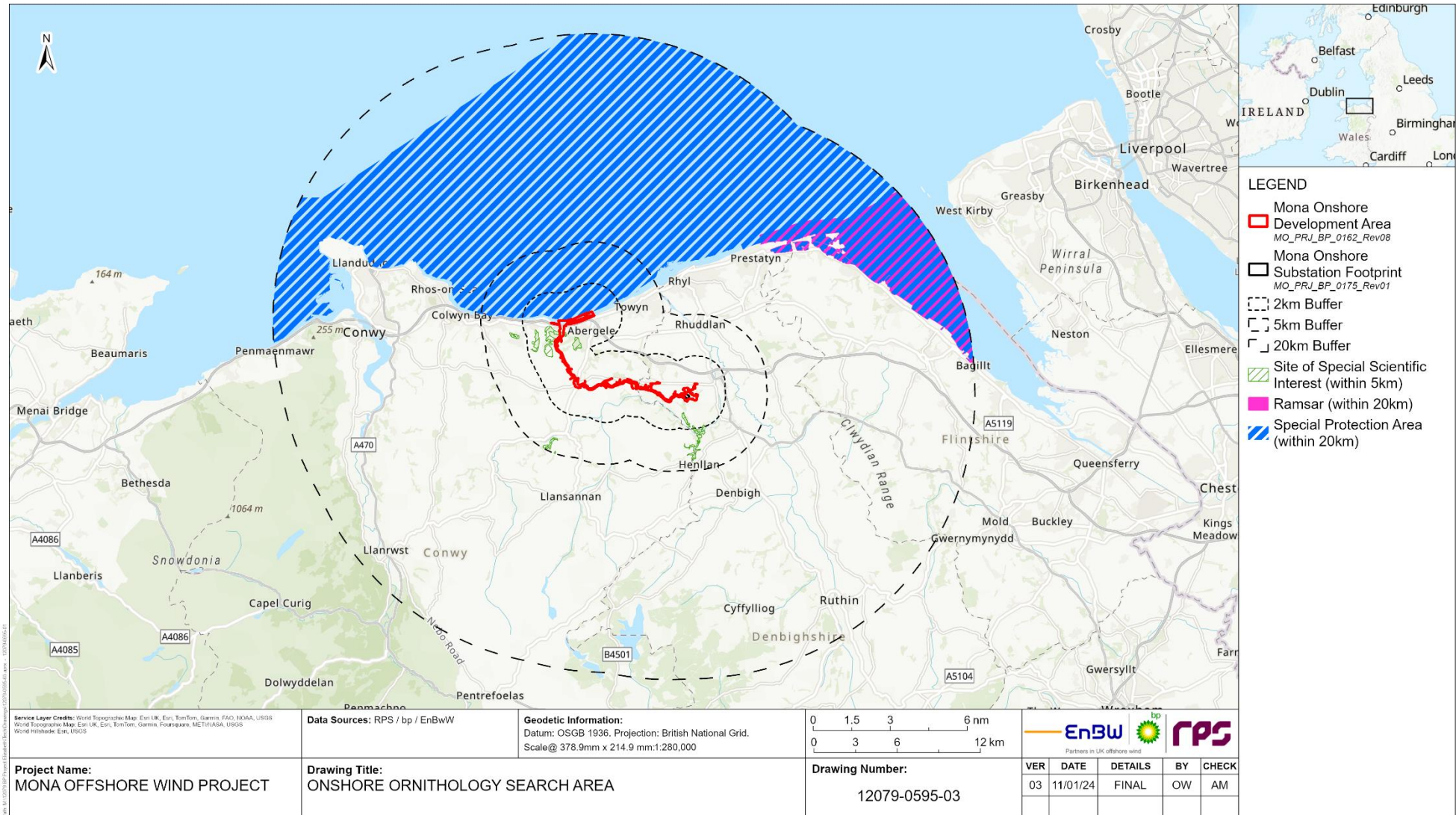


Figure 1.1: The onshore ornithology search area.

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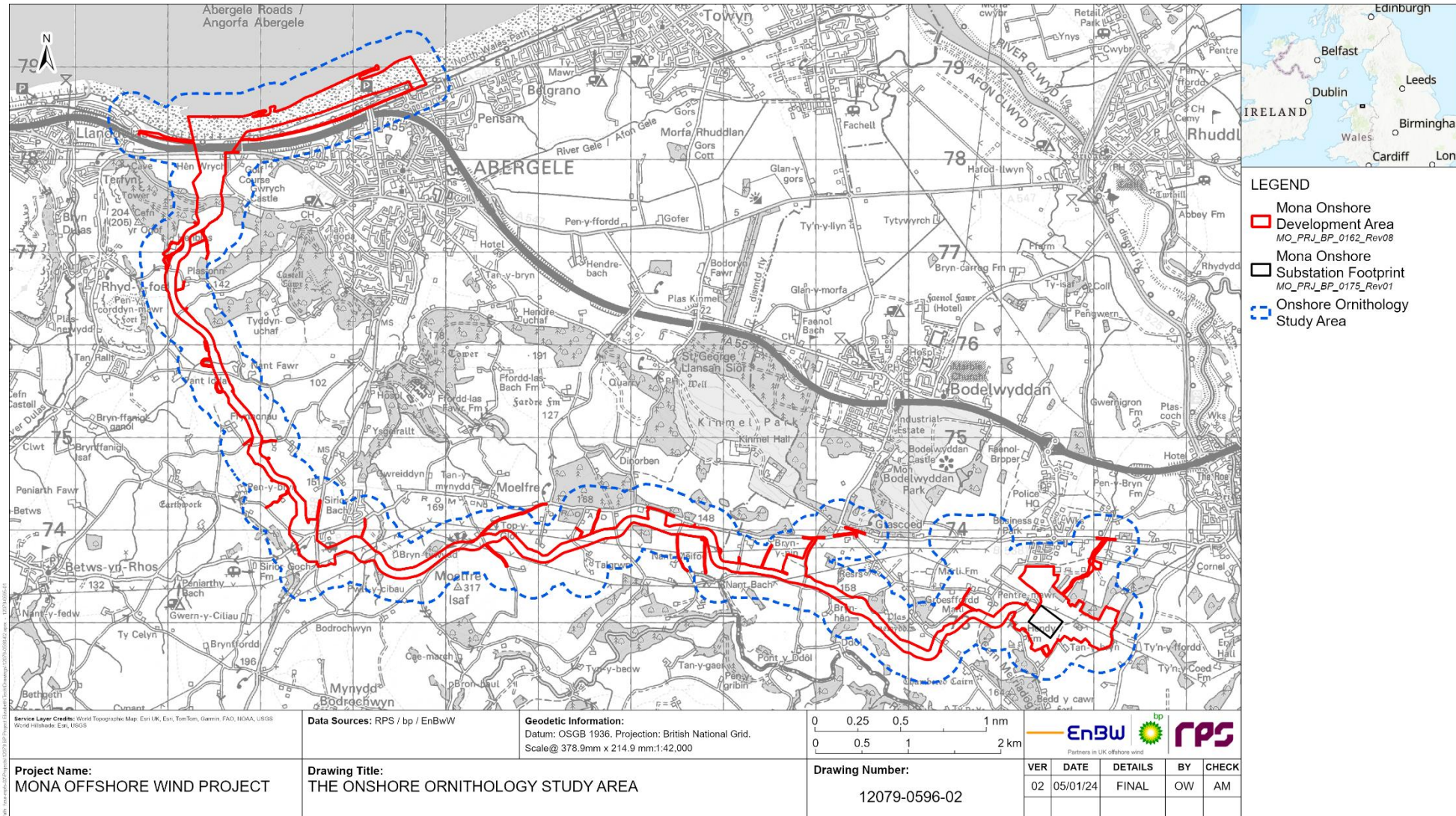


Figure 1.2: The onshore ornithology study area.

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1.3 Consultation

1.3.1.1 A summary of the key issues raised during consultation activities undertaken to date specific to the onshore wintering and migratory birds technical report is presented in Table 1.1 below.

Table 1.1: Summary of key consultation topics raised during consultation activities undertaken for the Mona Offshore Wind Project relevant to onshore wintering and migratory birds.

Date	Consultee and type of response	Topics covered/consultee response
16 June 2022	EWG (01) - NRW, Denbighshire County Council, Conwy County Borough Council, The Royal Society for the Protection of Birds (RSPB).	<ul style="list-style-type: none"> Agreement on the Remit and Inputs to the EWG (as set out in the Evidence Plan Template) Agreement on Ways of Working Documents, including timescales. No response specific to onshore wintering and migratory birds was made by the EWG
08 December 2022	EWG (02) - NRW, Conwy County Borough Council, RSPB.	<ul style="list-style-type: none"> A detailed note of the bird survey methodologies was shared with the EWG for consultation. NRW requested that methodology considers Welsh Birds of Conservation Concern. No further response specific to onshore wintering and migratory birds was made.
24 April 2023	EWG (03) - NRW, Denbighshire County Council, Conwy County Borough Council, Welsh Government, RSPB, Amphibian and Reptile Conservation Trust (ARC).	<ul style="list-style-type: none"> A summary of information presented within the Preliminary Environmental Information Report (PEIR) assessment was presented to the EWG. No response specific to onshore wintering and migratory birds was made by the EWG.
19 July 2023	EWG (04) - NRW, Denbighshire County Council, Conwy County Borough Council, Welsh Government, RSPB, ARC.	<ul style="list-style-type: none"> Summary findings of the second year (2023) of wintering and migratory bird surveys was presented to the EWG. RPS requested that only one year's worth of wintering and migratory data be used for the assessment. RSPB requested to see maps of the findings before giving a response.
18 September 2023	EWG - NRW, Denbighshire County Council, Conwy County Borough Council, Welsh Government, RSPB, ARC.	<ul style="list-style-type: none"> Technical Note sent to EWG to provide evidence that one year of survey data for wintering and migratory birds was sufficient for the purposes of the assessment of Onshore and Intertidal Ornithology for the Mona Offshore Wind Project.
04 October 2023	EWG (05) – NRW, Denbighshire County Council, Conwy County Borough Council, Welsh Government, ARC, RSPB, Woodland Trust.	<ul style="list-style-type: none"> A summary of field surveys up to this date was provided including area, methodology, frequency and timings of wintering passerine and raptor surveys. A summary of outstanding surveys was also presented. RPS asked if the EWG were satisfied with one year of survey data for wintering passerines and raptors. NRW to provide an official response to the technical note provided on 18th September 2023.

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Date	Consultee and type of response	Topics covered/consultee response
		<ul style="list-style-type: none"> No further response specific to onshore wintering and migratory birds was made.
08 December 2023	EWG (06) – NRW, Denbighshire County Council, Conwy County Borough Council, Welsh Government, ARC, RSPB, Woodland Trust.	<ul style="list-style-type: none"> A summary of field surveys up to this date was provided including frequency and timings of surveys. RPS asked if the EWG were satisfied with one year of survey data for wintering passerines and raptors. No response was given.

1.4 Methodology

1.4.1 Approach to establishing the baseline

- 1.4.1.1 To establish a baseline of potential wintering and migratory birds within the onshore ornithology search and study areas, a combination of reviewing existing data sources, with site-specific surveys has been undertaken.
- 1.4.1.2 The methodology of the desktop study is presented in section 1.4.2 whilst the methodology followed during the site-specific surveys is described in section 1.6.2 of this technical report.

1.4.2 Desktop study methodology

Desktop data sources

- 1.4.2.1 Information on onshore wintering and migratory birds within the onshore ornithology study area was collected through a detailed desktop review of existing studies and datasets. These are summarised within Table 1.2.
- 1.4.2.2 Local records were provided by the North Wales Environmental Records Service (Cofnod, 2023) with a 2 km buffer as per Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal, which suggest a minimum search area of 1 km (CIEEM, 2017).

Table 1.2: Summary of key desktop sources.

Title	Source	Year	Author
Bird records for the Mona Onshore Development Area plus 2 km buffer	North Wales LERC (Cofnod)	2023	N/A
Bird Atlas 2007-11	British Trust for Ornithology (BTO)	2013	Balmer D., Gillings S., Caffrey B., Swann B., Downie I., Fuller R.
Birds in Wales. Welsh bird report 2018	The Welsh Ornithological Society	Published 2019	Welsh Ornithological Society. Edited by Hughes, J.

Designated sites

- 1.4.2.3 Internationally, nationally and locally designated sites were identified, up to 20 km, 5 km and 2 km respectively, in distance from the nearest point of any element of the Mona Onshore Development Area. Citations for each site were reviewed to identify those with designated wintering and migratory bird features.

Conservation status

- 1.4.2.4 For the onshore wintering and migratory species considered likely to be present, following a review of the above sources (Table 1.2), consideration was also given to their conservation status, specifically whether the species is listed on Annex 1 under the Birds Directive (2009) or on Schedule 1 under the Wildlife and Countryside Act (1981), as amended.
- 1.4.2.5 Consideration was given to species listed as priority species by Welsh Ministers under Section 7 of the Environment (Wales) Act 2016 which replaces Section 41 of the Natural Environment and Rural Communities Act 2006 within Wales. Consideration was given to species listed as either red or amber listed species on the Birds of Conservation Concern 5 (Stanbury *et al.*, 2021), hereafter called BOCC5 UK. Lastly, consideration was also given to species listed as either a red or amber species on the Birds of Conservation Concern Wales 4 (Johnstone *et al.*, 2022), hereafter called BOCC4.

1.5 Desktop data source baseline characterisation

1.5.1 Internationally designated sites

Special Protection Areas (SPAs)

- 1.5.1.1 There are two SPAs within 20 km of the Mona Onshore Development Area. They are the Dee Estuary SPA and the Liverpool Bay/Bae Lerpwl SPA.
- 1.5.1.2 The Dee Estuary SPA is designated for a total of 14 ornithological features as well as its bird assemblage during the non-breeding season. Of these 12 features are cited for their presence during the wintering and migratory periods.
- 1.5.1.3 The Liverpool Bay/Bae Lerpwl SPA is designated for a total of five seabird features as well as its non-breeding bird assemblage. Three of the named features are designated during the non-breeding season.
- 1.5.1.4 A summary of the interest features of the Dee Estuary SPA and Liverpool Bay/Bae Lerpwl SPA are listed in Table 1.3 of this technical report below.
- 1.5.1.5 The location and geographic extent of Dee Estuary SPA and Liverpool Bay/Bae Lerpwl SPA can be seen in Figure 1.1.

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Table 1.3: Wintering and migratory features of the SPAs within, or partly within, the onshore ornithology search area.

Site name	Distance (km)	Interest feature	Designated season	BOCC5 UK	BOCC4 Wales	Annex 1	Schedule 1	Section 7	SPA population
The Dee Estuary SPA	10.9	Bar-tailed godwit <i>Limosa lapponica</i>	Wintering	Amber	Red	Yes		Yes	1,150
		Sandwich tern <i>Sterna sandvicensis</i>	Passage	Amber	Amber	Yes			957
		Common redshank <i>Tringa totanus</i>	Passage	Amber	Red				8,795
		Common shelduck <i>Tadorna tadorna</i>	Wintering	Amber	Red				7,725
		Eurasian teal <i>Anas crecca</i>	Wintering	Amber	Amber				5,251
		Northern pintail <i>Anas acuta</i>	Wintering	Amber	Amber				5,407
		Eurasian oystercatcher <i>Haematopus ostralegus</i>	Wintering	Amber	Amber				22,677
		Grey plover <i>Pluvialis squatorola</i>	Wintering	Amber	Red				1,643
		Red knot <i>Calidris canuta</i>	Wintering	Amber	Amber				12,394
		Dunlin <i>Calidris alpina</i>	Wintering	Red	Red				27,769
		Black-tailed godwit <i>Limosa limosa</i>	Wintering	Red	Amber		Yes		1,747

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Site name	Distance (km)	Interest feature	Designated season	BOCC5 UK	BOCC4 Wales	Annex 1	Schedule 1	Section 7	SPA population
		Eurasian curlew <i>Numenius arquata</i>	Wintering	Red	Red			Yes	3,899
		Common redshank	Wintering	Amber	Red				5,293
		Non-breeding bird assemblage, including great crested grebe <i>Podiceps cristatus</i> , cormorant <i>Phalacrocorax carbo</i> , shelduck, wigeon <i>Anas penelope</i> , Eurasian teal, pintail, Eurasian oystercatcher, grey plover, lapwing <i>Vanellus vanellus</i> , knot, sanderling <i>Calidris alba</i> , dunlin, black-tailed godwit, bar-tailed godwit, Eurasian curlew and redshank.							120,726
Liverpool Bay/Bae Lerpwl SPA	0	Red-throated diver <i>Gavia stellata</i>	Non-breeding	Green	Amber	Yes	Yes		1,171
		Little gull <i>Hydrocoleus minutus</i>	Non-breeding	Green	Amber		Yes		319
		Common scoter <i>Melanitta nigra</i>	Non-breeding	Red	Amber		Yes	Yes	56,679
		Non-breeding bird assemblage, including red-throated diver, little gull, common scoter, red-breasted merganser <i>Mergus serrator</i> and cormorant.							69,687

Ramsar sites

- 1.5.1.6 The Dee Estuary Ramsar site is the only Ramsar site present within 20 km of the Mona Onshore Development Area. The location and geographic extent of the Dee Estuary Ramsar site can be seen in Figure 1.1 and the features of the site are listed in Table 1.4.

1.5.2 Nationally designated sites

Sites of Special Scientific Interest (SSSIs)

- 1.5.2.1 There are six SSSIs with 5 km of the Mona Onshore Development Area, as shown in Figure 1.1. However, none of these SSSIs have designated wintering or migratory ornithological features. Therefore these designated sites have not been considered further in this technical report.

National Nature Reserves (NNRs)

- 1.5.2.2 There are no NNRs with listed wintering or migratory ornithological features within 5 km of the Mona Onshore Development Area. Therefore, NNRs have not been considered further in this technical report.

1.5.3 Locally designated sites

- 1.5.3.1 There are no LNRs or LWSs with listed ornithological features within 2 km of the Mona Onshore Development Area. Therefore, these designated sites have not been considered further in this technical report.

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Table 1.4: Wintering and migratory features of the Ramsar sites within, or partly within the onshore ornithology search area.

Site name	Distance (km)	Interest feature	Designated season	BOCC5 UK	BOCC4 Wales	Annex 1	Schedule 1	Section 7	SPA population
The Dee Estuary Ramsar Site	10.9	Common redshank	Passage	Amber	Red				8,795
		Eurasian teal	Wintering	Amber	Amber				5,251
		Common shelduck	Wintering	Amber	Red				7,725
		Eurasian oystercatcher	Wintering	Amber	Amber				22,677
		Eurasian curlew	Wintering	Red	Red			Yes	3,899
		Northern pintail	Wintering	Amber	Amber				5,407
		Grey plover	Wintering	Amber	Red				1,643
		Red knot	Wintering	Amber	Amber				12,394
		Dunlin	Wintering	Red	Red				27,769
		Black-tailed godwit	Wintering	Red	Amber		Yes		1,747
		Bar-tailed godwit	Wintering	Amber	Red	Yes		Yes	1,150
		Common redshank	Wintering	Amber	Red				5,293
		Non-breeding season assemblage (no individual species named in the Ramsar information sheet).							120,726 (5-year peak mean 1994/95-1998/99)

1.5.4 Broad habitat type

1.5.4.1 As taken from Copernicus satellite imagery, the CORINE (Coordination of Information on the Environment) Land Cover data from 2018 shows that pasture is the most common habitat within onshore ornithology study area (Table 1.5). The rest of the area consists of arable land, deciduous, coniferous and mixed woodland, urban areas and urban green spaces, all of which are suitable habitats for different assemblages of breeding birds.

Table 1.5: The percentage of broad habitat types present within the onshore ornithology study area.

Broad habitat type	Percentage of the onshore ornithology study area covered by each habitat type (%)
Urban	2.3
Industrial	2.3
Urban green space	3.5
Arable	5.7
Pasture	70.6
Deciduous woodland	0.4
Coniferous woodland	0.4
Mixed woodland	2.8
Beaches, dunes, sands	1.7
Intertidal flats	5.5
Nearshore waters	4.9

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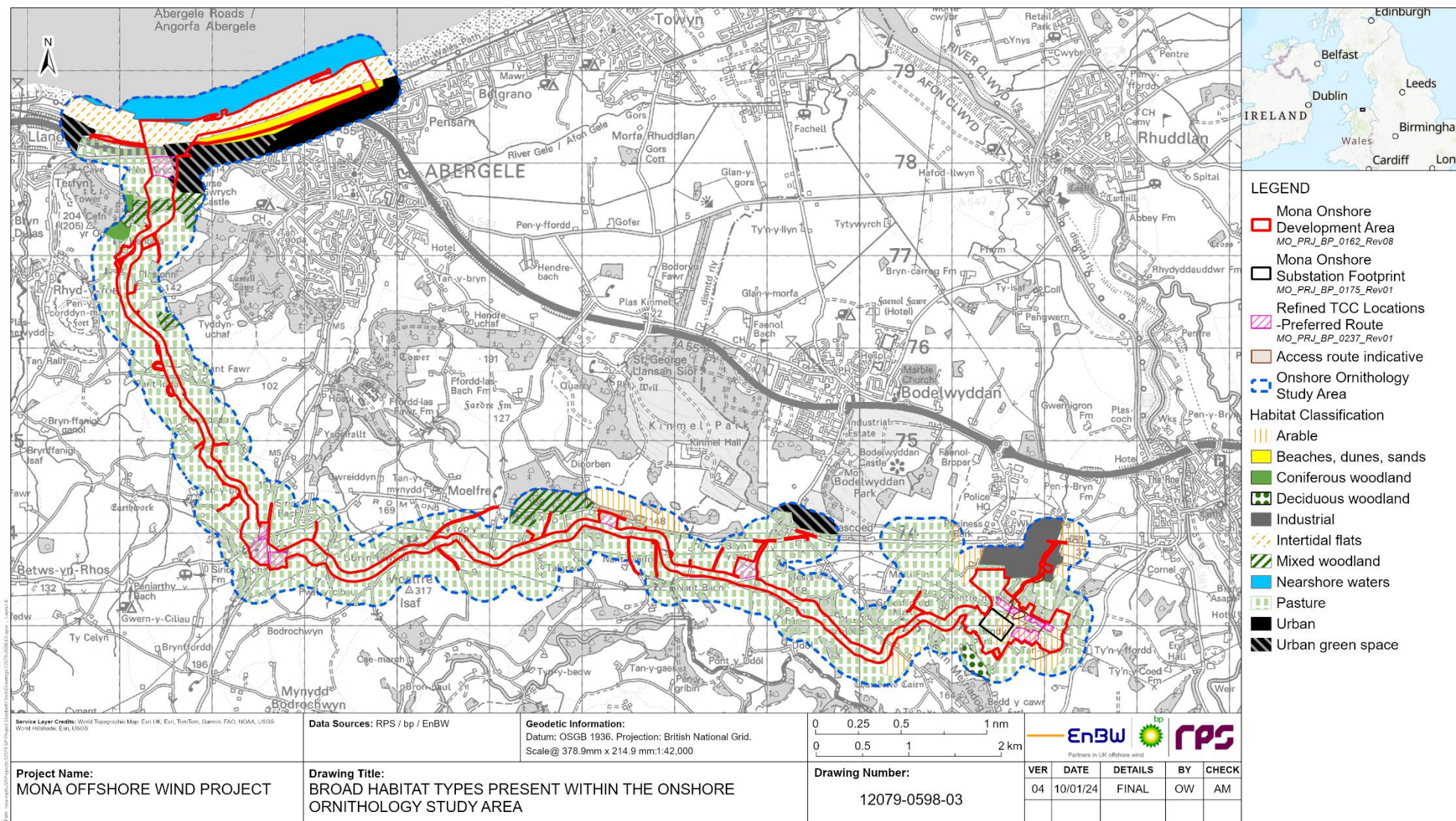


Figure 1.3: Broad habitat types present within the onshore ornithology study area.

1.5.5 Review of bird assemblage associated with broad habitat types

- 1.5.5.1 The assemblage of species described in Table 1.6 is based on local records provided by Cofnod (2023) (records available within 2 km from the Mona Onshore Development Area), and on the review of Bird Atlas 2007-11 (Balmer *et al.*, 2013) (records available within 10 km from the Mona Onshore Development Area) and Birds in Wales 2018 (Welsh Ornithological Society, 2019) (records for the wider area). For each habitat present within the onshore ornithology study area the expected bird assemblage is presented.
- 1.5.5.2 Table 1.6 focusses on species listed Annex I of the Birds Directive, Schedule 1 of the Wildlife and Countryside Act, Section 7 species of the Environment (Wales) Act 2016, a qualifying interest of a nearby SPA as identified in section 1.5.1, red or amber listed BOCC5 UK (Stanbury *et al.*, 2021) or BOCC4 Wales species (Johnstone *et al.*, 2022).

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Table 1.6: Summary of the habitats and likely associated onshore wintering and migratory birds within the onshore ornithology search area.

Broad habitat type	Common name	Latin name	Location of records	Data source
Grassland/pasture	Merlin	<i>Falco columbarius</i>	Within onshore ornithology search area	Cofnod (2023)
	Peregrine	<i>Falco peregrinus</i>	Within onshore ornithology study area	Cofnod (2023)
	Golden plover	<i>Pluvialis apricaria</i>	Within onshore ornithology search area	Cofnod (2023)
	Northern lapwing	<i>Vanellus vanellus</i>	Within onshore ornithology study area	Cofnod (2023)
	Eurasian oystercatcher	<i>Haematopus ostralegus</i>	Within onshore ornithology study area	Cofnod (2023)
	Eurasian curlew	<i>Numenius arquata</i>	Within onshore ornithology study area	Cofnod (2023)
	Common snipe	<i>Gallinago gallinago</i>	Within onshore ornithology study area	Cofnod (2023)
	Jack snipe	<i>Lymnocyptes minimus</i>	Within onshore ornithology search area	Cofnod (2023)
	Mediterranean gull	<i>Larus melanocephalus</i>	Within onshore ornithology study area	Cofnod (2023)
	Common gull	<i>Larus canus</i>	Within onshore ornithology study area	Cofnod (2023)
	Herring gull	<i>Larus argentatus</i>	Within onshore ornithology study area	Cofnod (2023)
	Iceland gull	<i>Larus glaucooides</i>	Within onshore ornithology study area	Cofnod (2023)
	Lesser black-backed gull	<i>Larus fuscus</i>	Within onshore ornithology study area	Cofnod (2023)

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Broad habitat type	Common name	Latin name	Location of records	Data source
	Great black-backed gull	<i>Larus marinus</i>	Within onshore ornithology study area	Cofnod (2023)
	Barn owl	<i>Tyto alba</i>	Within onshore ornithology search area	Cofnod (2023)
	Short-eared owl	<i>Asio flammeus</i>	Within county	The Welsh Ornithological Society (2019)
Arable	Whooper swan	<i>Cygnus cygnus</i>	Visitor to Dee Estuary SPA	The Welsh Ornithological Society (2019)
	Greylag goose	<i>Anser anser</i>	Within onshore ornithology search area	Cofnod (2023)
	Pink-footed goose	<i>Anser brachyrhynchus</i>	Visitor to Dee Estuary SPA	The Welsh Ornithological Society (2019)
	White-fronted goose	<i>Anser albinfrons</i>	Within onshore ornithology search area	Cofnod (2023)
	Brent goose	<i>Branta bernicla</i>	Within onshore ornithology search area	Cofnod (2023)
	Common shelduck	<i>Tadorna tadorna</i>	Within onshore ornithology study area	Cofnod (2023)
	Hen harrier	<i>Circus cyaneus</i>	Within onshore ornithology search area	Cofnod (2023)
	Eurasian skylark	<i>Alauda arvensis</i>	Within onshore ornithology study area	Cofnod (2023)
	Meadow pipit	<i>Anthus pratensis</i>	Within onshore ornithology study area	Cofnod (2023)
	Mistle thrush	<i>Turdus viscivorus</i>	Within onshore ornithology search area	Cofnod (2023)
	Reed bunting	<i>Emberiza schoeniclus</i>	Within onshore ornithology search area	Cofnod (2023)

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Broad habitat type	Common name	Latin name	Location of records	Data source
Hedgerow	Redwing	<i>Turdus iliacus</i>	Within onshore ornithology search area	Cofnod (2023)
	Fieldfare	<i>Turdus pilaris</i>	Within onshore ornithology study area	Cofnod (2023)
	Eurasian wren	<i>Troglodytes troglodytes</i>	Within onshore ornithology search area	Cofnod (2023)
	Dunnock	<i>Prunella modularis</i>	Within onshore ornithology search area	Cofnod (2023)
	Tree sparrow	<i>Passer montanus</i>	Within onshore ornithology search area	Cofnod (2023)
	Yellowhammer	<i>Emberiza citrinella</i>	Within onshore ornithology search area	Cofnod (2023)
Mixed and coniferous woodland	Northern goshawk	<i>Accipiter gentilis</i>	Within onshore ornithology search area	Cofnod (2023)
	Common woodpigeon	<i>Columba palumbus</i>	Within onshore ornithology study area	Cofnod (2023)
	Willow tit	<i>Poecile montanus</i>	Within onshore ornithology search area	Cofnod (2023)
	Eurasian bullfinch	<i>Pyrrhula pyrrhula</i>	Within onshore ornithology study area	Cofnod (2023)
	Common crossbill	<i>Loxia curvirostra</i>	Within onshore ornithology search area	Cofnod (2023)
Deciduous woodland	Red kite	<i>Milvus milvus</i>	Within onshore ornithology search area	Cofnod (2023)
	Eurasian sparrowhawk	<i>Accipiter nisus</i>	Within onshore ornithology search area	Cofnod (2023)
	Kestrel	<i>Falco tinnunculus</i>	Within onshore ornithology search area	Cofnod (2023)

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Broad habitat type	Common name	Latin name	Location of records	Data source
	Eurasian woodcock	<i>Scolopax rusticola</i>	Within onshore ornithology search area	Cofnod (2023)
	Tawny owl	<i>Strix aluco</i>	Within onshore ornithology search area	Cofnod (2023)
	Lesser spotted woodpecker	<i>Dendrocopos minor</i>	Within onshore ornithology search area	Cofnod (2023)
	Woodlark	<i>Lullula arborea</i>	Within onshore ornithology search area	Bird Atlas (Balmer <i>et al.</i> , 2013)
	Song thrush	<i>Turdus philomelos</i>	Within onshore ornithology study area	Cofnod (2023)
	Rook	<i>Corvus frugilegus</i>	Within onshore ornithology study area	Cofnod (2023)
	Hawfinch	<i>Coccothraustes coccothraustes</i>	Within onshore ornithology search area	Cofnod (2023)
Open woodland/parkland	Stock dove	<i>Columba oenas</i>	Within onshore ornithology study area	Cofnod (2023)
	Marsh tit	<i>Poecile palustris</i>	Within onshore ornithology study area	Cofnod (2023)
	Common starling	<i>Sturnus vulgaris</i>	Within onshore ornithology study area	Cofnod (2023)
	European greenfinch	<i>Chloris chloris</i>	Within onshore ornithology study area	Cofnod (2023)
Scrub	Firecrest	<i>Regulus ignicapilla</i>	Within onshore ornithology search area	Bird Atlas (Balmer <i>et al.</i> , 2013)
	Linnet	<i>Linaria cannabina</i>	Within onshore ornithology study area	Cofnod (2023)
	Lesser redpoll	<i>Acanthis cabaret</i>	Within onshore ornithology study area	Cofnod (2023)

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Broad habitat type	Common name	Latin name	Location of records	Data source
Coastal dunes and upper beach	Snow bunting	<i>Plectrophenax nivalis</i>	Within onshore ornithology study area	Cofnod (2023)
	Twite	<i>Linaria flavirostris</i>	Within onshore ornithology study area	Cofnod (2023)
Freshwater	Gadwall	<i>Anas strepera</i>	Within onshore ornithology study area	Cofnod (2023)
	Mallard	<i>Anas platyrhynchos</i>	Within onshore ornithology study area	Cofnod (2023)
	Shoveler	<i>Anas clypeata</i>	Within onshore ornithology study area	Cofnod (2023)
	Eurasian teal	<i>Anas crecca</i>	Within onshore ornithology study area	Cofnod (2023)
	Eurasian wigeon	<i>Mareca penelope</i>	Within onshore ornithology study area	Cofnod (2023)
	Great cormorant	<i>Phalacrocorax carbo</i>	Within onshore ornithology study area	Cofnod (2023)
	Little egret	<i>Egretta garzetta</i>	Within onshore ornithology search area	Cofnod (2023)
	Common moorhen	<i>Gallinula chloropus</i>	Within onshore ornithology study area	Cofnod (2023)
	Black-headed gull	<i>Chloicocephalus ridibundus</i>	Within onshore ornithology study area	Cofnod (2023)
	Common kingfisher	<i>Alcedo atthis</i>	Within onshore ornithology search area	Cofnod (2023)
	Grey wagtail	<i>Motacilla cinerea</i>	Within onshore ornithology search area	Cofnod (2023)
	White-throated dipper	<i>Cinclus cinclus</i>	Within onshore ornithology search area	Cofnod (2023)

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Broad habitat type	Common name	Latin name	Location of records	Data source
Buildings	Barn owl	<i>Tyto alba</i>	Within onshore ornithology search area	Cofnod (2023)
	House sparrow	<i>Passer domesticus</i>	Within onshore ornithology search area	Cofnod (2023)
Crags and cliffs	Black redstart	<i>Phoenicurus ochruros</i>	Within onshore ornithology search area	Cofnod (2023)
	Red-billed chough	<i>Pyrrhocorax pyrrhocorax</i>	Present in county	The Welsh Ornithological Society (2019)

1.6 Site-specific surveys

1.6.1 Overview

- 1.6.1.1 A summary of the onshore wintering and migratory bird surveys undertaken to inform this technical report and Volume 3, Chapter 4: Onshore and intertidal ornithology of the Environmental Statement is outlined in Table 1.7 below.

Table 1.7: Summary of the wintering and migratory bird surveys undertaken within the onshore ornithology study area.

Title	Extent of survey	Overview of survey	Survey contractor	Date
Wintering and migratory bird survey year 1, visit 1	Onshore ornithology study area	Identification of onshore wintering and migratory ornithological features within the onshore ornithology study area.	AMC Ecological Enfys Ecology Ltd	November 2022 to December 2022
Wintering and migratory bird survey year 1, visit 2	Onshore ornithology study area	Identification of onshore wintering and migratory ornithological features within the onshore ornithology study area.	AMC Ecological Enfys Ecology Ltd	February 2023 to March 2023

1.6.2 Methodology

- 1.6.2.1 The field surveys comprised of two walkover surveys undertaken between November 2022 and March 2023. The purpose of these field surveys was to identify any wintering and migratory birds that may be present in the onshore ornithology study area. The first survey visit was timed to cover the early to mid-winter period, with the second visit timed to cover the mid- to late winter period.
- 1.6.2.2 Two survey visits were completed, with the first visit conducted between November 2022 and December 2022 and the second survey completed between February and March 2023. Both survey visits were undertaken during daylight hours. The walkover surveys were only conducted in weather conditions suitable for making observations, not during periods of heavy precipitation, strong winds (Beaufort Wind Force of 5) or very poor visibility (less than 100 m).
- 1.6.2.3 The survey methodology followed the so called “look-see” method, as taken from Bibby *et al.* (2000) to help identify which bird species are using the onshore ornithology study area during the migratory and wintering season.
- 1.6.2.4 Where privately owned land access was agreed, the walkover survey routed as close as possible to all habitat types within the onshore ornithology study area. All inaccessible privately owned land parcels within the onshore ornithology study area were scanned using optics, where possible, and access was gained via all Public Rights of Way. All species seen or heard along the route using standard BTO abbreviations were recorded and mapped. Where possible, all behaviours, sex and age were also noted.
- 1.6.2.5 During the programme of wintering and migratory bird surveys, the Mona Onshore Development Area was reduced in size. As a result all data gathered from the wintering and migratory bird surveys were clipped to the Mona Onshore Development Area boundary plus the 250 m buffer zone.

1.6.3 Limitations

- 1.6.3.1 As a detailed desktop-study was undertaken, one season (migratory and wintering) of site-specific surveys was considered sufficient to characterise bird usage in the onshore ornithology study area. The habitats in this area are not of importance to wintering and migratory waterbirds or raptors and are not functionally linked to any of the nearby SPAs. The habitats available on site are suited to sedentary or migratory passerines and many of these species are wide ranging in their distribution during the non-breeding season.
- 1.6.3.2 Although coverage of the route was good some of the privately owned access parcels could not be accessed during the site-specific surveys. However, as the majority of the route is dominated by grassland interspersed with hedges surveyors could at least scan the fields that could not be accessed with optics. Therefore, although in places smaller secretive birds such as dunnock may have been missed, any significant groups of birds would have been located and this is not seen as a major limitation.

1.6.4 Results

- 1.6.4.1 A total of 64 species were recorded within the onshore ornithology study area (Table 1.8). Passerines dominated the bird assemblage with a total of 46 species recorded. Other species groups, such as waders, gulls and terns were also represented but featured in lower number of species.
- 1.6.4.2 Of the 64 species, 53 were recorded during survey visit one between November 2022 and December 2022 and 57 during survey visit two between February and March 2023. The species that were only observed in survey visit one were common crossbill, common gull, Eurasian curlew, fieldfare, great black-backed gull, grey heron *Ardea cinerea* and tree sparrow. The species that were only observed in survey visit two were common chiffchaff *Phylloscopus collybita*, Eurasian coot *Fulica atra*, feral pigeon *Columba livia domestica*, grey wagtail, common house martin *Delichon urbicum*, little egret, barn swallow *Hirundo rustica*, Eurasian teal, northern wheatear *Oenanthe oenanthe*, willow warbler *Phylloscopus trochilus* and yellowhammer.
- 1.6.4.3 All other species listed in Table 1.8 were observed a minimum of once during both survey visits.

SPA listed species

- 1.6.4.4 Three species that are qualifying features of the identified SPAs within the onshore ornithology search area were recorded (Table 1.8). These were Eurasian teal, Eurasian oystercatcher and Eurasian curlew. A total of 11 Eurasian curlew were noted during survey visit one. Eurasian oystercatcher (five individuals) and Eurasian teal (nine individuals) were noted during survey visit two. All observations of the three SPA listed species were recorded within the coastal area of the Mona Onshore Development Area.

Annex 1 and Section 7 listed species

- 1.6.4.5 Little egret, which is listed as an Annex 1 species of the Birds Directive was recorded during the second visit (Table 1.8) of the wintering and migratory bird surveys.
- 1.6.4.6 A total of 12 Section 7 listed species were recorded across all surveys. This included one wader species, two gull species and nine passerine species (Table 1.8).

BOCC5 UK red and amber listed species

- 1.6.4.7 A total of 13 BOCC5 UK red listed species were recorded across all surveys. The most abundant BOCC5 UK red listed species were common starling, herring gull and house sparrow (Table 1.8).
- 1.6.4.8 A total of 21 BOCC5 UK amber listed species were recorded across all surveys. The most abundant BOCC5 UK amber listed species were redwing, with a peak count of 277 (Table 1.8).

BOCC4 Wales red and amber listed species

- 1.6.4.9 A total of 13 BOCC4 Wales red listed species were recorded across all surveys. The most abundant species were common starling, herring gull, and meadow pipit (Table 1.8).
- 1.6.4.10 A total of 19 BOCC 4 Wales amber listed species were recorded across all surveys (Table 1.8).

Summary of species abundance and distribution by species group

Swans, geese and ducks

- 1.6.4.11 Mallard and Eurasian teal were recorded during the site-specific surveys. Mallard were the most abundant species with 23 individuals recorded whilst there were nine Eurasian teal recorded.
- 1.6.4.12 Mallard observations were in the north and far east of the onshore ornithology study area with the largest count occurring at a pond in Pentre Mawr Park, Abergele (Figure 1.4). All nine Eurasian teal were seen at once in a flock located on a pond in Pentre Mawr Park, Abergele (Figure 1.5).

Partridges and pheasants

- 1.6.4.13 Common pheasants were the only species from this group observed within the onshore ornithology study area during the site-specific surveys. As an introduced species they do not appear on any Annex 1, Schedule 1, Section 7 or BOCC UK or BOCC Wales list and therefore observations were not mapped.

Herons and storks

- 1.6.4.14 Grey heron and little egret were recorded, with one individual of each species noted.
- 1.6.4.15 The grey heron was located to the northwest of the Mona Onshore Development Area, within the 250 m survey buffer to the south of the A547 (Figure 1.6). The little egret was observed within the 250 m survey buffer to the southeast of the onshore ornithology study area (Figure 1.7).

Raptors

- 1.6.4.16 Common buzzard *Buteo buteo* and Eurasian sparrowhawk were recorded during the site-specific surveys. There were 22 sightings of common buzzard and seven sightings of Eurasian sparrowhawk.
- 1.6.4.17 Observations of Eurasian sparrowhawk were made in five separate locations within the central and east parts of the onshore ornithology study area (Figure 1.8). Common buzzard are not an Annex 1, Schedule 1, Section 7, BOCC UK or BOCC Wales red and amber listed species and therefore observations were not mapped.

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Rails, crakes and coots

- 1.6.4.18 Small numbers of common moorhen and Eurasian coot were recorded during the site-specific surveys, with seven individuals of each species recorded as the peak.
- 1.6.4.19 All records of Eurasian coot came from one observation that was made at a pond in Pentre Mawr Park, Abergele in the north of the onshore ornithology study area (Figure 1.9). Observations of common moorhen were made at three separate locations, most sightings were made at a pond in Pentre Mawr Park, Abergele (Figure 1.10).

Waders

- 1.6.4.20 Eurasian curlew, Eurasian oystercatcher, common snipe and Eurasian woodcock were recorded during the site-specific surveys.
- 1.6.4.21 Eurasian curlew were the most abundant species, with a peak count of 11. All records of Eurasian curlew were made in a grassland area in the north part of the onshore ornithology study area near the coast (Figure 1.11), this represents a high tide roost, albeit for small numbers of birds.
- 1.6.4.22 The second most abundant wader species was common snipe, with a peak count of eight during survey visit one. Common snipe were the most widely distributed species, with observations across the inland areas of the onshore ornithology study area (Figure 1.12). Eurasian oystercatcher were recorded in the same high tide roost as Eurasian curlew (Figure 1.13), although in lower numbers with a peak count of three.
- 1.6.4.23 The site-specific surveys produced two sightings of Eurasian woodcock during the first visit and one during the second visit (Figure 1.14).

Gulls and terns

- 1.6.4.24 Four species of gulls were recorded across all site surveys, black-headed gull, common gull, great black-backed gull and herring gull. The most abundant species were herring gull and common gull (Table 1.8). Numbers of herring gull varied little between the visits, with 130 individuals recorded during visit one and 147 individuals recorded during visit two. A peak of 77 common gull were recorded during survey visit one.
- 1.6.4.25 Herring gull were the most widely distributed gull species, with observations made across the onshore ornithology study area and within a variety of habitats, including grasslands and urban areas (Figure 1.18).

Woodpeckers

- 1.6.4.26 Great spotted woodpecker *Dendrocopos major* was the only species of woodpecker recorded within the onshore ornithology study area with eight observations made in each survey visit.
- 1.6.4.27 Great spotted woodpecker are not an Annex 1, Schedule 1, Section 7, BOCC UK or BOCC Wales red and amber-listed species and therefore observations were not mapped.

Passerines

- 1.6.4.28 Passerines were the most widely distributed and abundant group of birds observed during the site-specific surveys. A minimum of 2,624 birds belonging to this group were recorded as using the onshore ornithology study area (as calculated by summing the peak count of each species in Table 1.8).
- 1.6.4.29 The most abundant passerines were common starling with a peak count of 343 (Figure 1.37). This was followed by redwing, with a count of 277 (Figure 1.33).

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1.6.4.30 Most passerine species were widely distributed across the onshore ornithology study area and recorded in a wide variety of habitats. Distribution of red and amber-listed (both BOCC UK or BOCC Wales species) are shown in Figure 1.19 to Figure 1.44.

Table 1.8: Abundance of onshore wintering and migratory birds recorded within the onshore ornithology study area.

Note: ¹ = Qualifying species or assemblage feature of the Dee Estuary SPA and Ramsar site.

Taxonomic group	Species	UK BOCC5 status	BOCC4 Wales status	Annex 1 listed	Section 7 listed	Number recorded visit 1	Number recorded visit 2	Peak count
Swans, geese and ducks	Mallard	Amber	Green			3	23	23
	Eurasian teal ¹	Amber	Amber			0	9	9
Partridges and pheasants	Common pheasant <i>Phasianus colchicus</i>	Introduced	Introduced			1	19	19
Herons and storks	Grey heron	Green	Amber			1	0	1
	Little egret	Green	Green	Yes		0	1	1
Raptors	Common buzzard	Green	Green			6	16	16
	Eurasian sparrowhawk	Amber	Green			1	6	6
Rails, crakes and coots	Eurasian coot	Green	Amber			0	7	7
	Common moorhen	Amber	Green			1	7	7
Waders	Eurasian curlew ¹	Red	Red		Yes	11	0	11
	Eurasian oystercatcher ¹	Amber	Amber			3	2	3
	Common snipe	Amber	Amber			8	2	8
	Eurasian woodcock	Red	Red			2	1	2
Gulls and terns	Black-headed gull	Amber	Red		Yes	72	2	72
	Common gull	Amber	Amber			77	0	77
	Great black-backed gull	Amber	Amber			1	0	1
	Herring gull	Red	Red		Yes	130	147	147
Woodpeckers	Great spotted woodpecker	Green	Green			8	8	8
Passerines	Common blackbird <i>Turdus merula</i>	Green	Green			120	121	121
	Eurasian blue tit <i>Cyanistes caeruleus</i>	Green	Green			31	83	83

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Taxonomic group	Species	UK BOCC5 status	BOCC4 Wales status	Annex 1 listed	Section 7 listed	Number recorded visit 1	Number recorded visit 2	Peak count
	Eurasian bullfinch	Amber	Amber		Yes	6	23	23
	Carrion crow <i>Corvus corone</i>	Green	Green			32	79	79
	Common chaffinch	Green	Amber			93	82	93
	Common chiffchaff	Green	Green			0	51	51
	Coal tit	Green	Amber			1	3	3
	Eurasian collared dove <i>Streptopelia decaocto</i>	Green	Green			1	3	3
	Common crossbill	Green	Green			1	0	1
	Dunnock	Amber	Amber		Yes	26	118	118
	Feral pigeon	Green	Not assessed			0	27	27
	Fieldfare	Red	Amber			32	0	32
	Goldcrest	Green	Red			3	27	27
	European goldfinch <i>Carduelis carduelis</i>	Green	Green			11	37	37
	Great tit <i>Parus major</i>	Green	Green			19	77	77
	European greenfinch	Red	Red			3	16	16
	Grey wagtail	Amber	Amber			0	1	1
	Common house martin	Red	Amber			0	5	5
	House sparrow	Red	Amber		Yes	51	111	111
	Jackdaw	Green	Green			260	173	260
	Eurasian jay <i>Garrulus glandarius</i>	Green	Green			6	5	6
	Linnet	Red	Red		Yes	2	3	3
	Long-tailed tit <i>Aegithalos caudatus</i>	Green	Green			36	28	36
	Eurasian magpie	Green	Amber			20	121	121

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Taxonomic group	Species	UK BOCC5 status	BOCC4 Wales status	Annex 1 listed	Section 7 listed	Number recorded visit 1	Number recorded visit 2	Peak count
	Meadow pipit	Amber	Red			31	101	101
	Mistle thrush	Red	Amber			15	18	18
	Eurasian nuthatch <i>Sitta europaea</i>	Green	Green			2	7	7
	Pied wagtail <i>Motacilla alba</i>	Green	Green			3	8	8
	Northern raven <i>Corvus corax</i>	Green	Green			6	3	6
	Redwing	Amber	Green			271	95	271
	European robin <i>Erithacus rubecula</i>	Green	Green			50	128	128
	Rook	Amber	Red			25	44	44
	Eurasian siskin <i>Spinus spinus</i>	Green	Green			0	1	1
	Eurasian skylark	Red	Amber		Yes	1	4	4
	Song thrush	Amber	Green		Yes	31	27	31
	Common starling	Red	Red		Yes	343	239	343
	Stock dove	Amber	Green			9	16	16
	European stonechat <i>Saxicola rubicola</i>	Green	Green			1	3	3
	Barn swallow	Green	Green			0	1	1
	Tree sparrow	Red	Red		Yes	1	0	1
	Treecreeper <i>Certhia familiaris</i>	Green	Green			3	2	3
	Northern wheatear	Amber	Amber			0	2	2
	Willow warbler	Amber	Red			0	1	1
	Common woodpigeon	Amber	Green			234	124	234
	Eurasian wren	Amber	Green			31	66	66
	Yellowhammer	Red	Red		Yes	0	1	1

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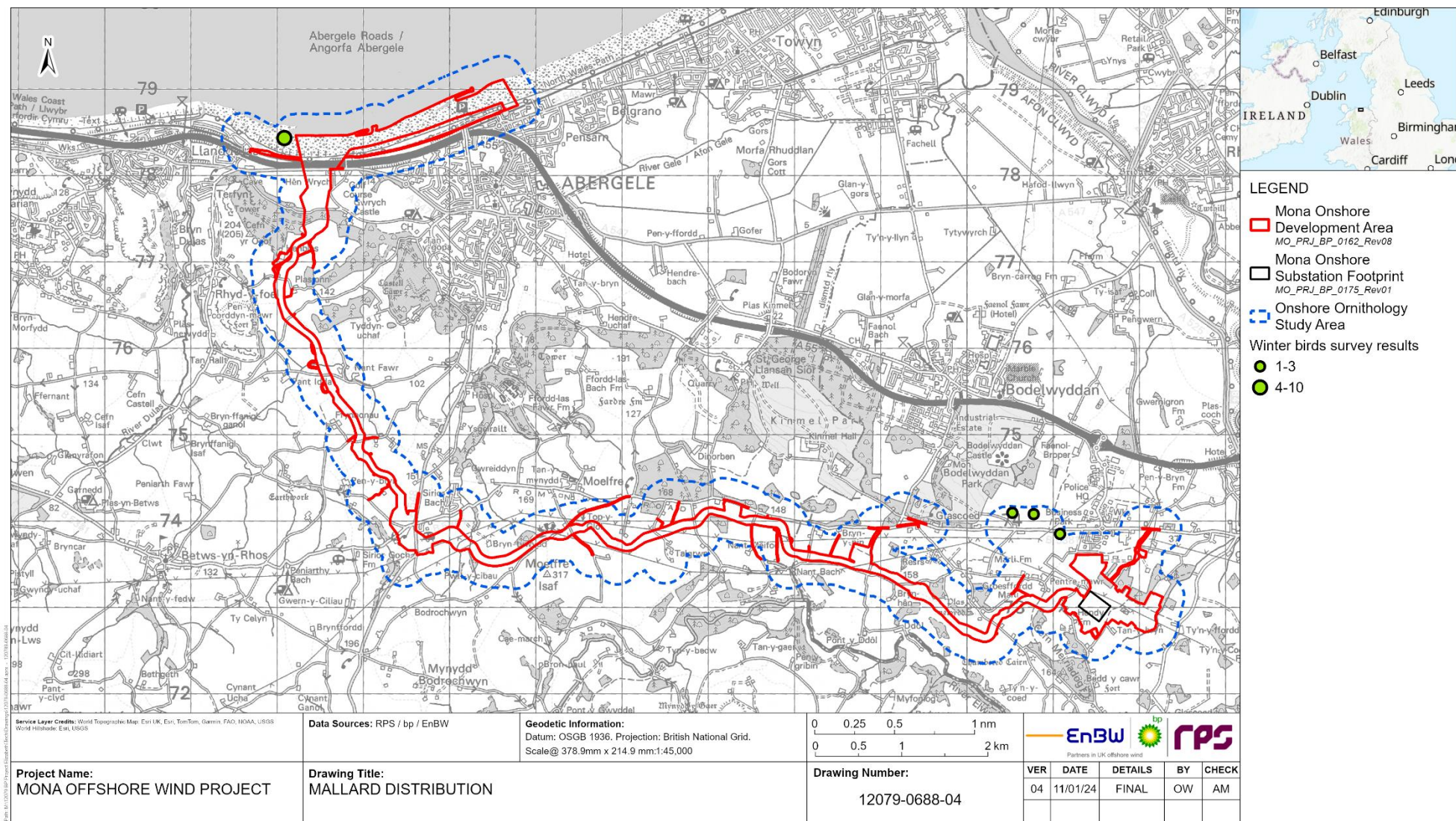


Figure 1.4: Mallard distribution.

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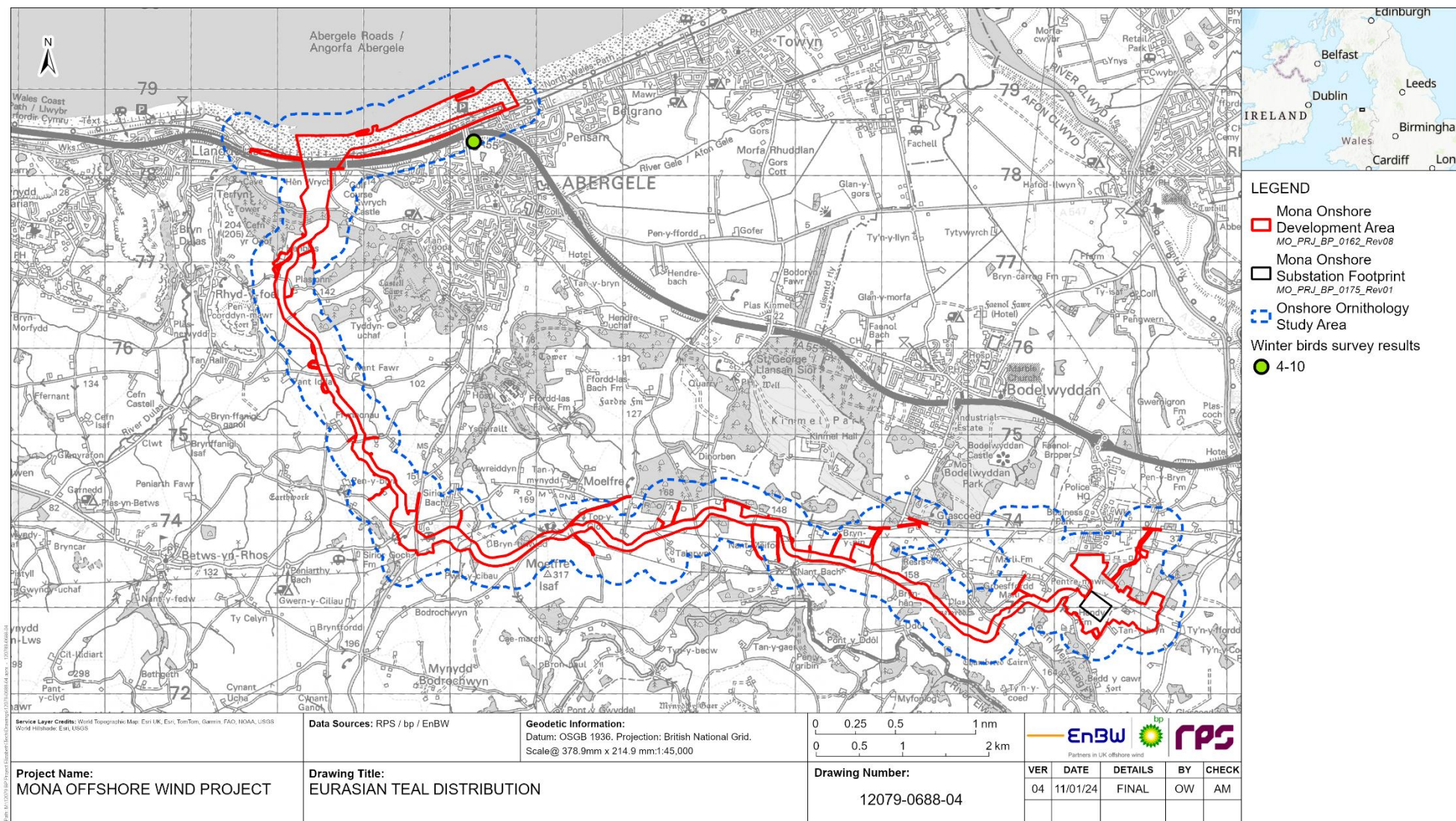


Figure 1.5: Eurasian teal distribution.

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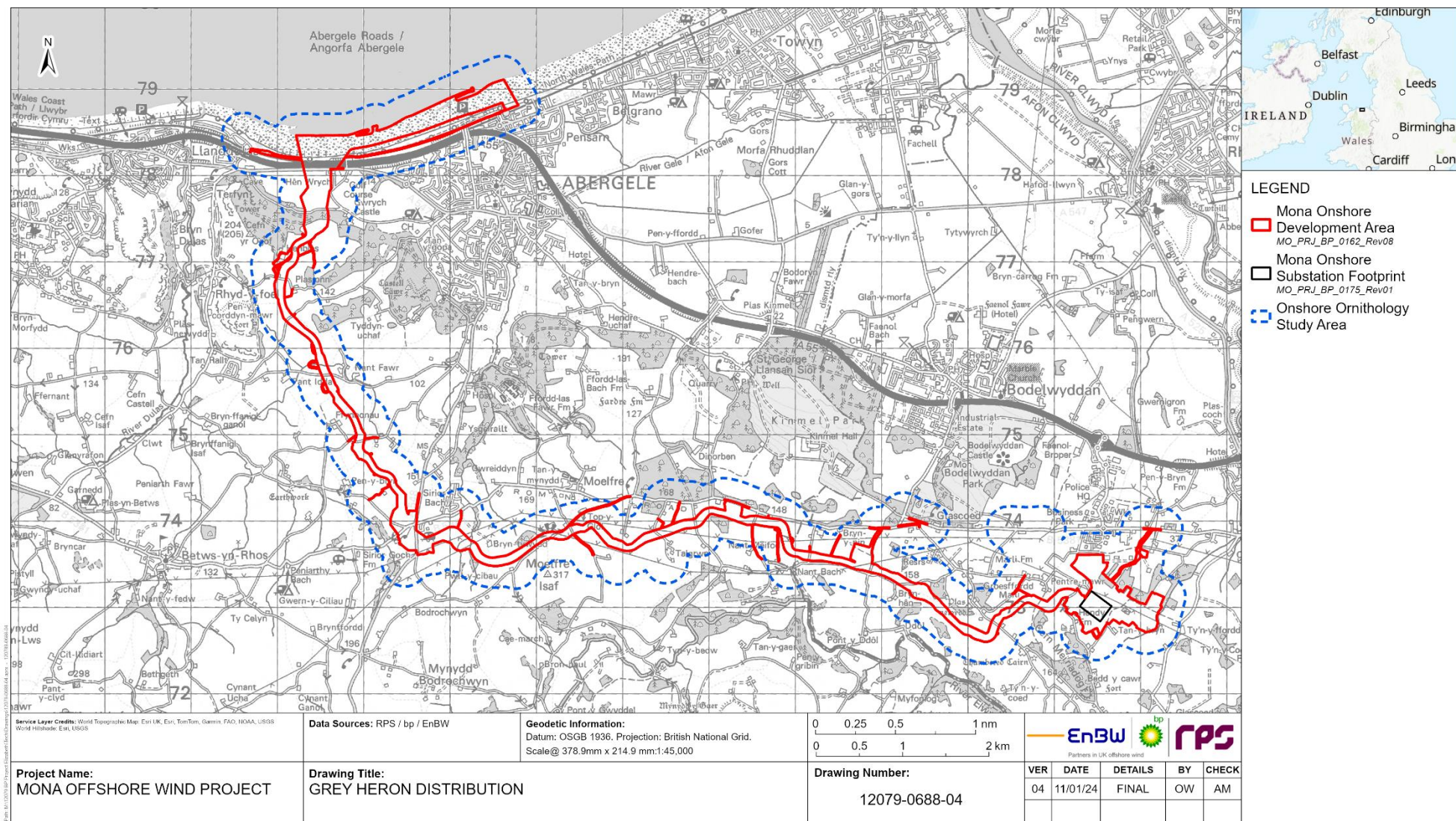


Figure 1.6: Grey heron distribution.

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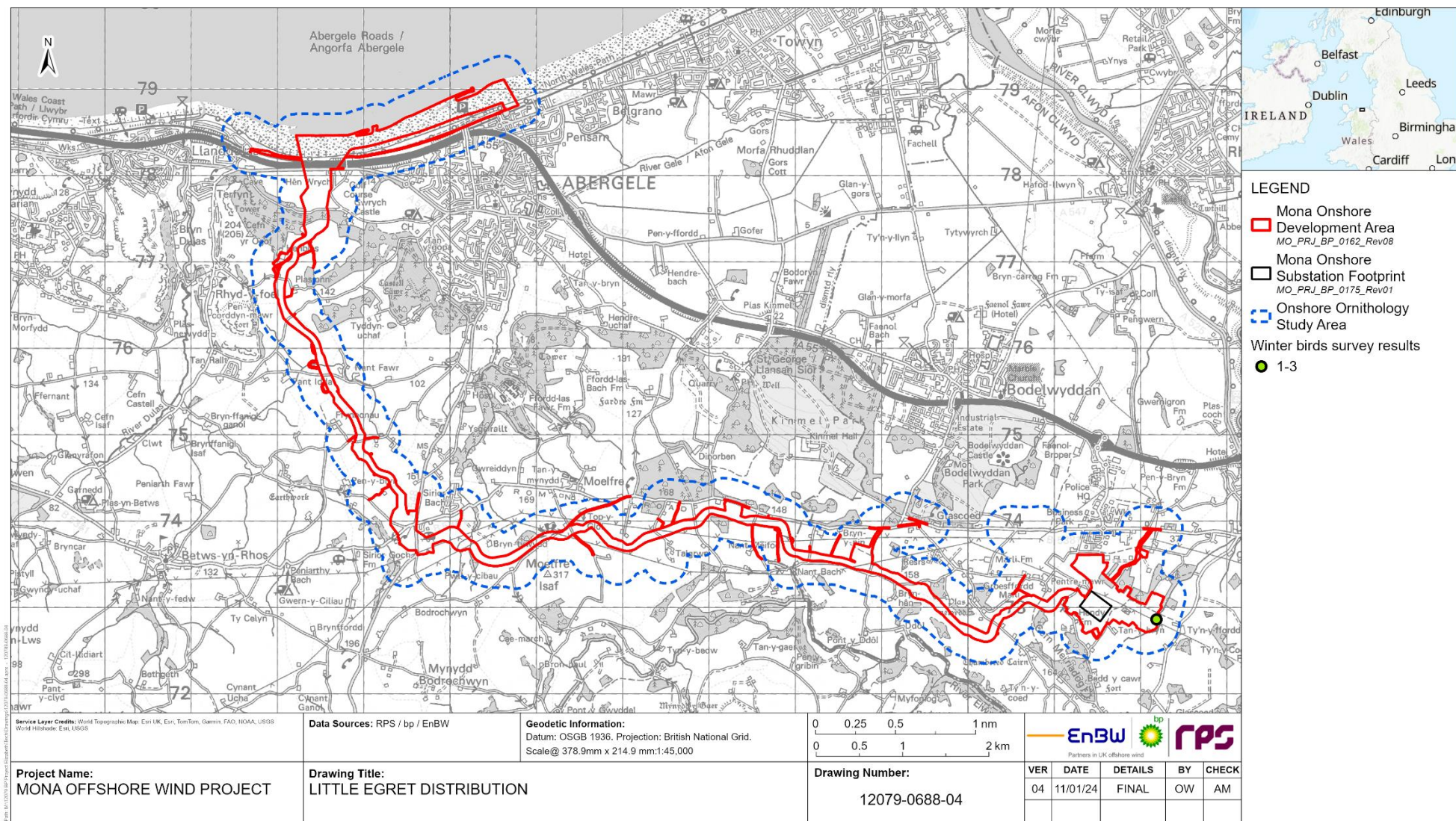


Figure 1.7: Little egret distribution.

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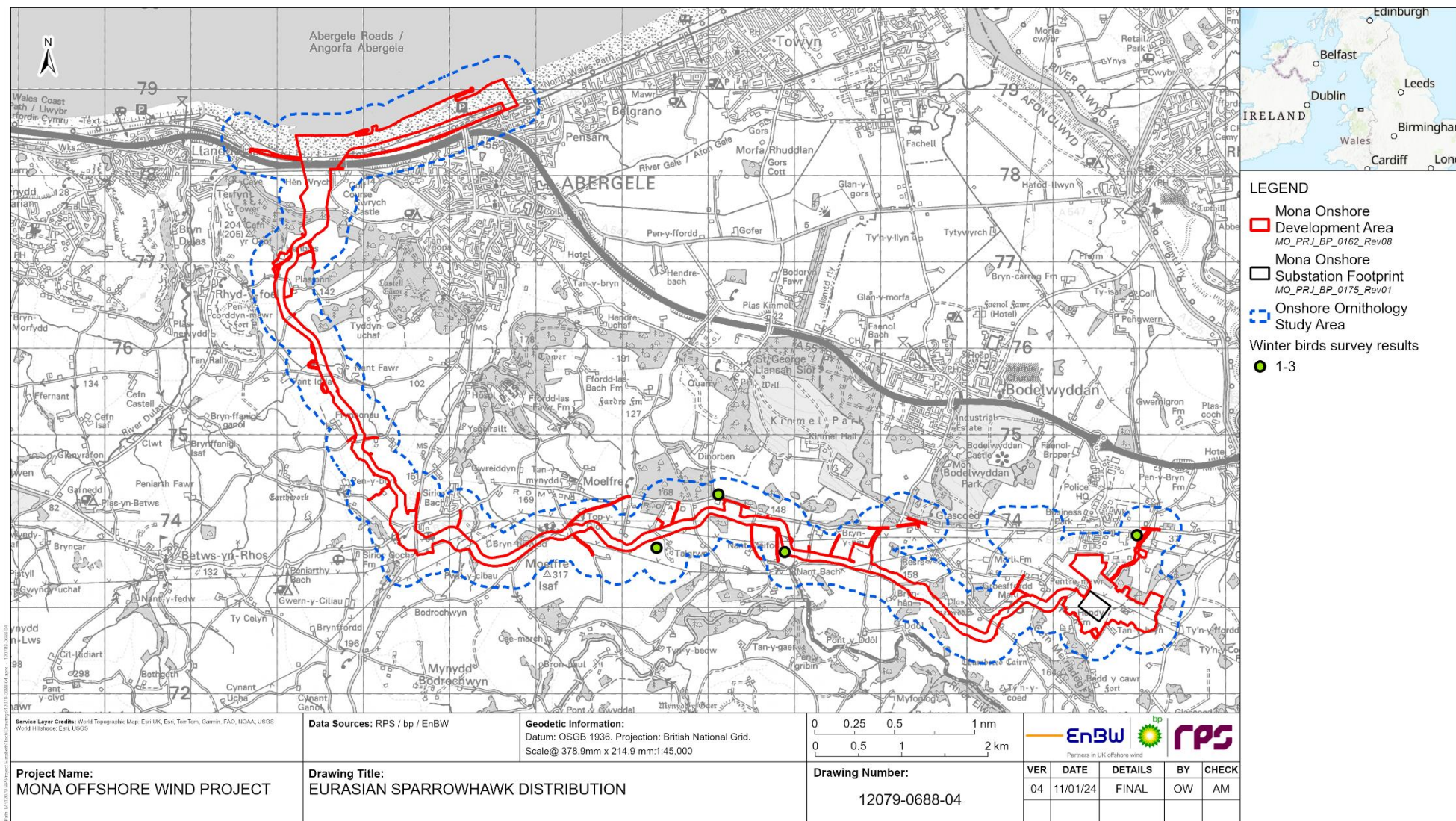


Figure 1.8: Eurasian sparrowhawk distribution.

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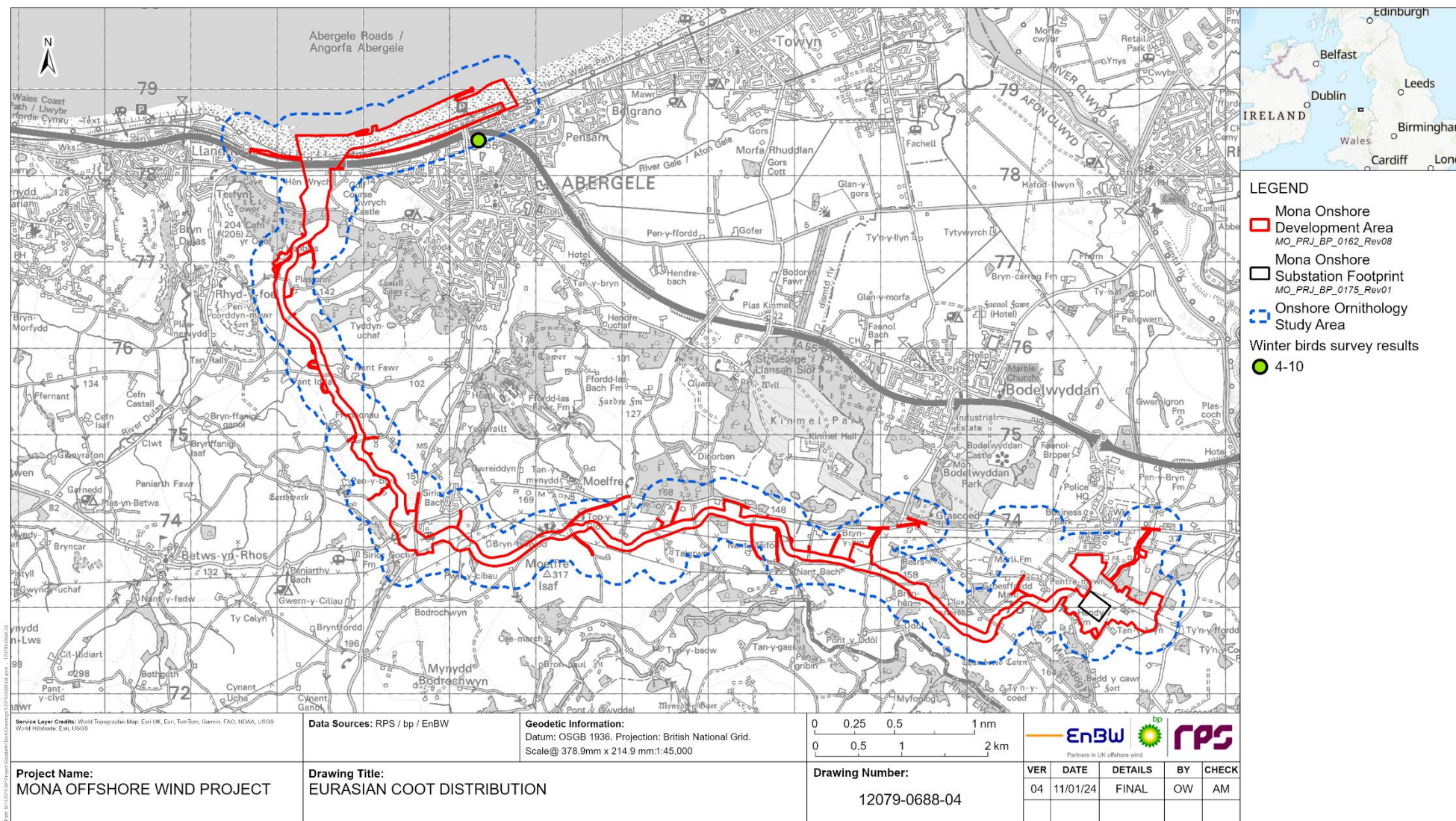


Figure 1.9: Eurasian coot distribution.

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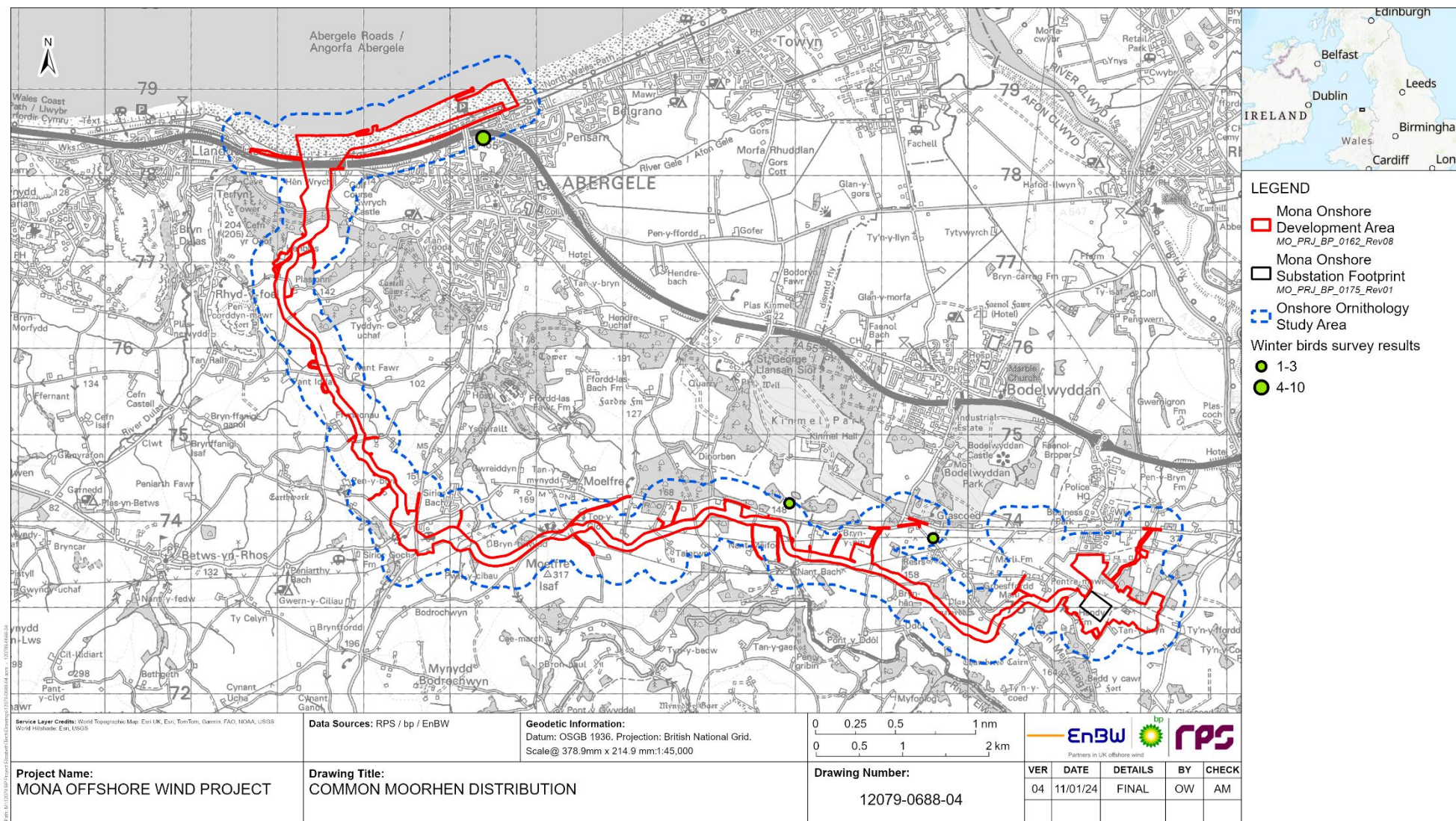


Figure 1.10: Common moorhen distribution.

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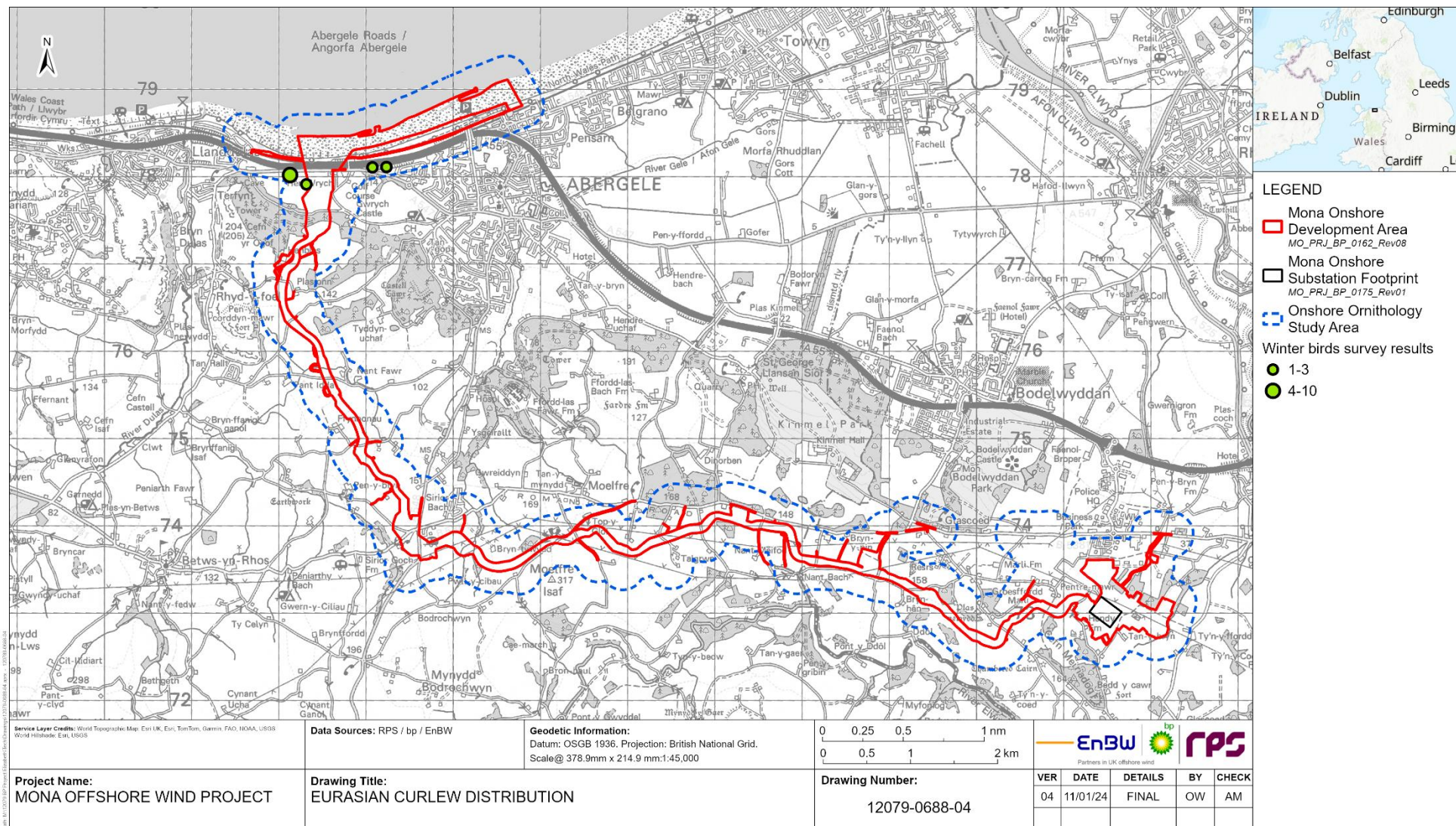


Figure 1.11: Eurasian curlew distribution.

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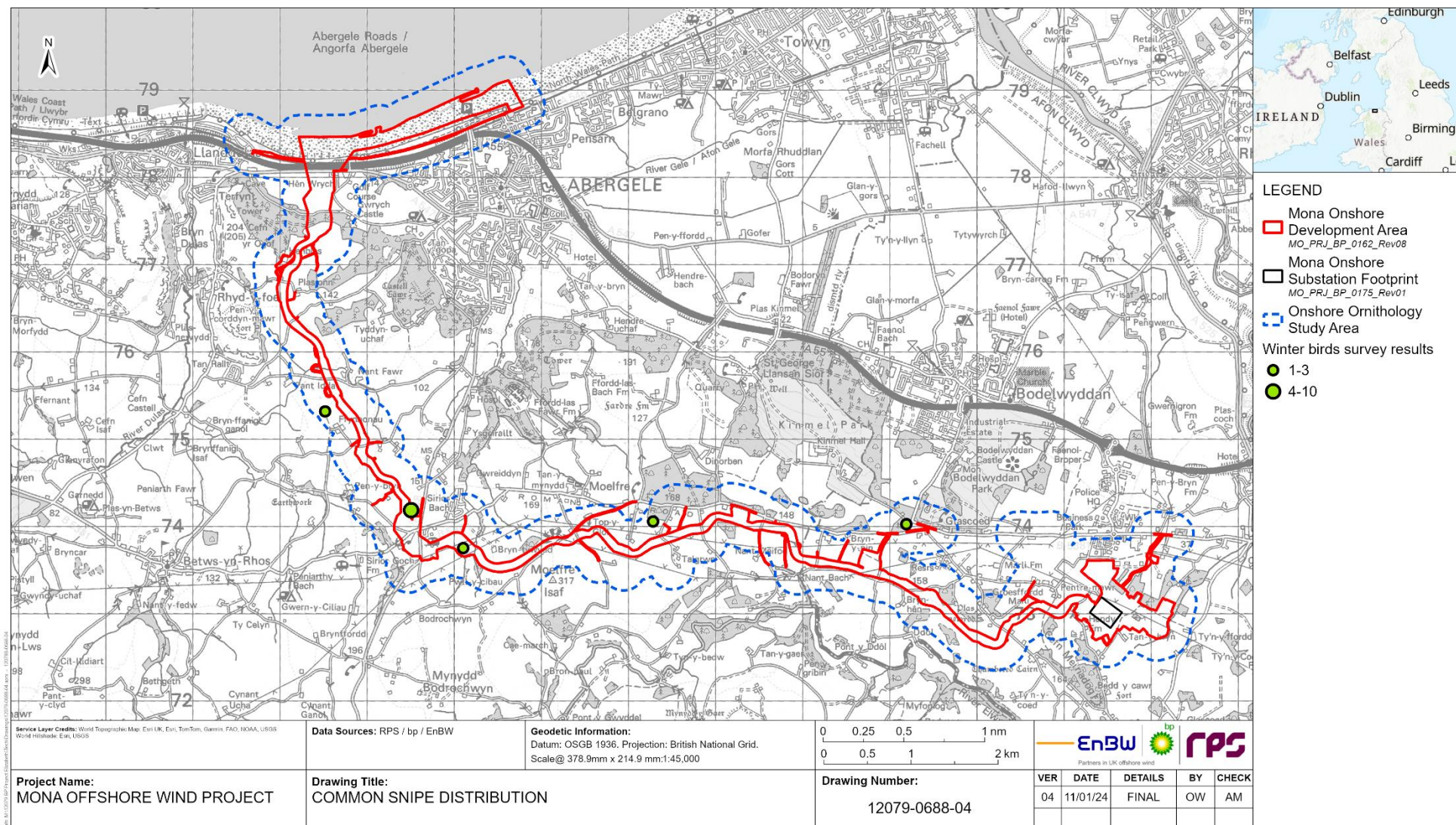


Figure 1.12: Common snipe distribution.

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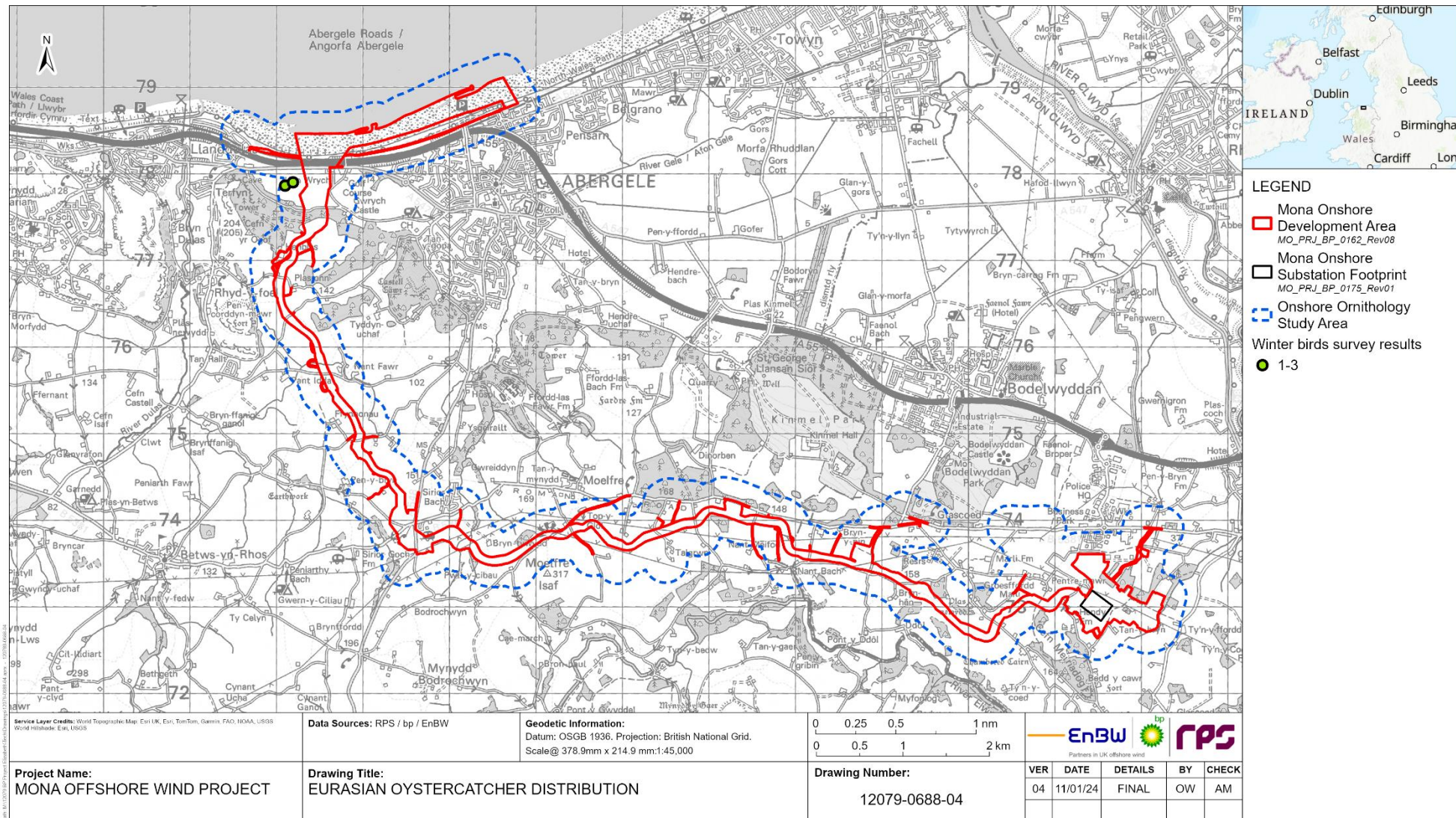


Figure 1.13: Eurasian oystercatcher distribution.

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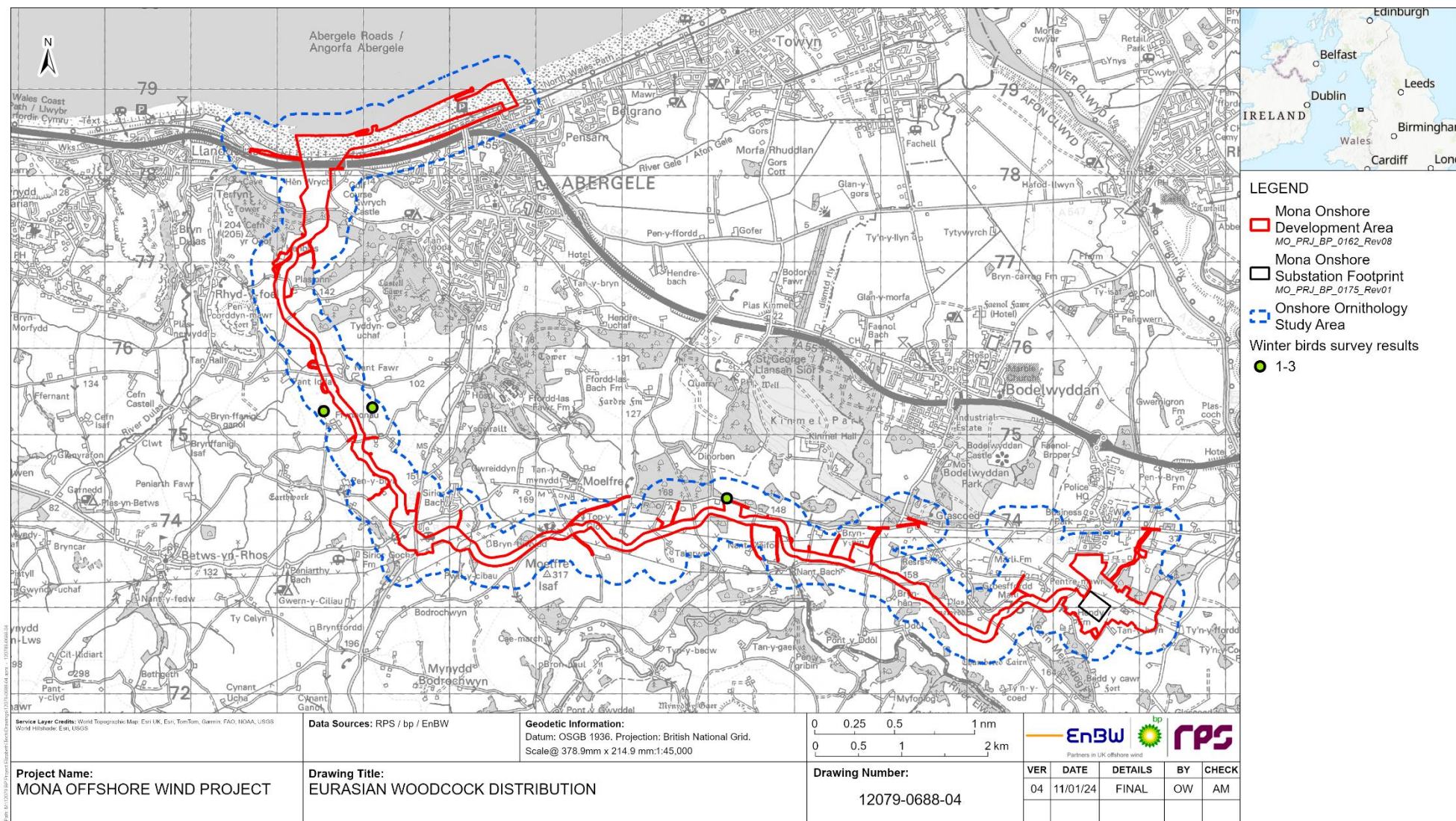


Figure 1.14: Eurasian woodcock distribution.

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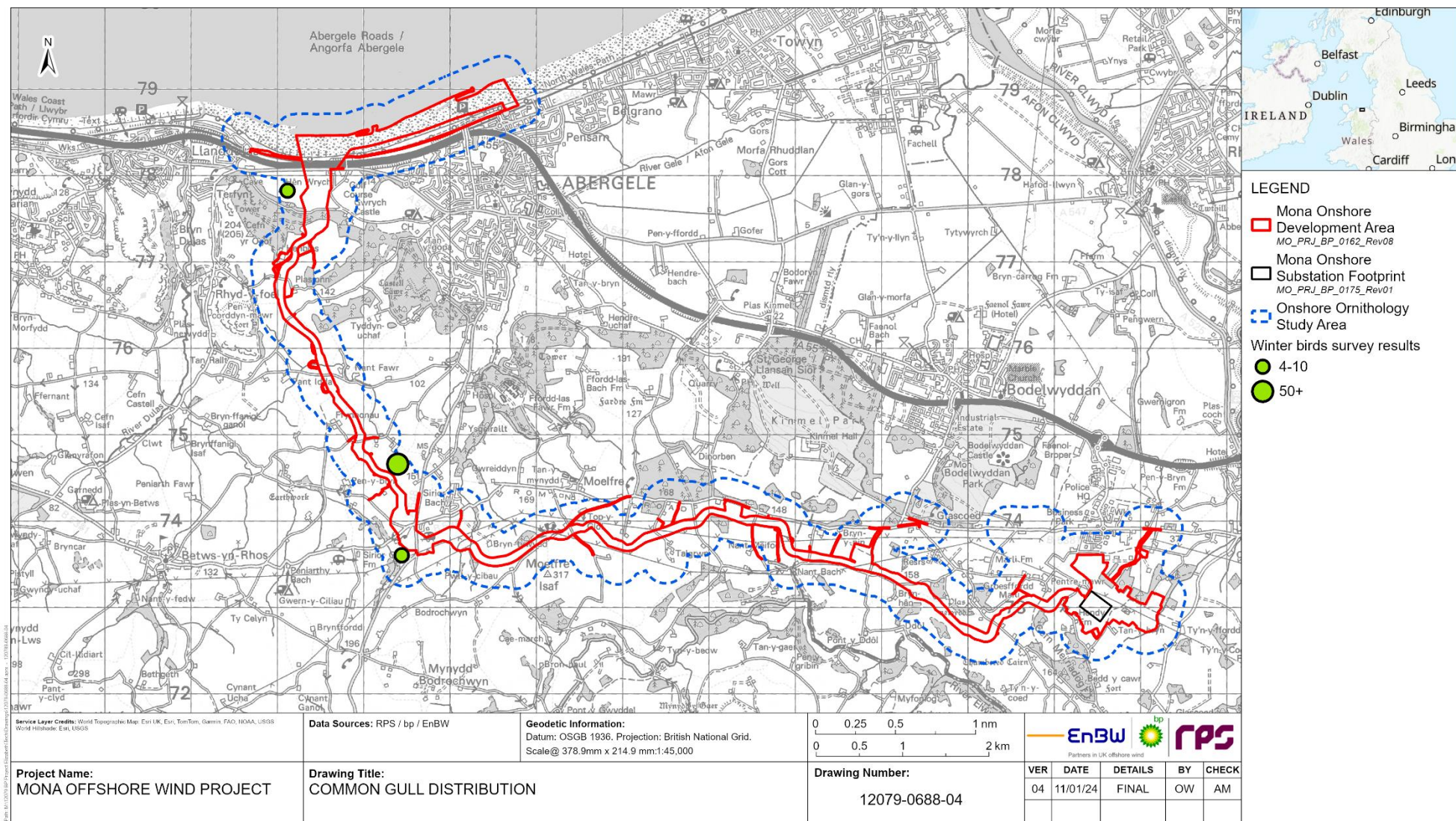


Figure 1.15: Common gull distribution.

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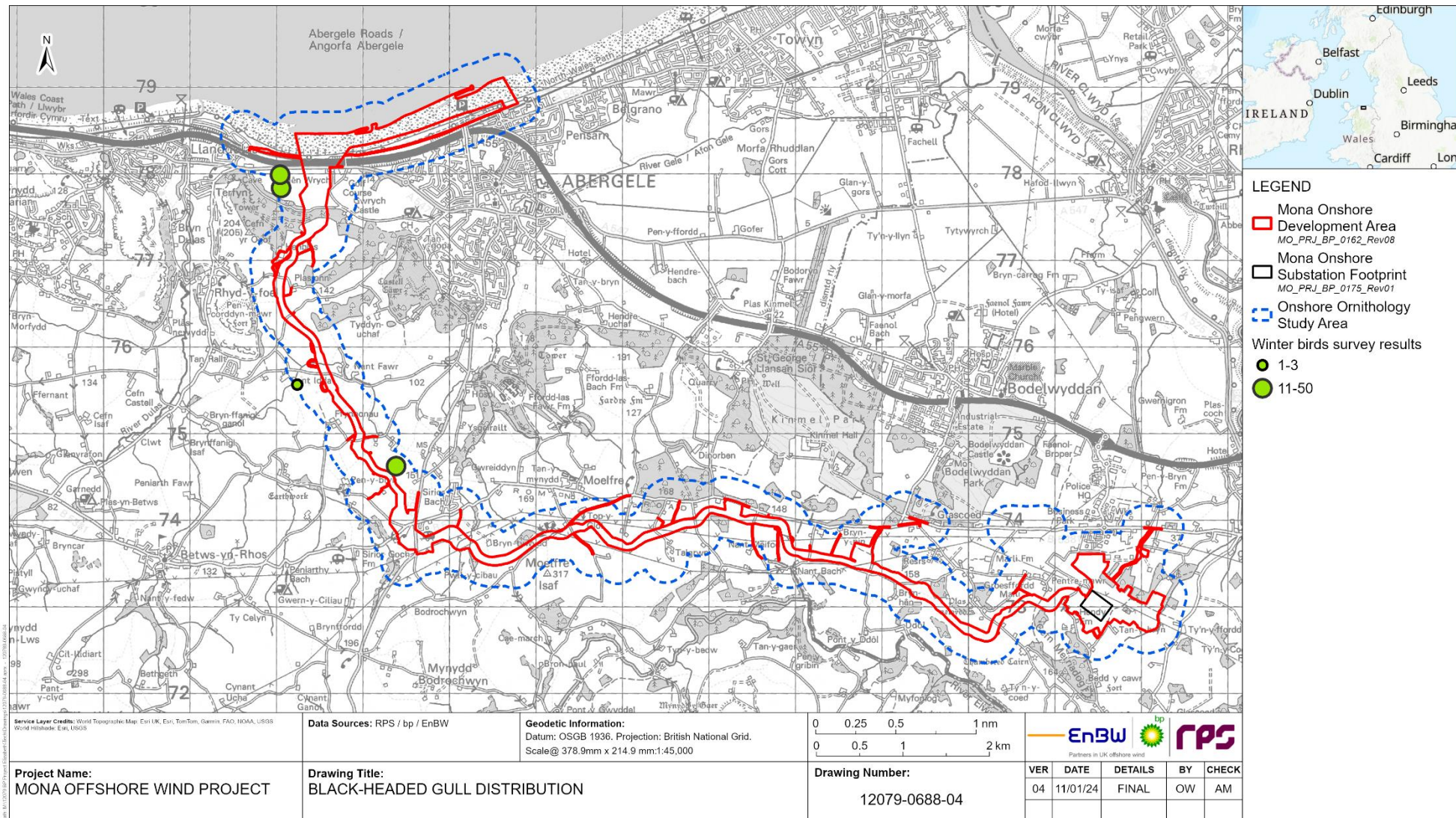


Figure 1.16: Black-headed gull distribution.

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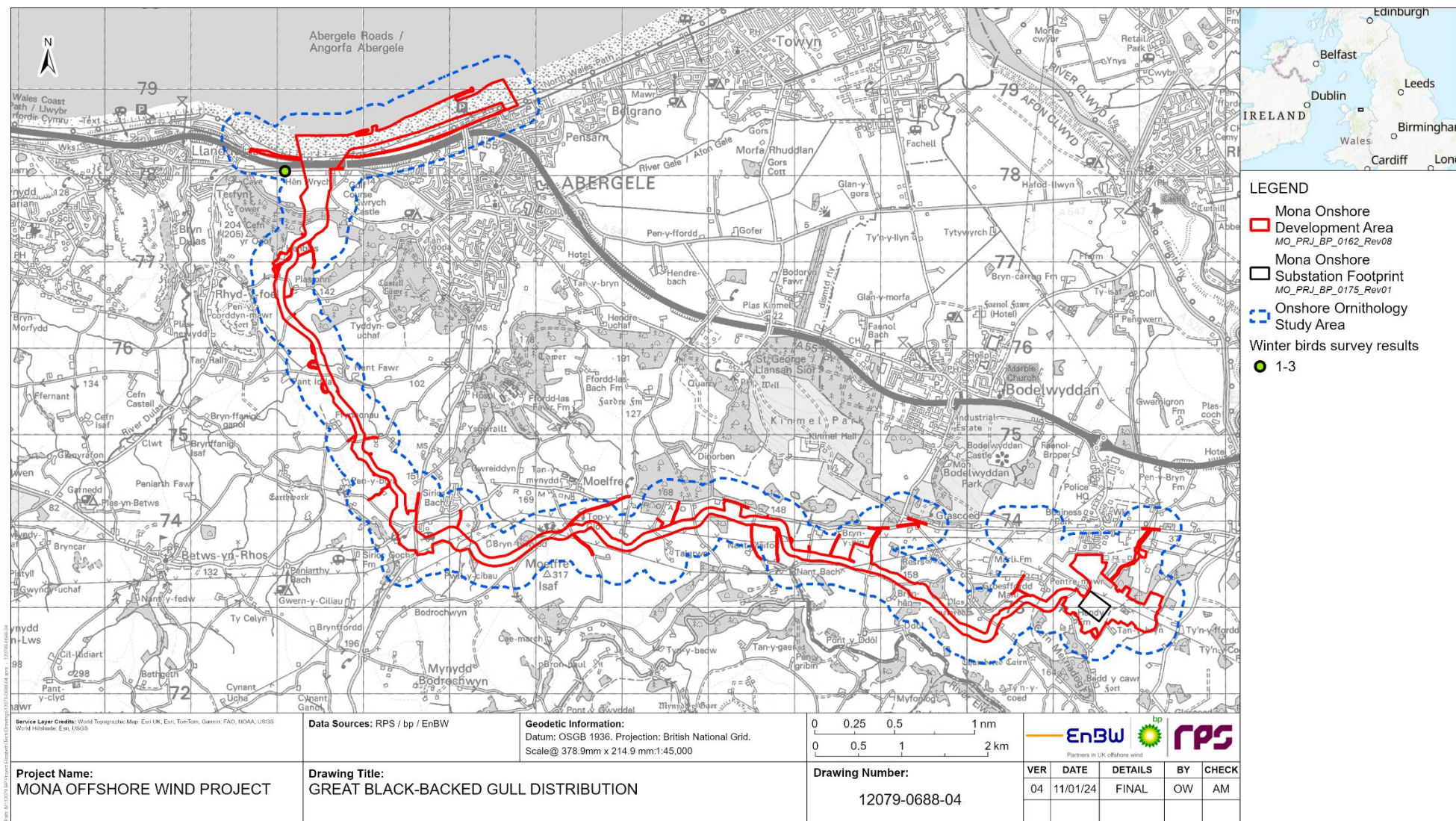


Figure 1.17: Great black-backed gull distribution.

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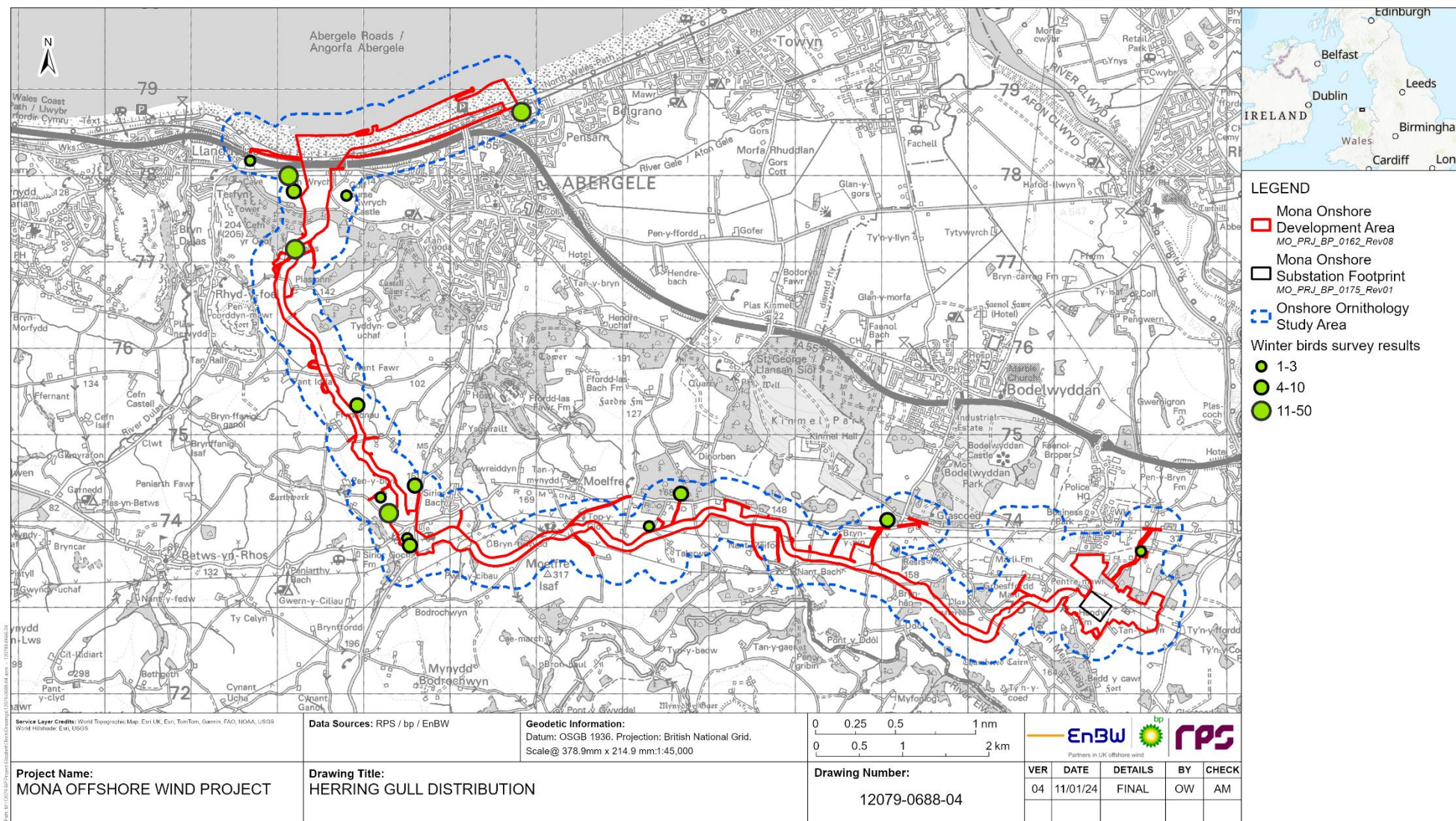


Figure 1.18: Herring gull distribution.

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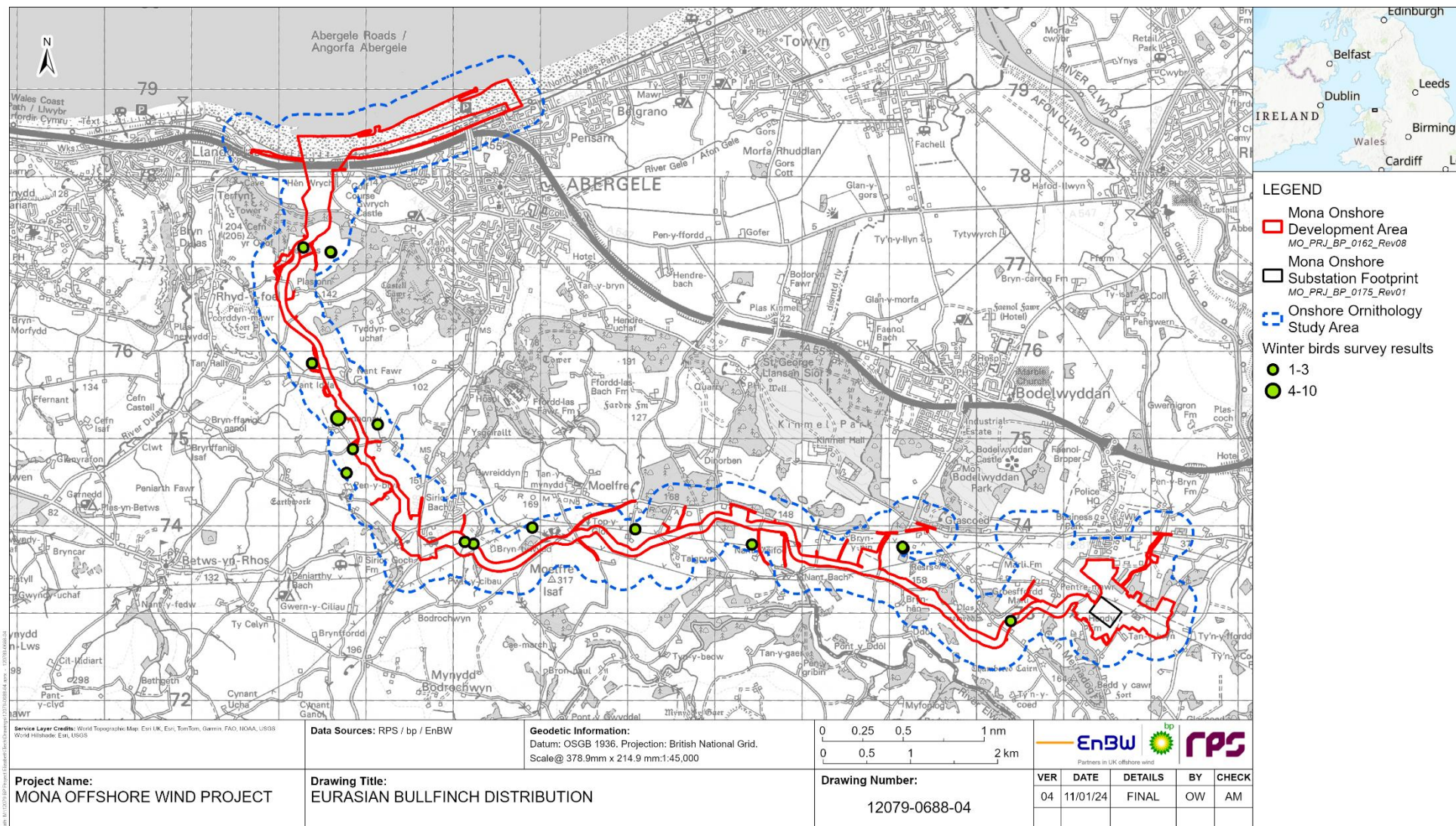


Figure 1.19: Eurasian bullfinch distribution.

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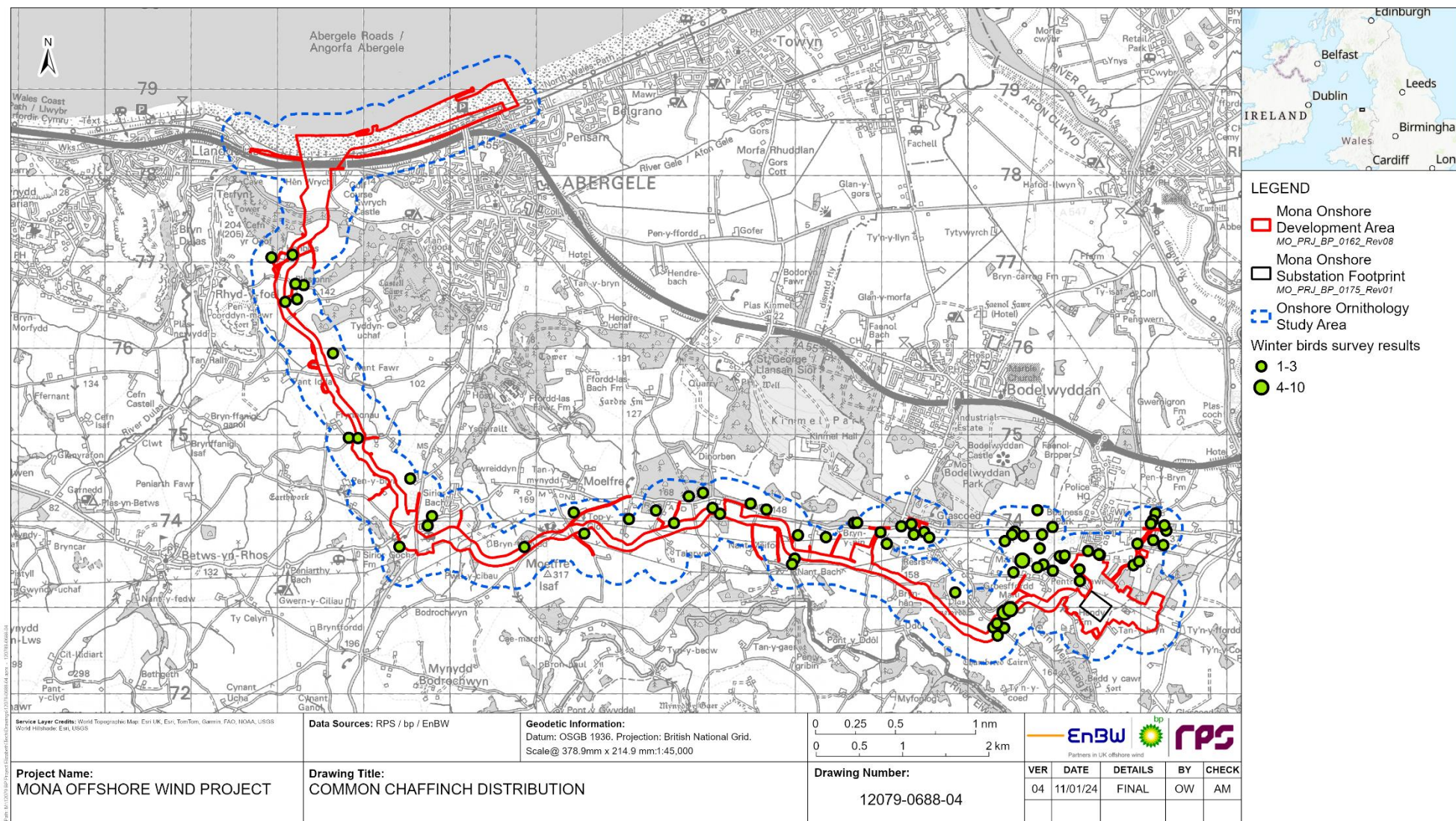


Figure 1.20: Common chaffinch distribution.

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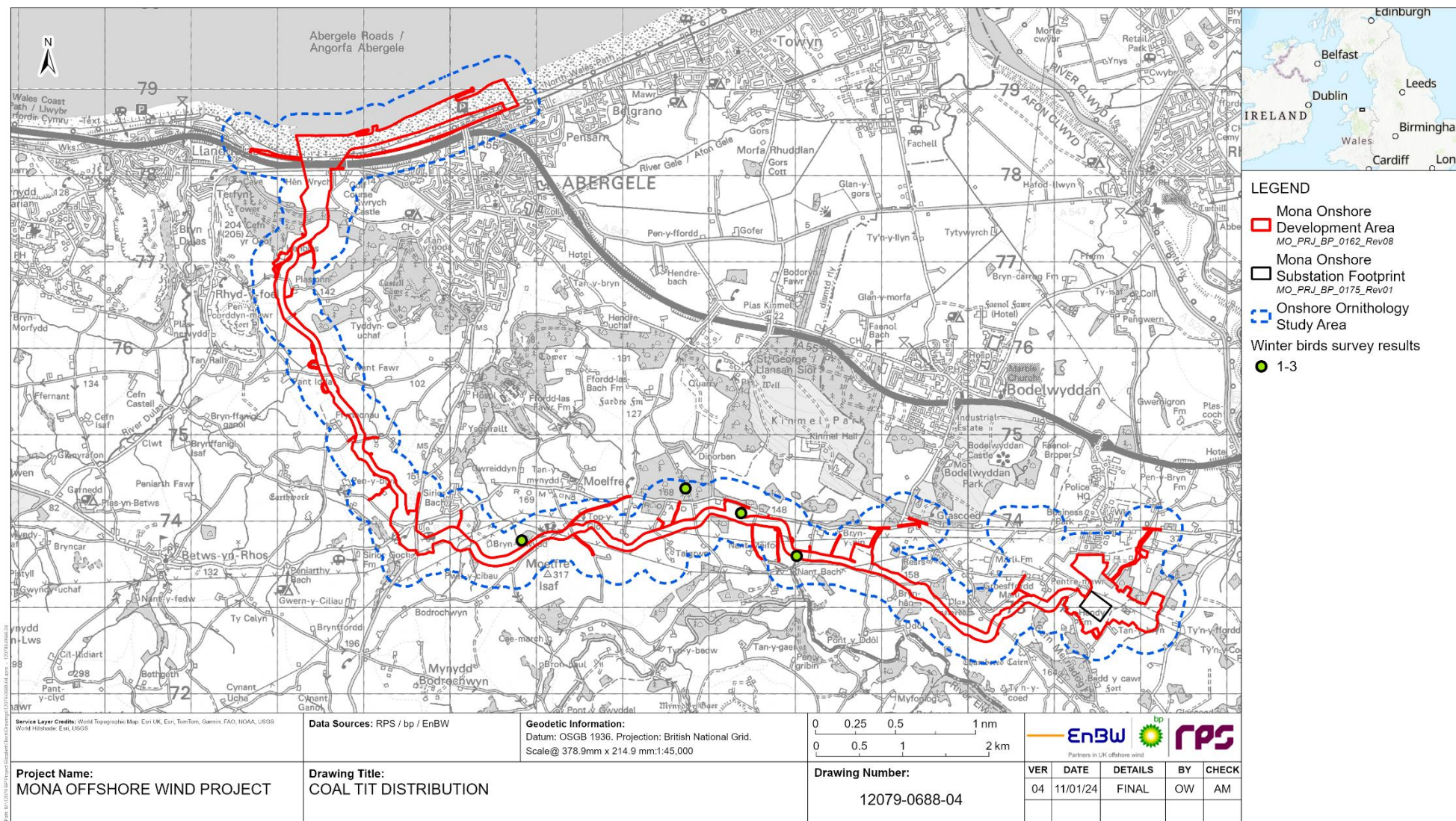


Figure 1.21: Coal tit distribution.

MONA OFFSHORE WIND PROJECT

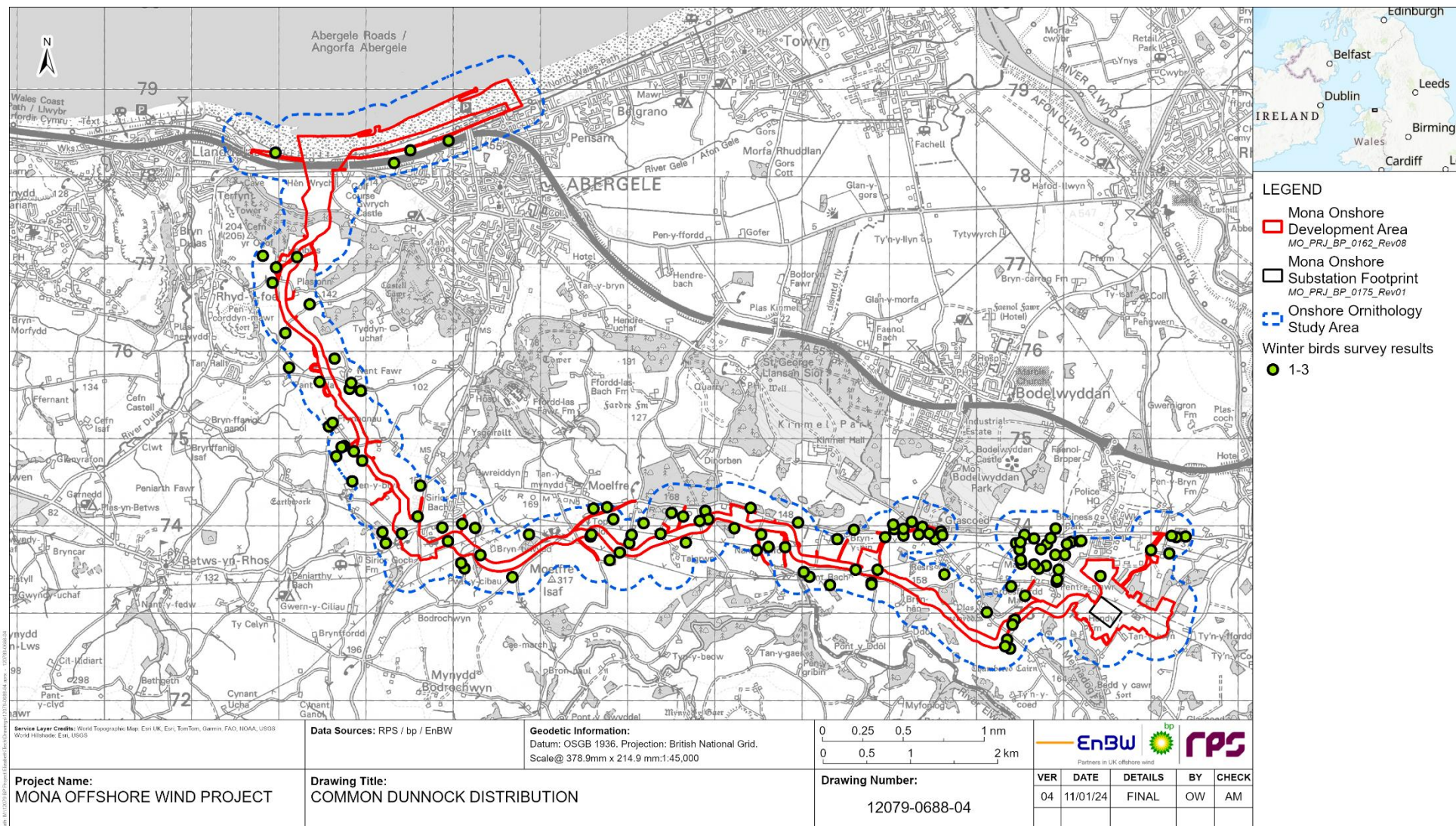


Figure 1.22: Dunnock distribution.

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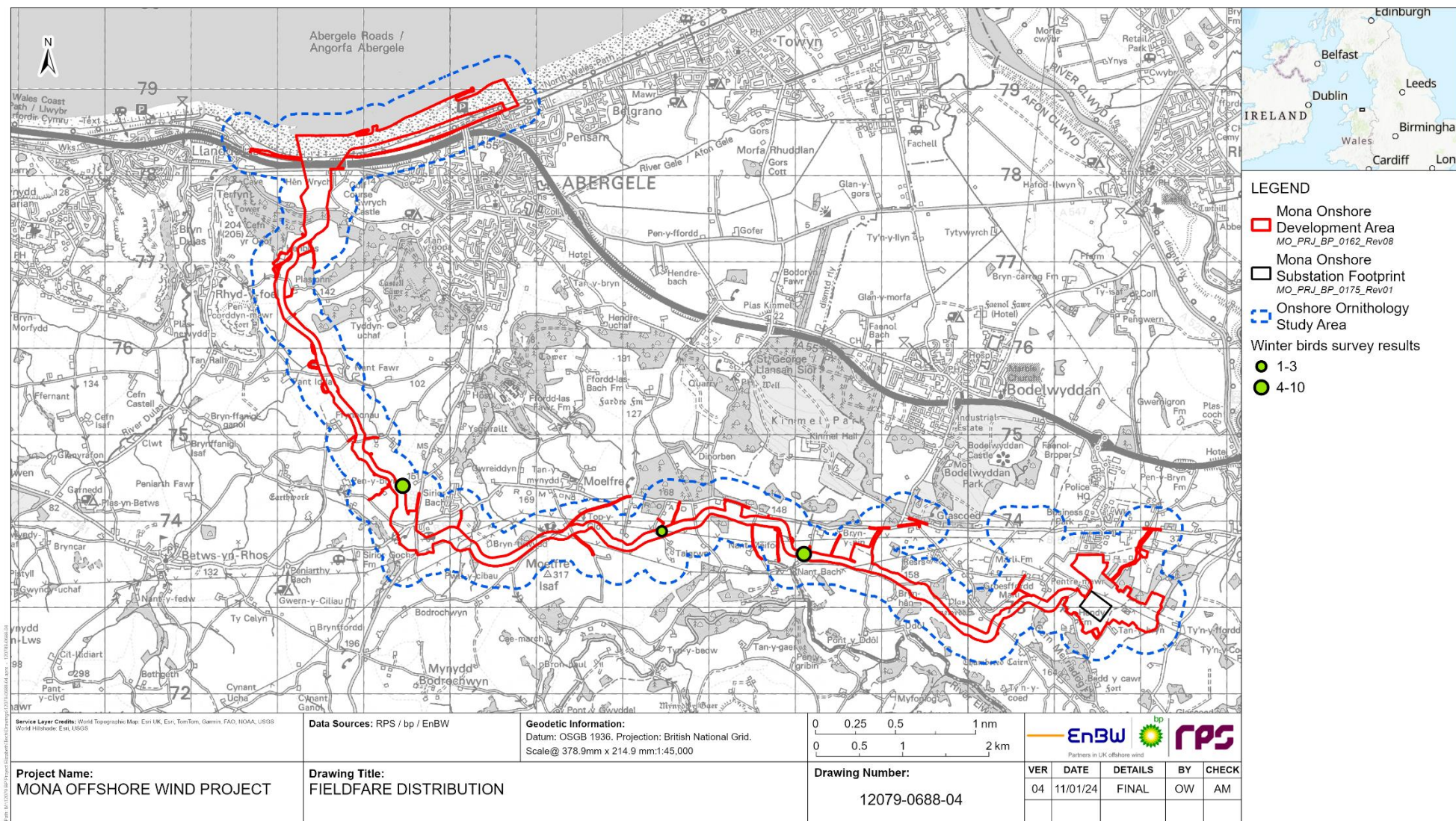


Figure 1.23: Fieldfare distribution.

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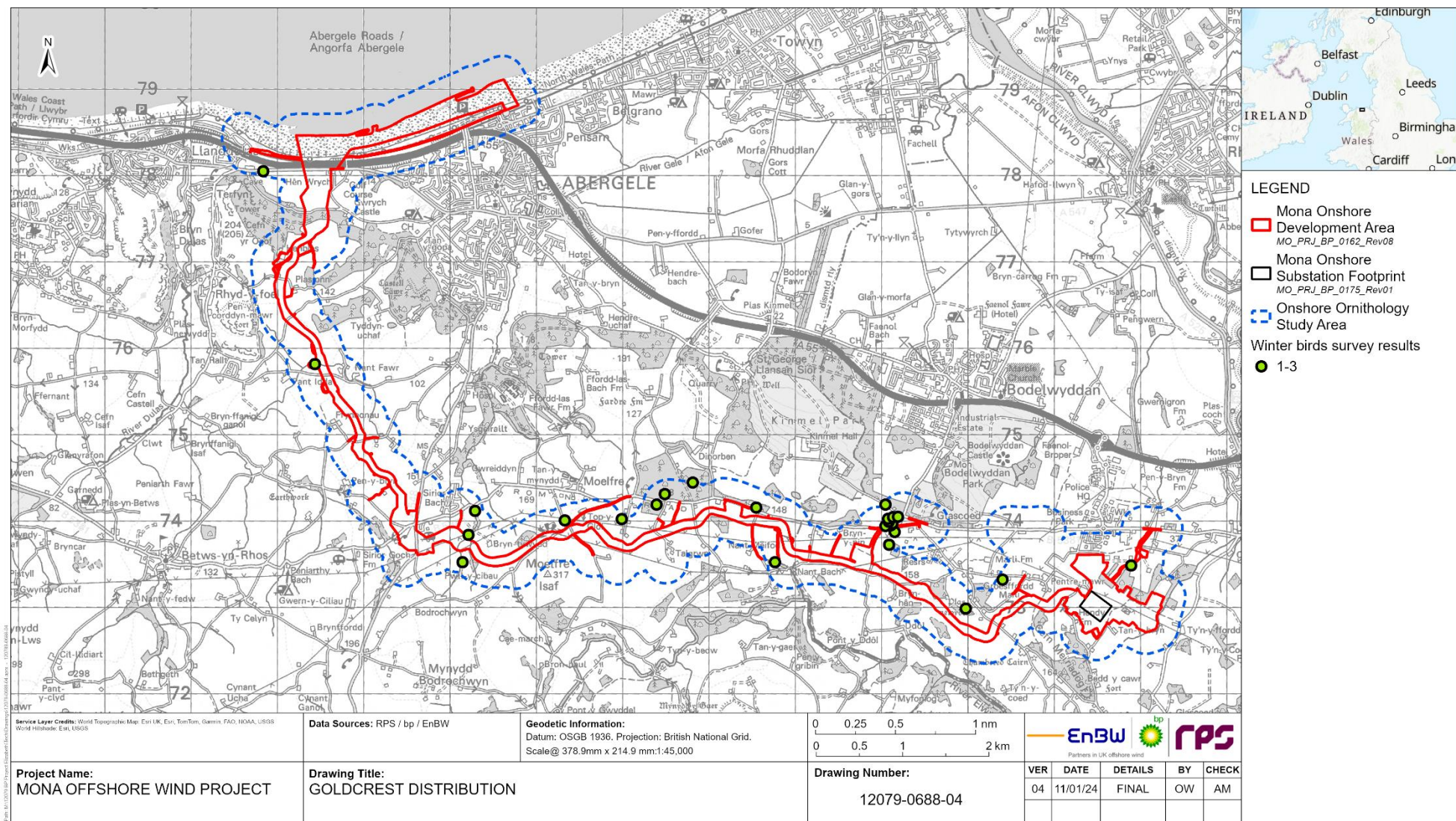


Figure 1.24: Goldcrest distribution.

MONA OFFSHORE WIND PROJECT

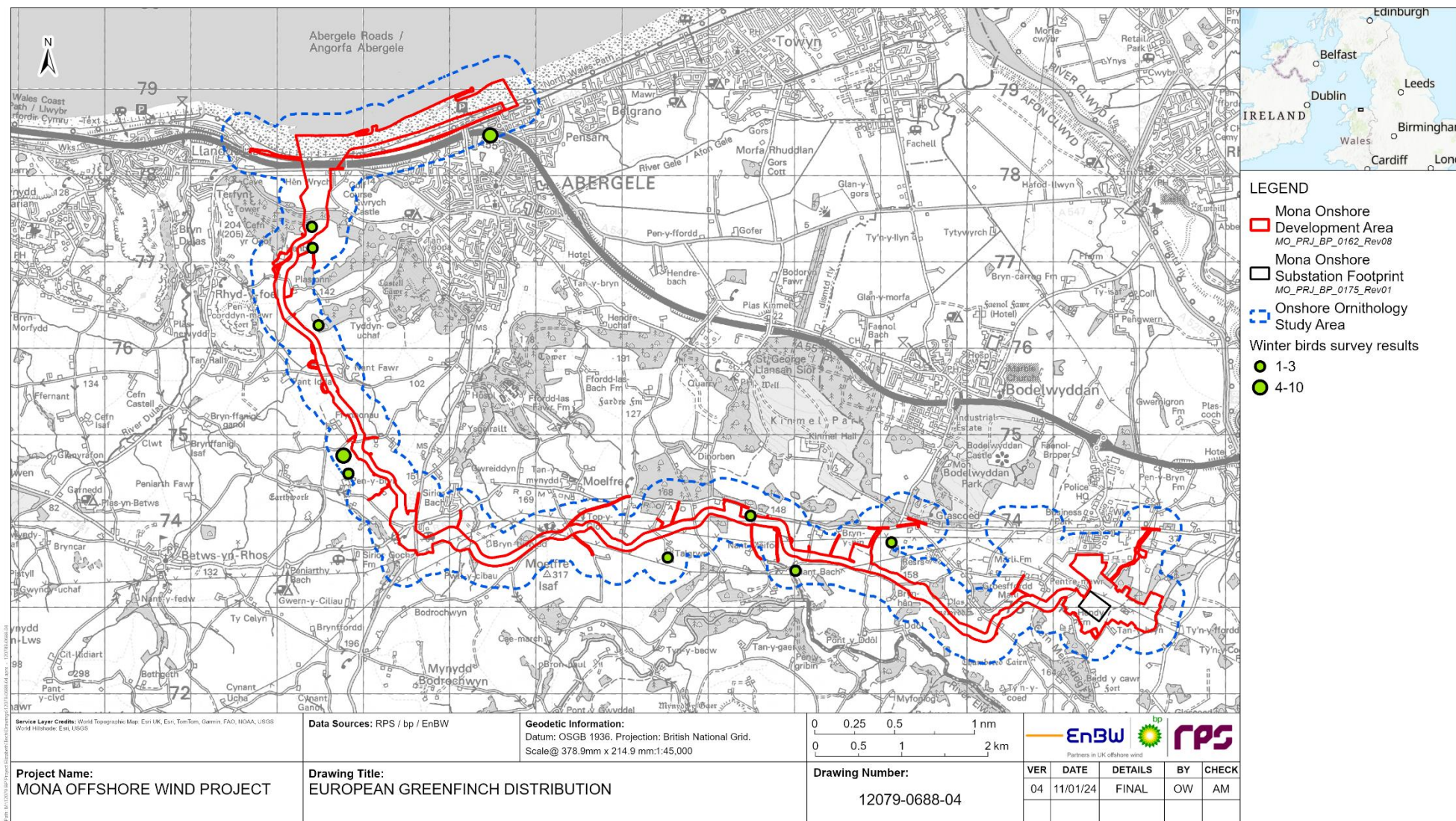


Figure 1.25: European greenfinch distribution.

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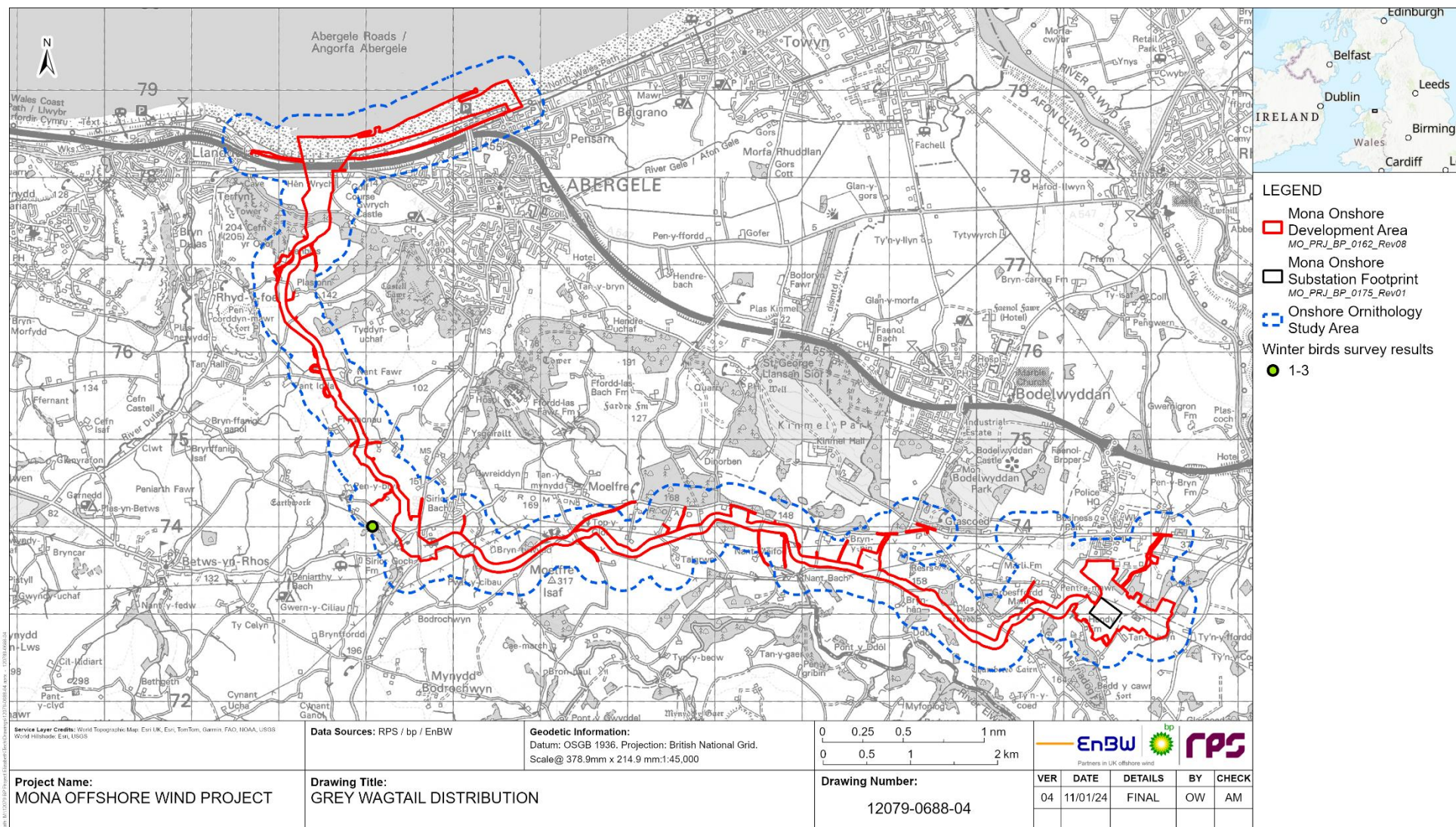


Figure 1.26: Grey wagtail distribution.

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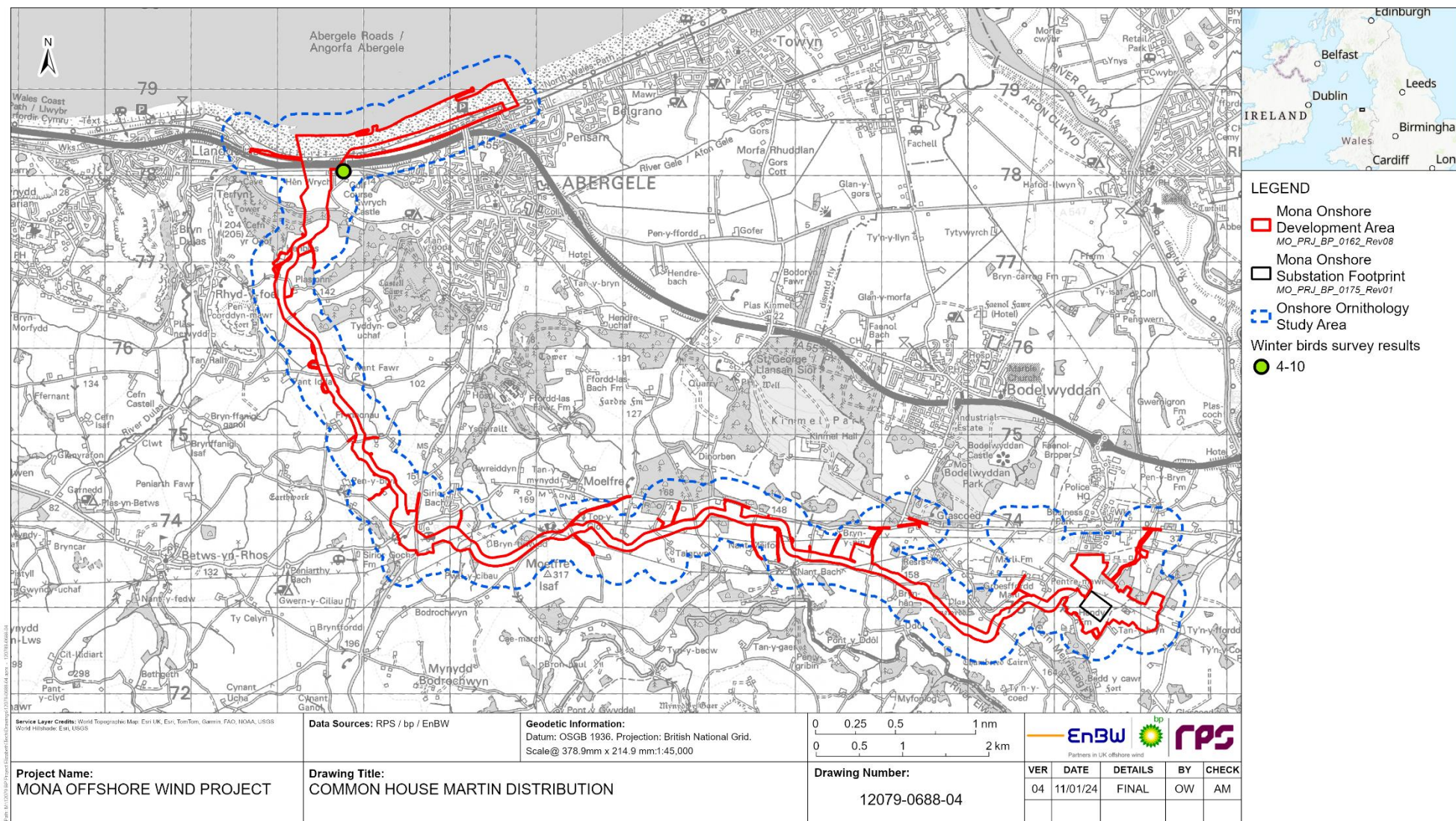


Figure 1.27: Common house martin distribution.

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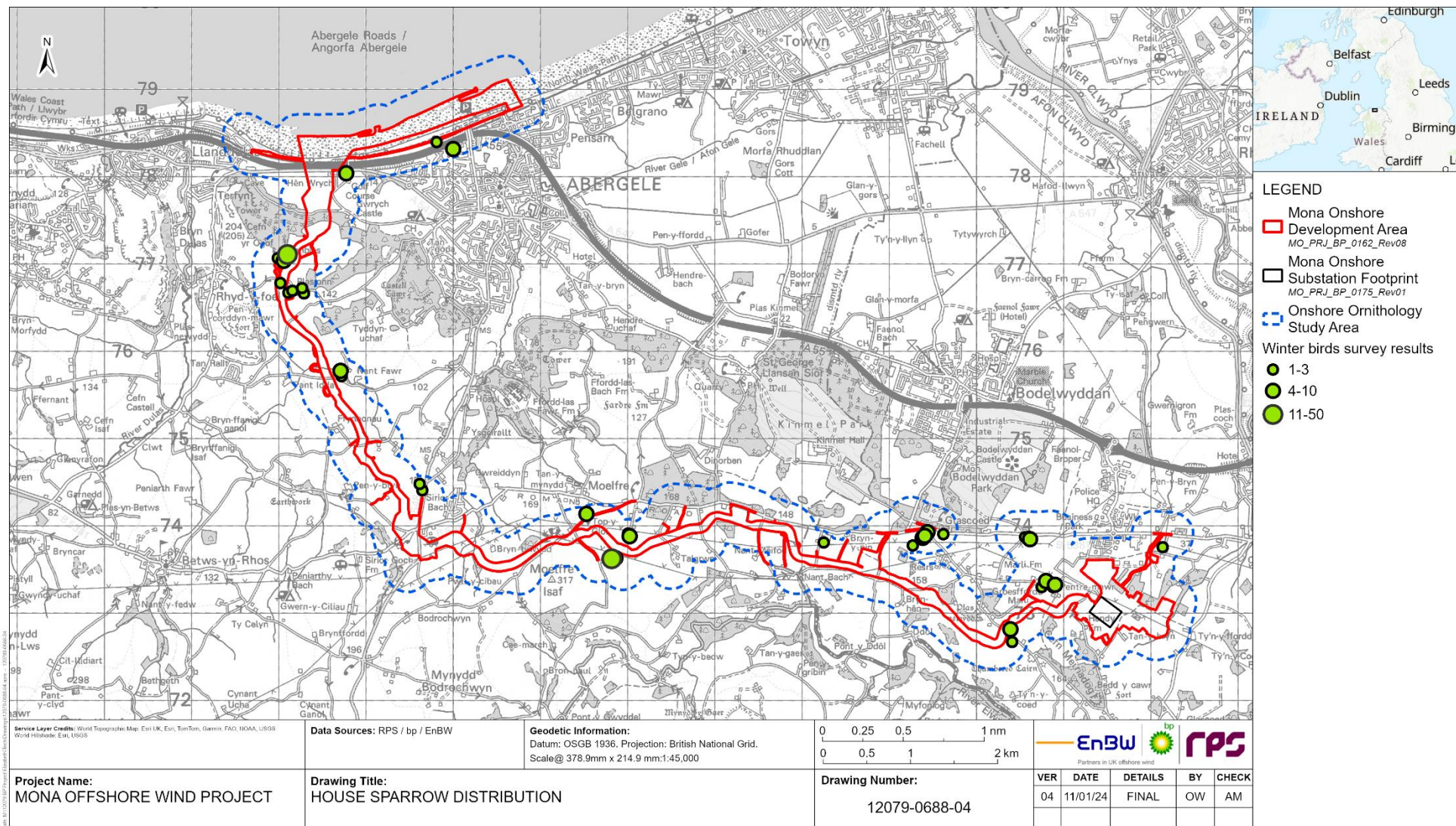


Figure 1.28: House sparrow distribution.

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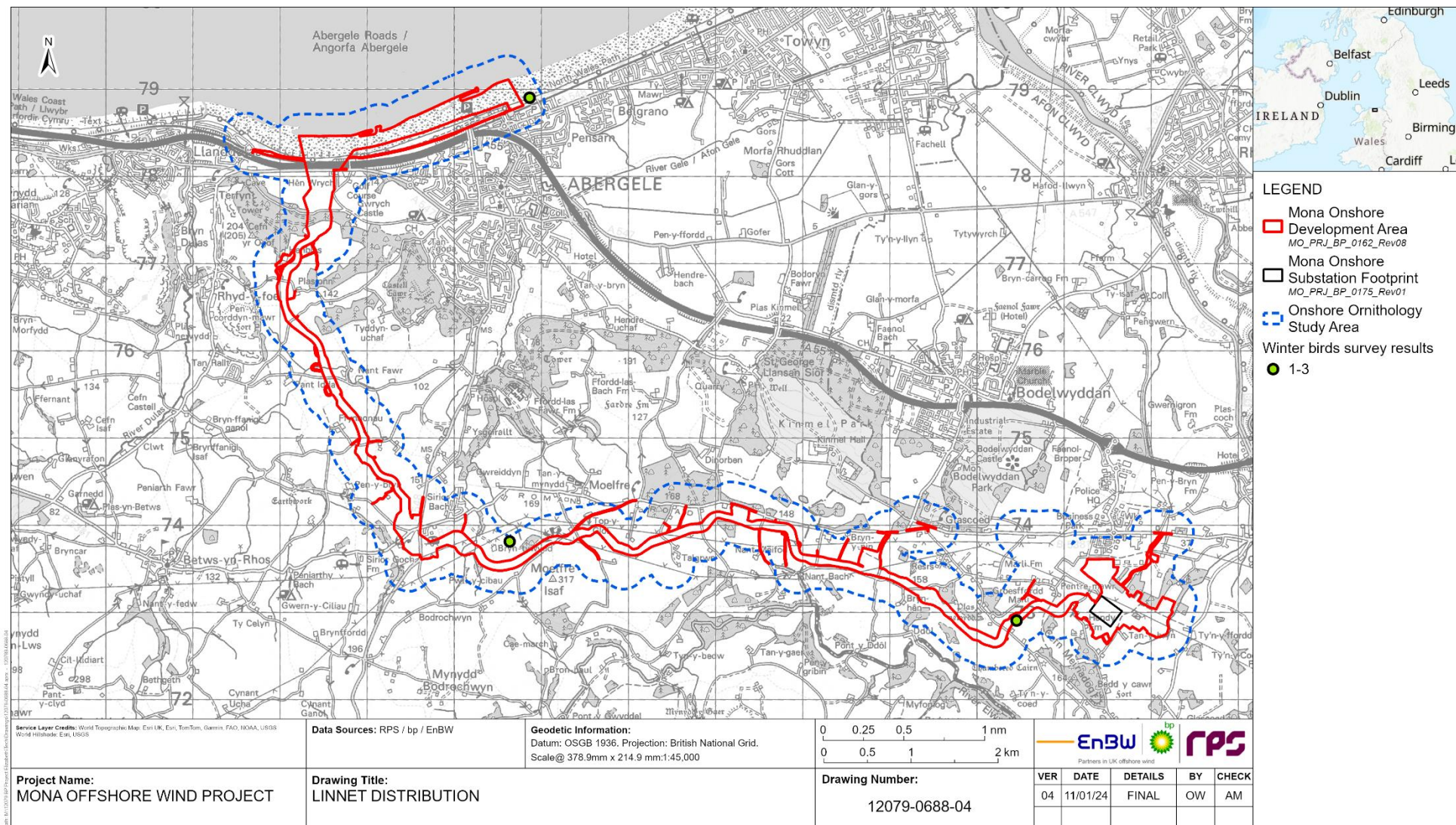


Figure 1.29: Linnet distribution.

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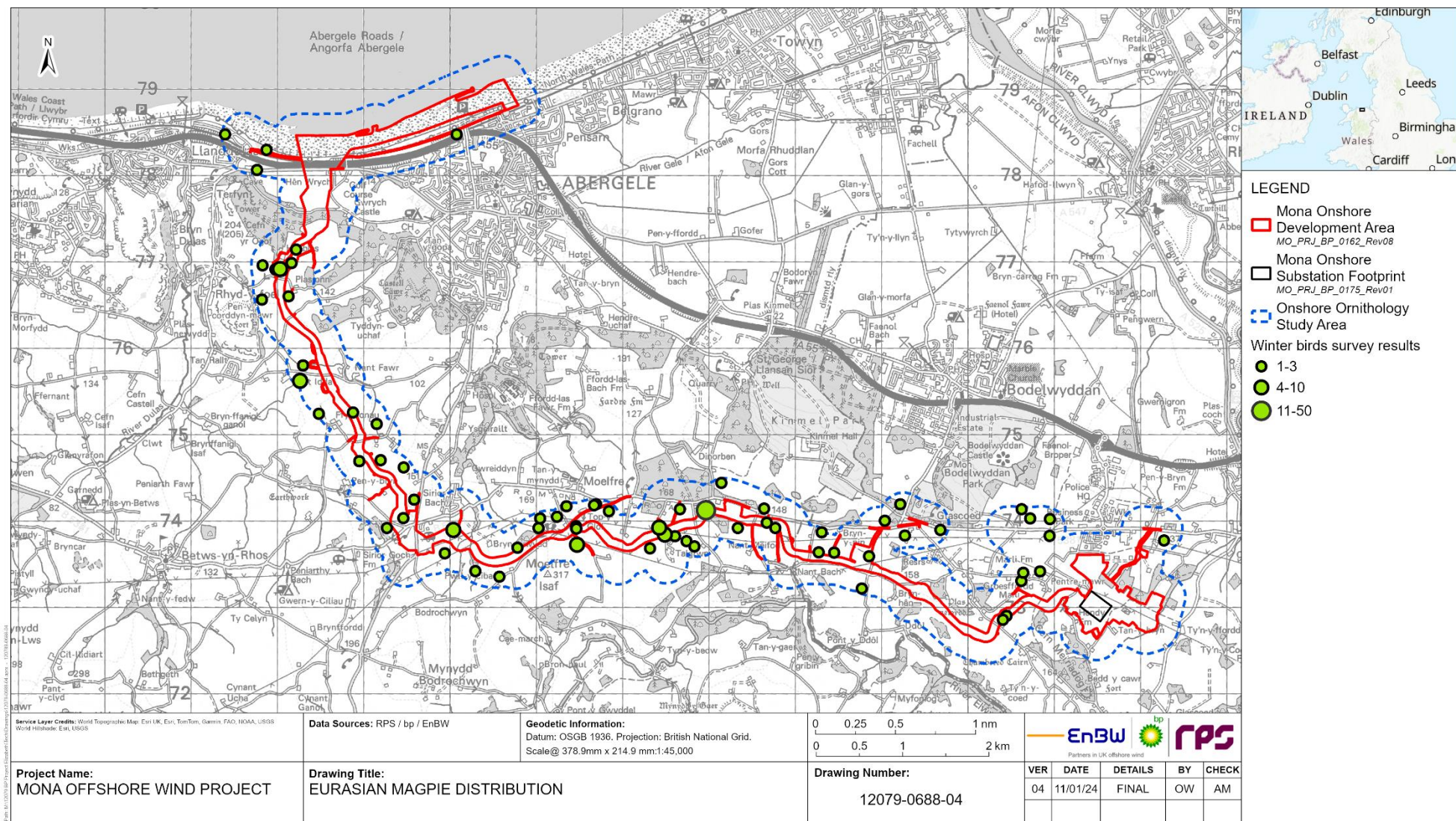


Figure 1.30: Eurasian magpie distribution.

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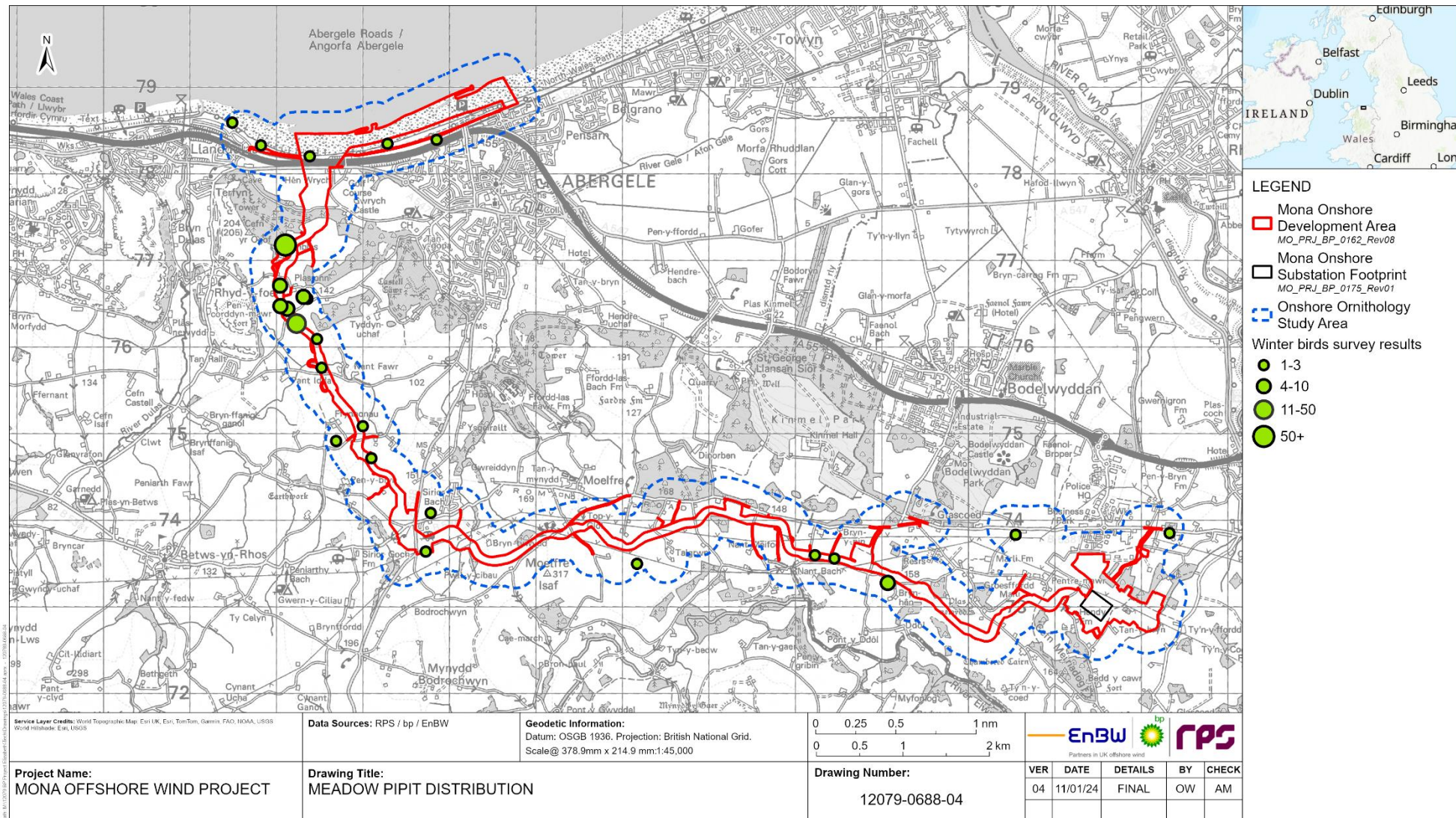


Figure 1.31: Meadow pipit distribution.

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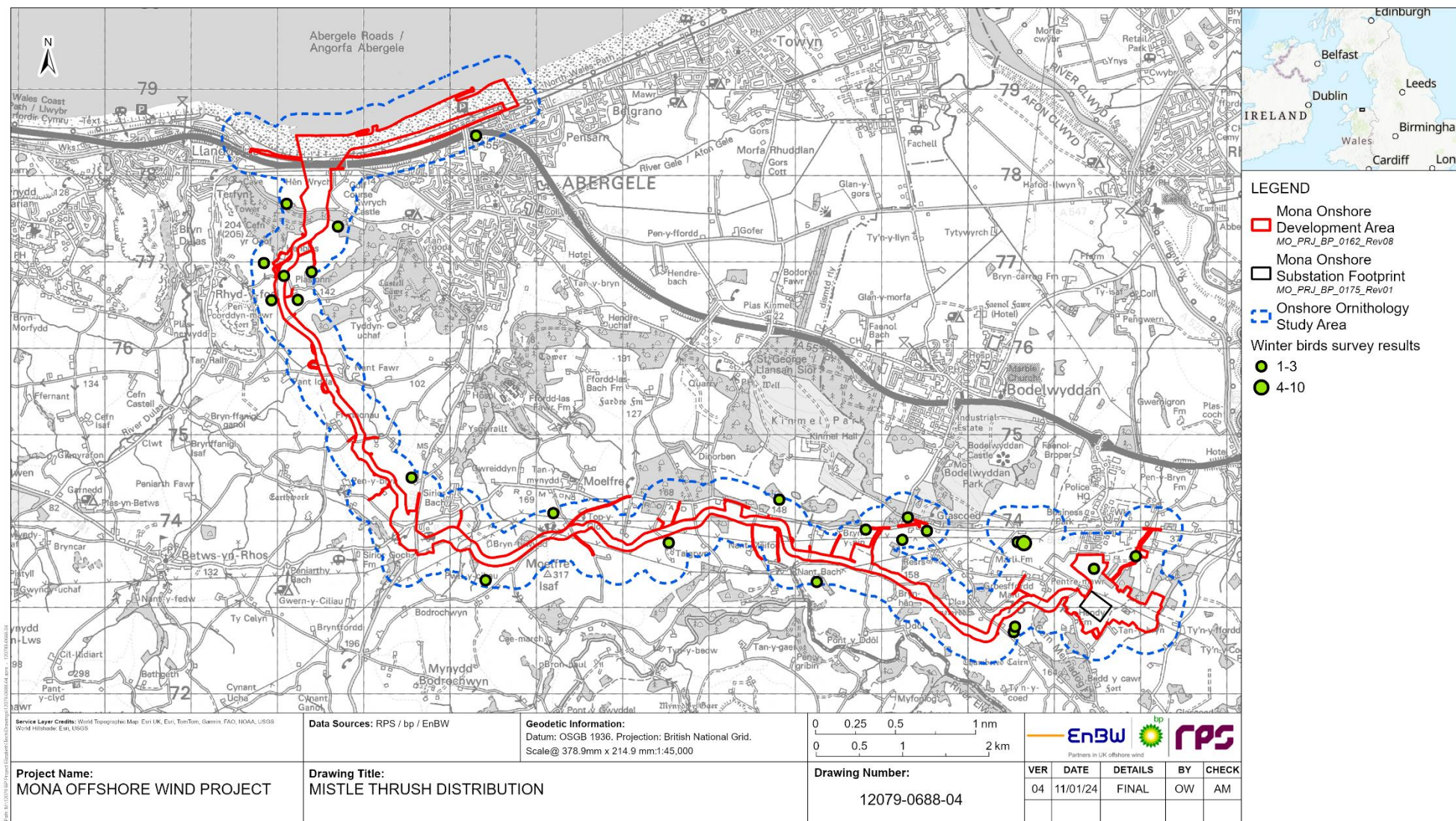


Figure 1.32: Mistle thrush distribution.

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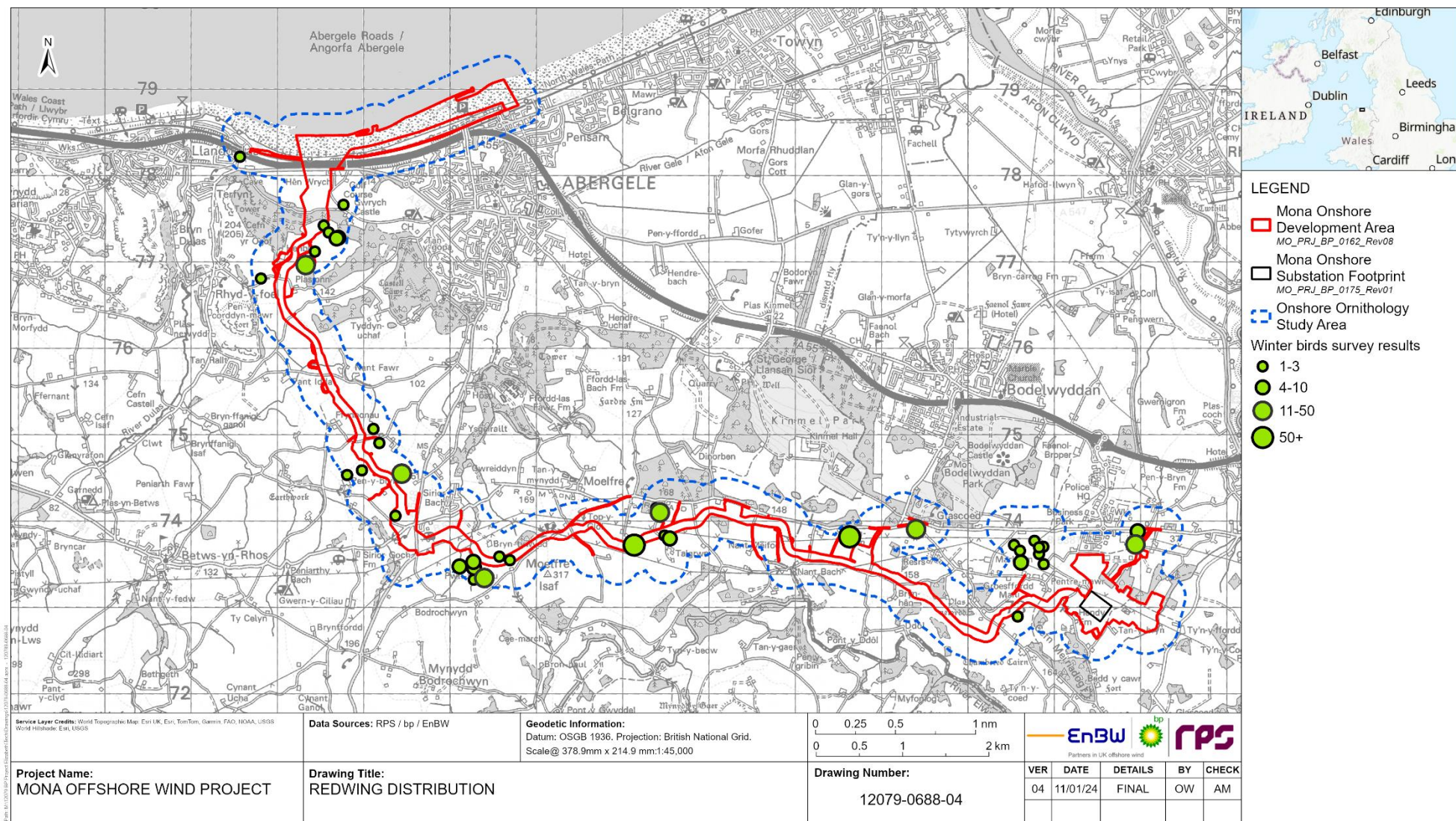


Figure 1.33: Redwing distribution.

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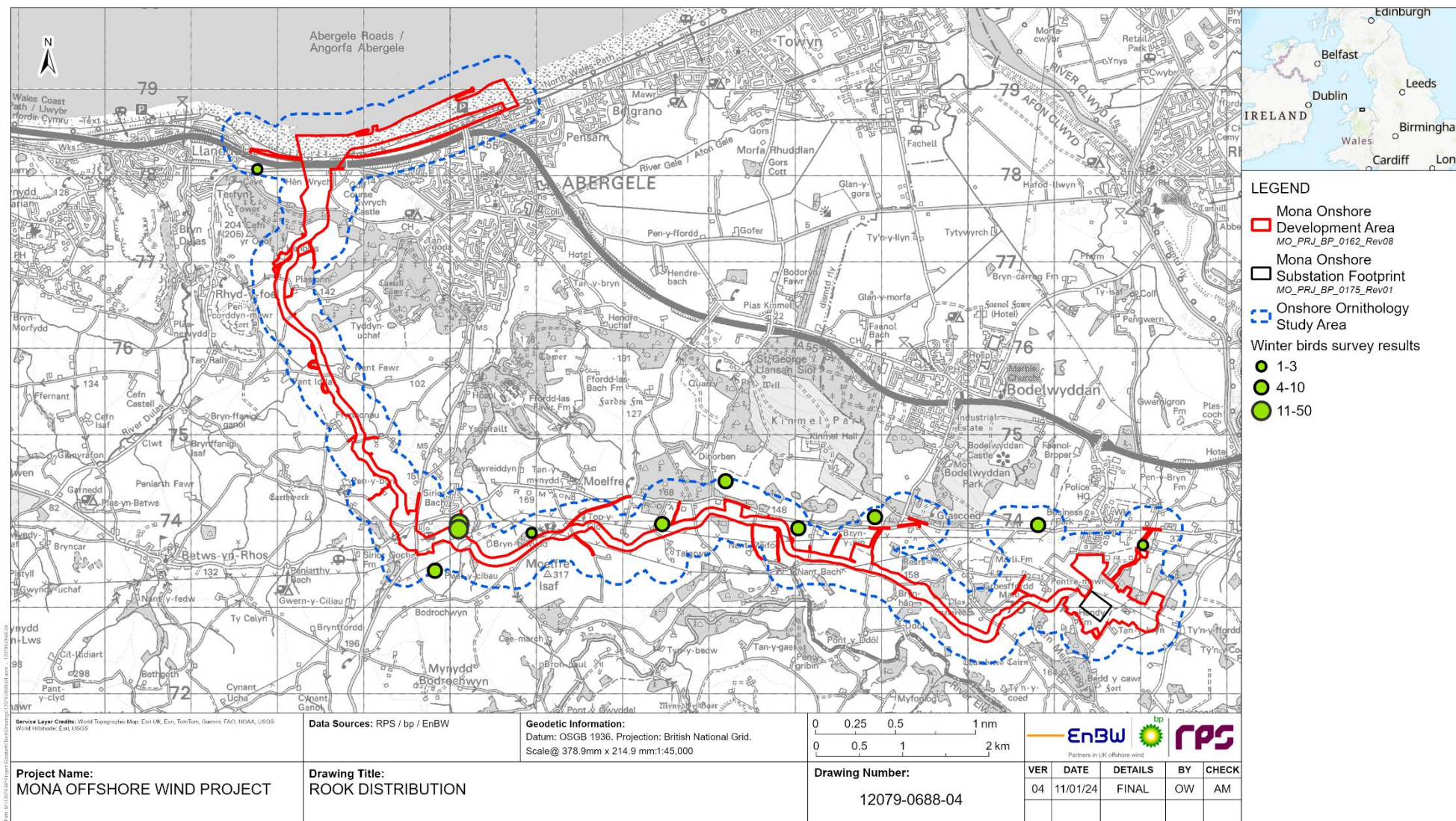


Figure 1.34: Rook distribution.

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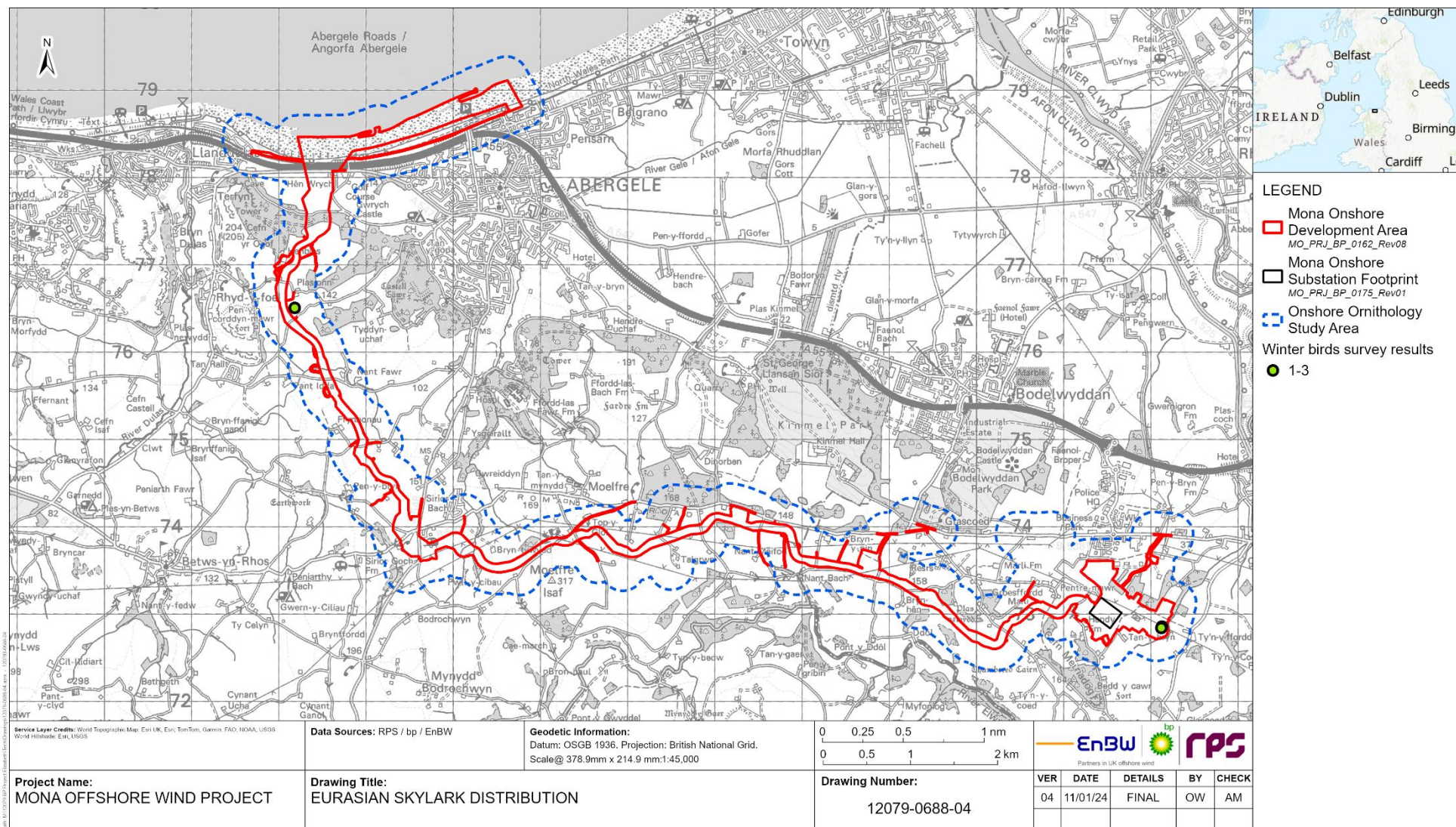


Figure 1.35: Eurasian skylark distribution.

MONA OFFSHORE WIND PROJECT

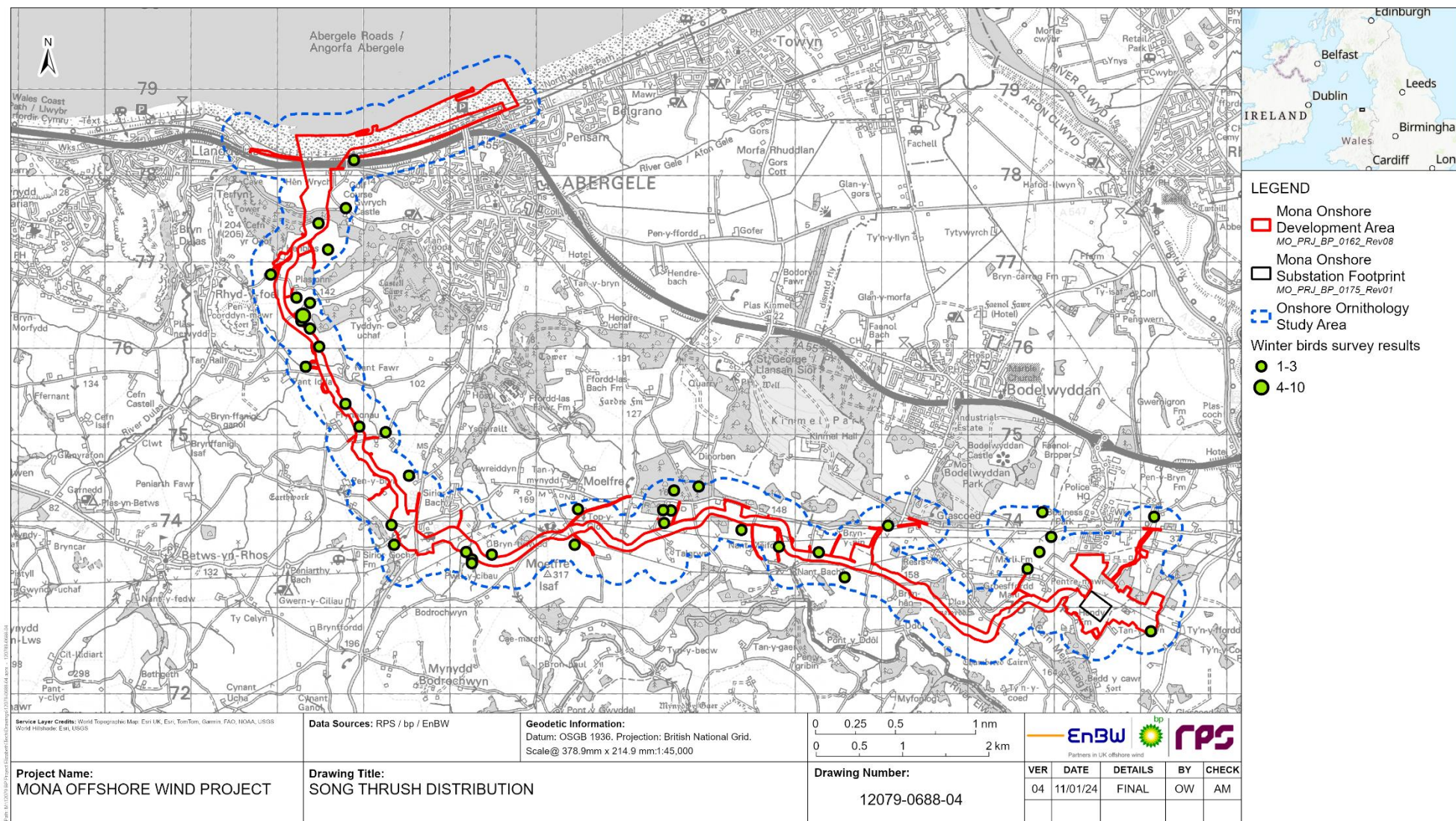


Figure 1.36: Song thrush distribution.

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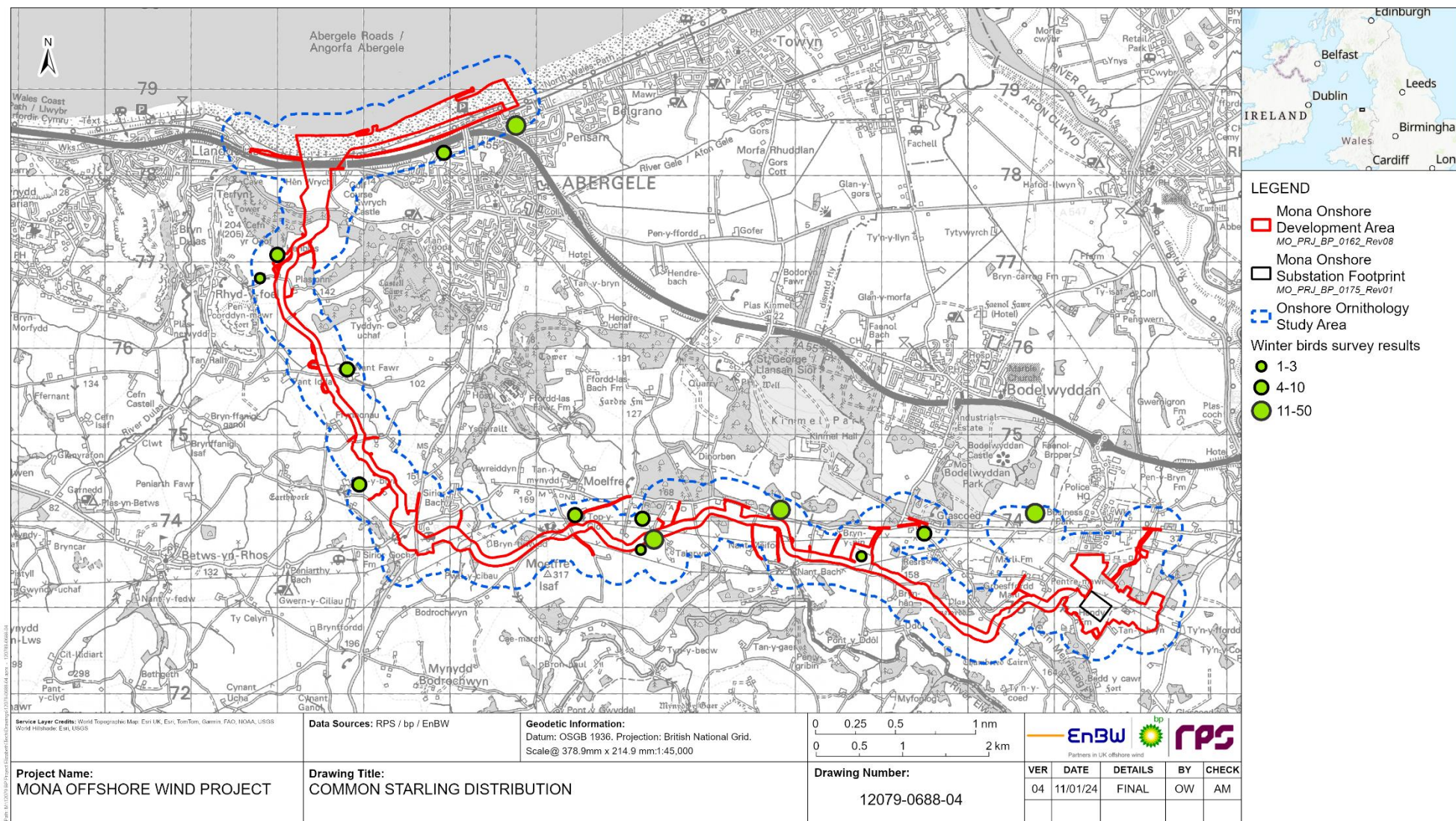


Figure 1.37: Common starling distribution.

MONA OFFSHORE WIND PROJECT

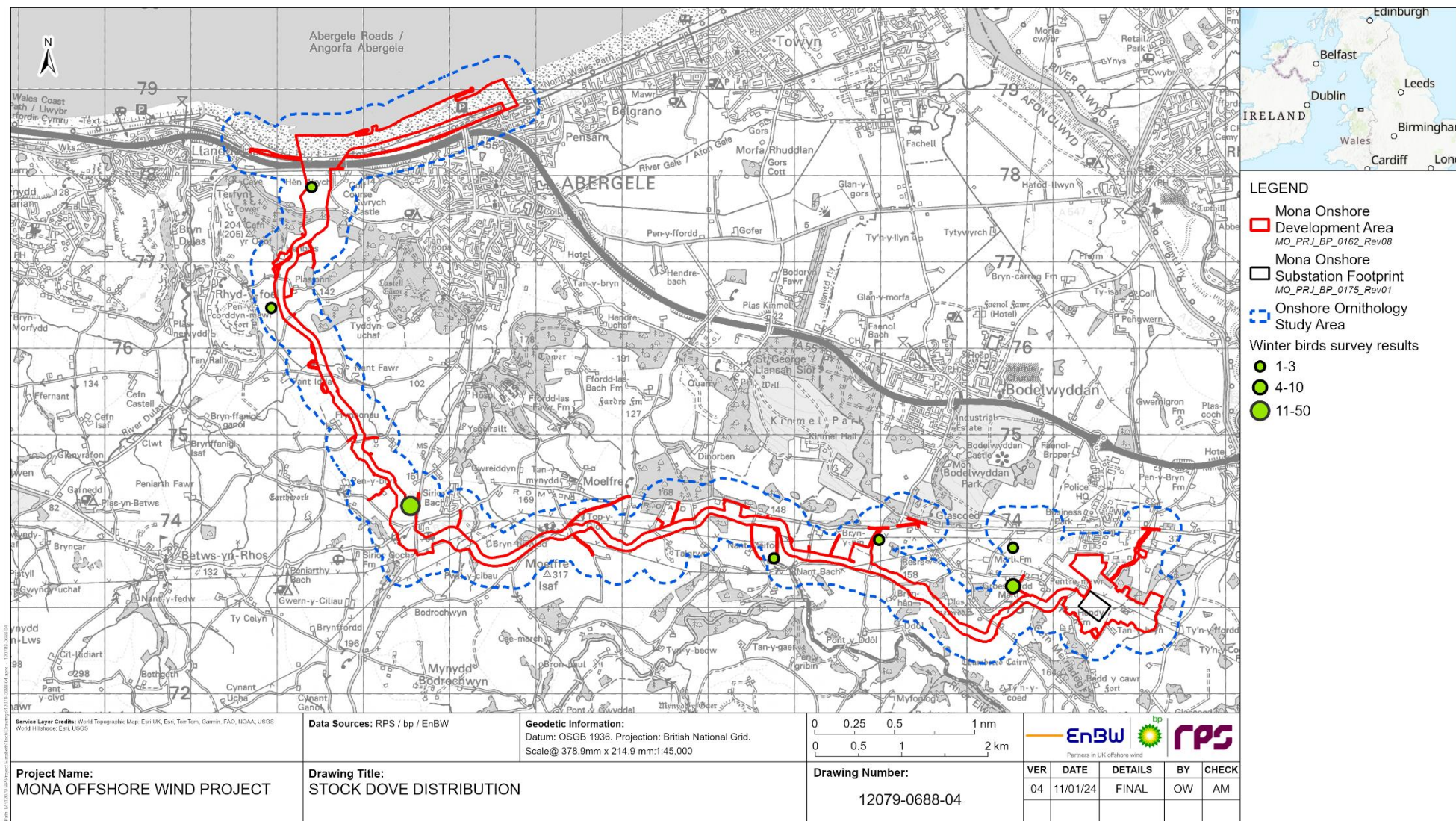


Figure 1.38: Stock dove distribution.

MONA OFFSHORE WIND PROJECT

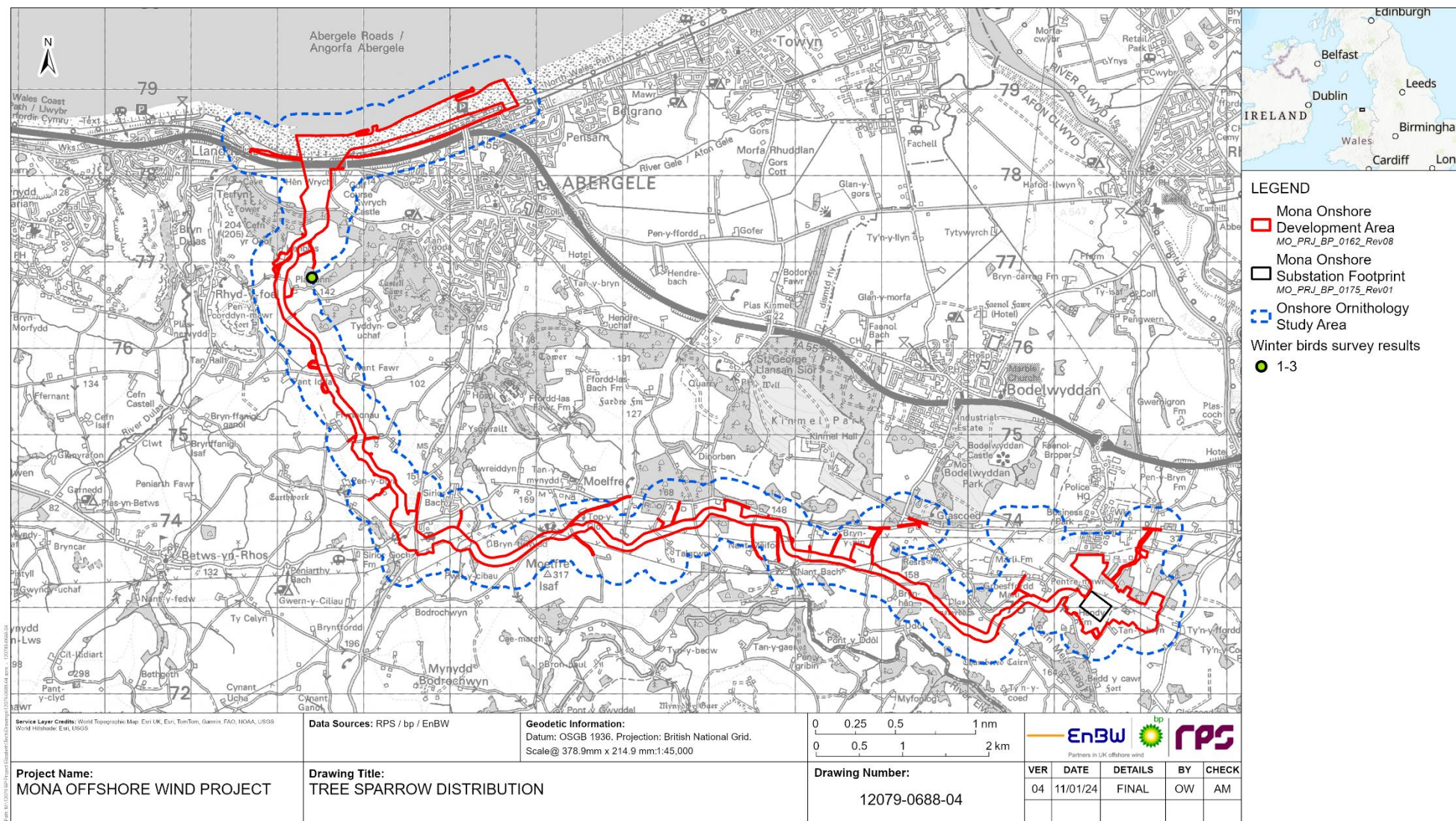


Figure 1.39: Tree sparrow distribution.

MONA OFFSHORE WIND PROJECT

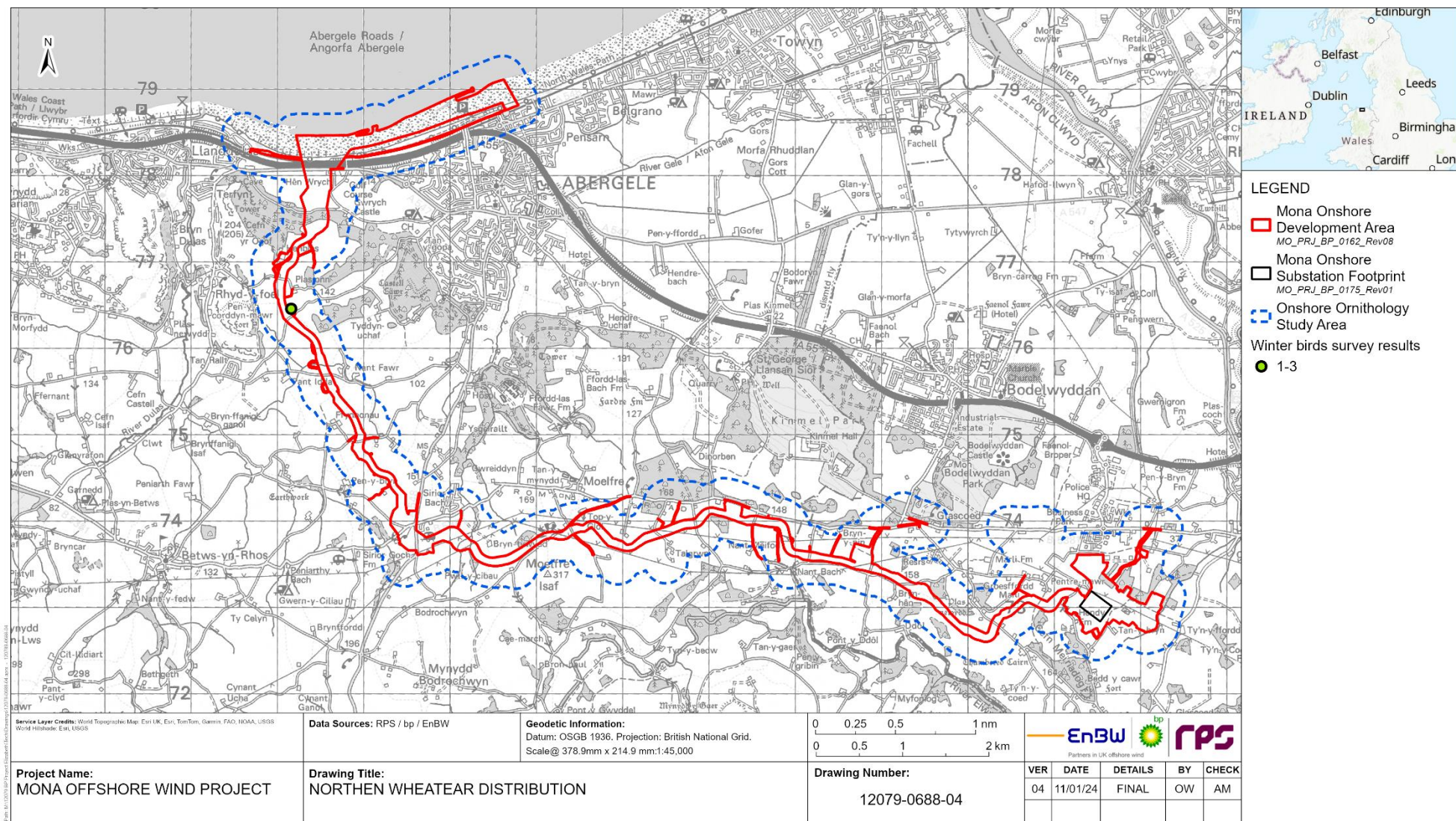


Figure 1.40: Northern wheatear distribution.

MONA OFFSHORE WIND PROJECT

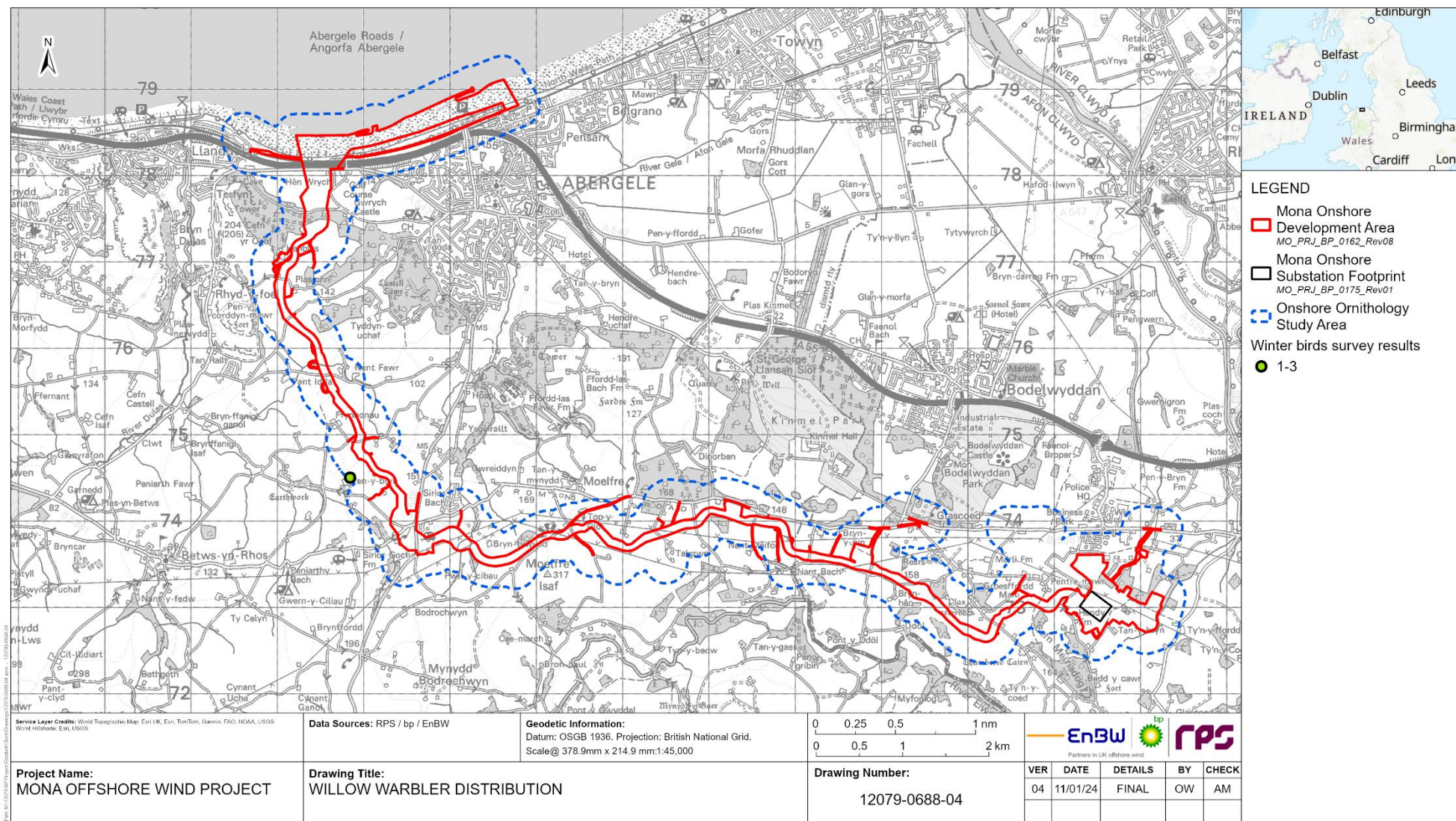


Figure 1.41: Willow warbler distribution.

MONA OFFSHORE WIND PROJECT

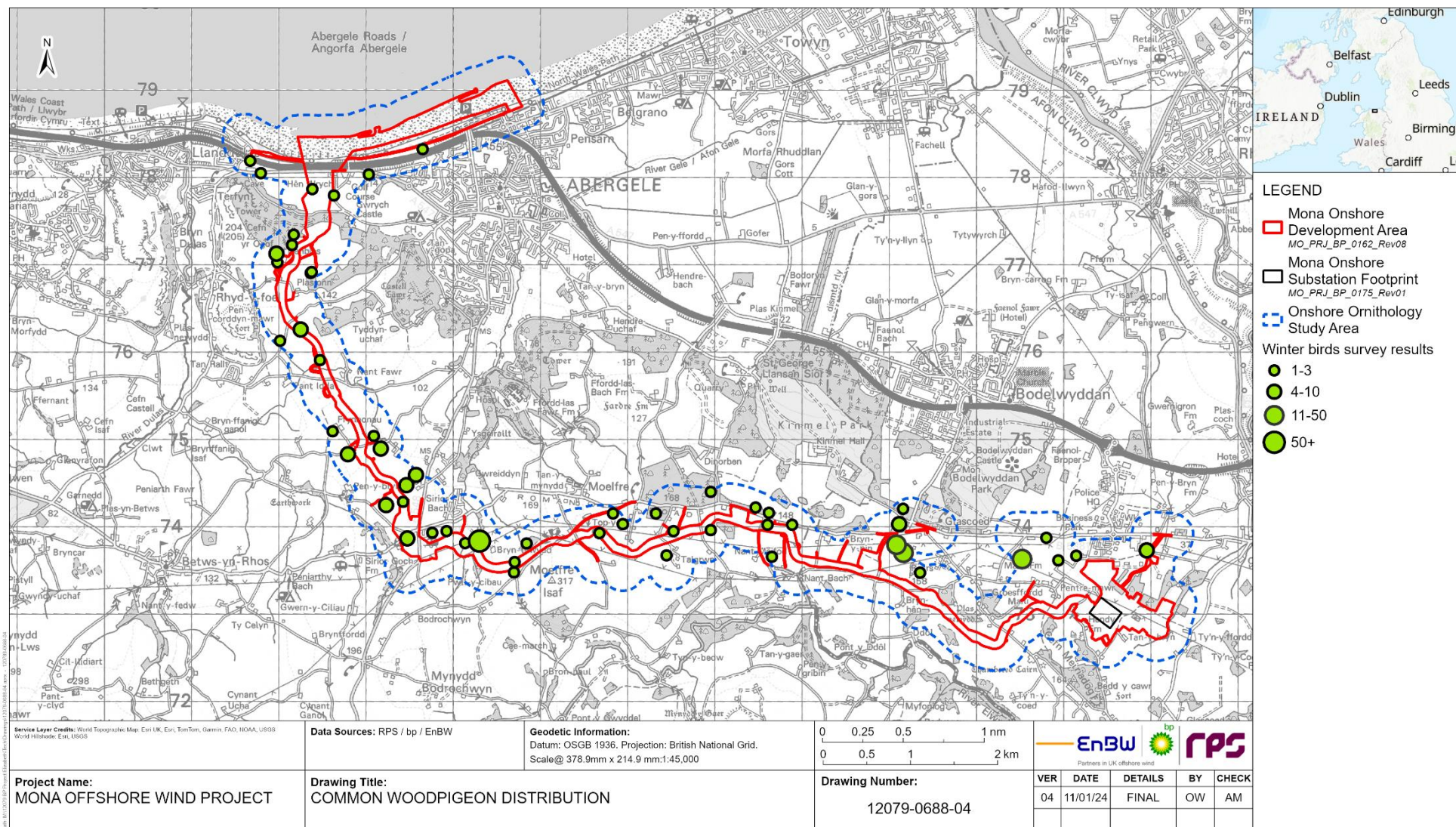


Figure 1.42: Common woodpigeon distribution.

MONA OFFSHORE WIND PROJECT

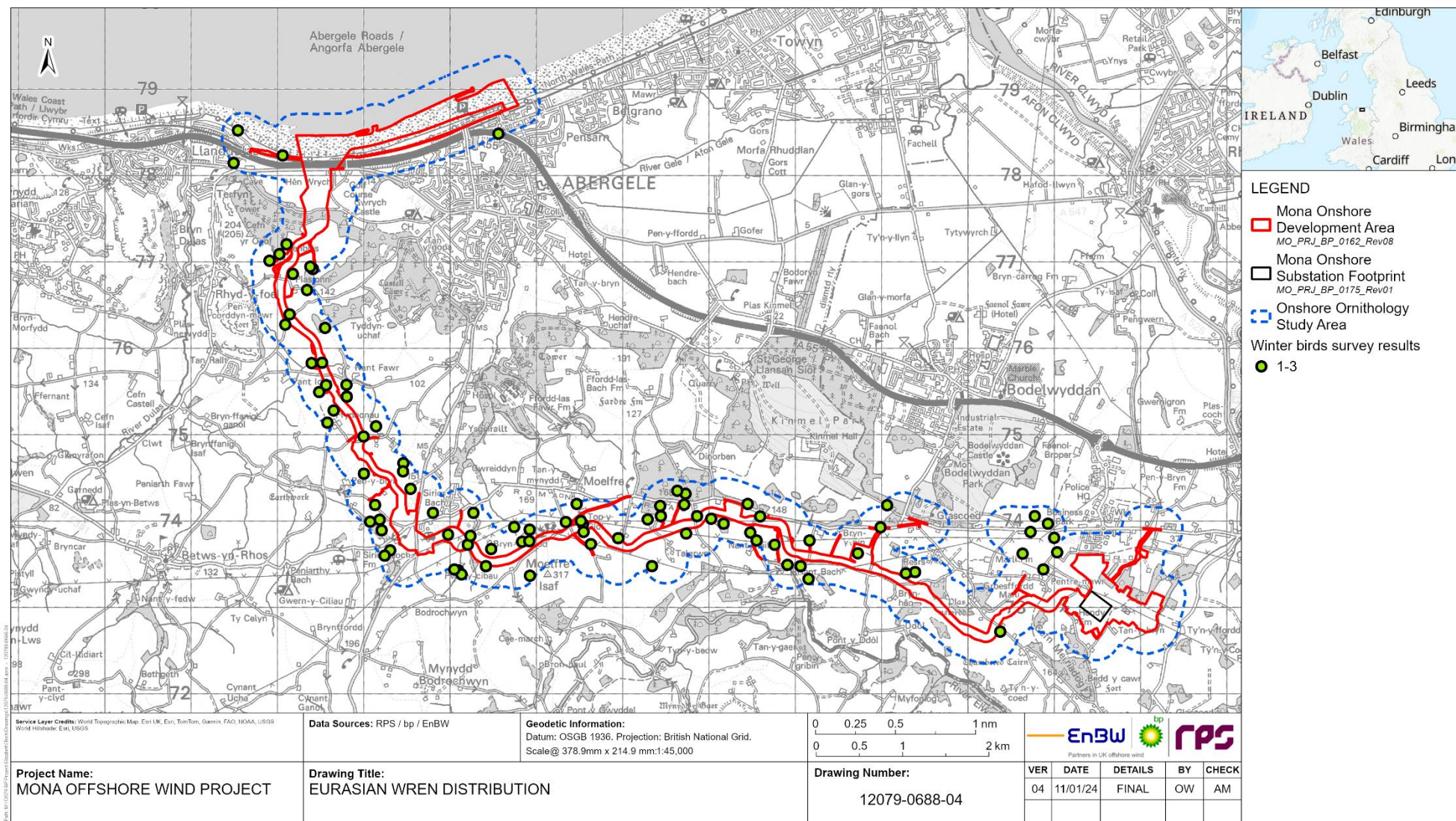


Figure 1.43: Eurasian wren distribution.

MONA OFFSHORE WIND PROJECT

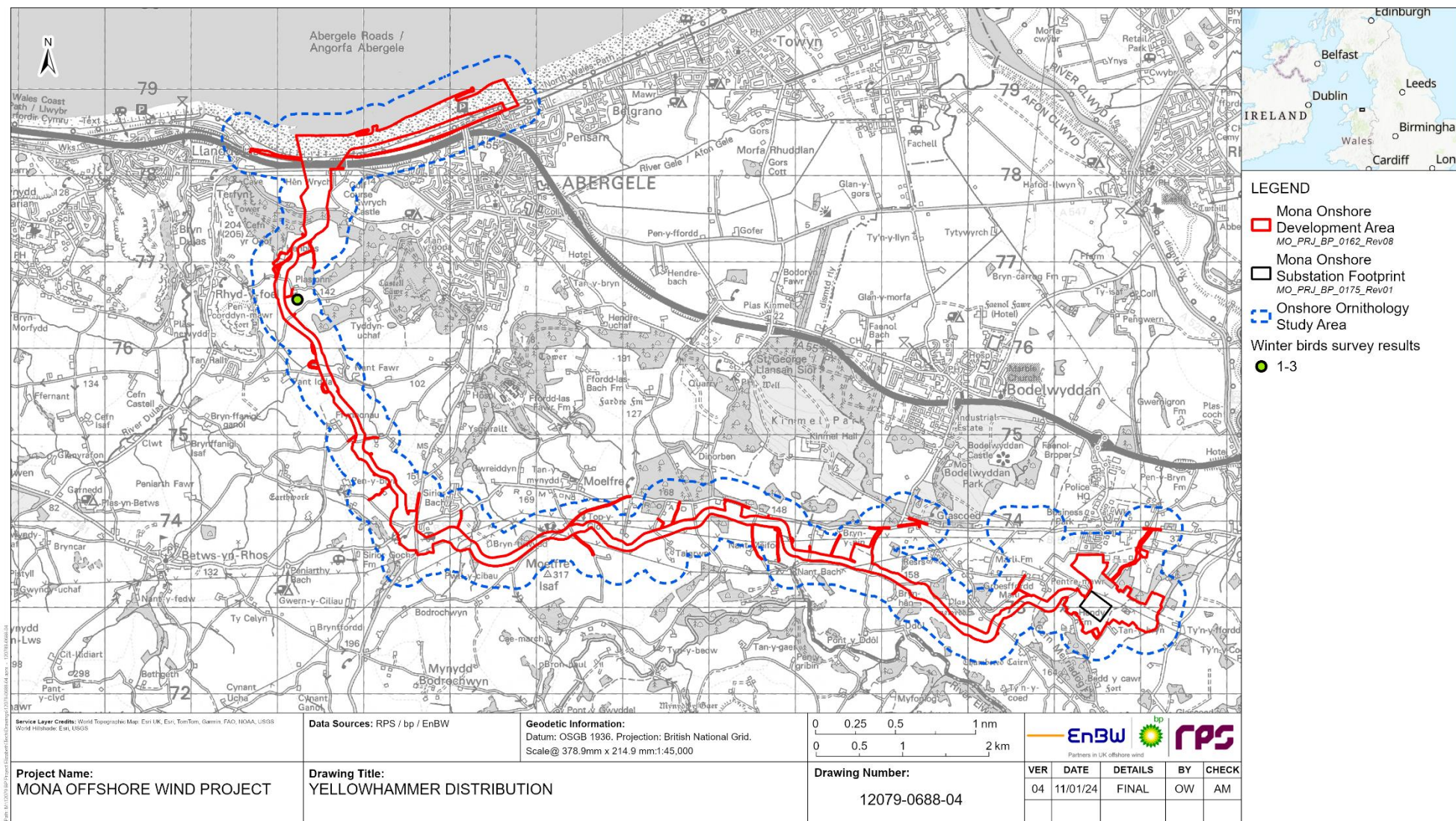


Figure 1.44: Yellowhammer distribution.

1.7 Summary

- 1.7.1.1 This onshore ornithology wintering and migratory birds technical report provides a characterisation of the wintering and migratory bird assemblage for the Mona Offshore Wind Project.
- 1.7.1.2 To establish a baseline of potential wintering and migratory ornithological receptors within the study area a combination of desk-based study and site-specific surveys were undertaken in winter 2022/2023.
- 1.7.1.3 A total of 64 species were recorded during the site-specific surveys within the onshore ornithology study area. Passerines dominated the bird assemblage with a total of 46 species recorded. Other species groups such as waders, gulls and terns were also represented but featured lower number of species.
- 1.7.1.4 Eurasian oystercatcher, Eurasian curlew, and Eurasian teal that are qualifying features of the identified SPAs within the onshore ornithology search area were recorded. Little egret which is listed as an Annex 1 species of the Birds Directive was recorded during a survey visit of the wintering and migratory bird surveys. A total of 12 Section 7 listed species were recorded across all survey visits. This included one wader species, two gull species and nine passerine species. A total of 13 BOCC4 Wales red-listed species were recorded across all survey visits, with the most abundant species being Common starling, herring gull, and meadow pipit. A total of 19 BOCC 4 Wales amber-listed species were recorded across all survey visits.
- 1.7.1.5 This baseline information has been used to inform the assessment reported in Volume 3, Chapter 4: Onshore and intertidal ornithology of the Environmental Statement.

1.8 References

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