



Preliminary Environmental Information Report

Appendix 9A: Wintering Birds Surveys

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9.0 Wintering Birds Surveys

9.1 Introduction

9.1.1 This Appendix presents the results of wintering bird surveys at Future Energy Llanwern in relation to an application for a Development Consent Order (DCO) for the installation of Solar photovoltaic (PV) panels. The surveys were commissioned by Future Energy Llanwern Ltd.

9.1.2 The area within the PEIR Assessment Boundary is hereafter referred to as the 'Site'

Aims

9.1.3 The aims of this report are to:

- Describe the methods used for collecting ecological baseline data;
- Identify the presence or likely absence of SPA assemblage birds and other notable birds within the Site boundary during the winter period, based on desk study data, field data or assumptions based on the information available.

9.2 Legislation and Guidance

Birds Directive

9.2.1 The European Union (EU) meets its obligations to the protection of bird species under the Bern (79/409/EEC) and Bonn conventions and under the EU Directive 2009/147/EC 'The Birds Directive' (the codified version of Council Directive 79/409/EEC, as amended). This provides protection to certain birds at an international level. In England and Wales, provisions of the EU 'Birds Directive' are implemented under the Conservation of Habitats and Species Regulations 2017 (as amended). Species listed on Annex 1 of the Directive are those for which the UK Government is required to take special conservation measures (including the designation of land as Special Protection Areas (SPAs)) to conserve populations of these species throughout their distributions.

Wildlife and Countryside Act 1981 (as amended)

9.2.2 Birds are also protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended). This protection was extended by the Countryside Rights of Way (CRoW) Act 2000.

9.2.3 In summary; all birds, their nests and eggs are protected by law and it is therefore an offence, with certain exceptions, to:

- Intentionally kill, injure or take any wild bird;
- Intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built;
- Intentionally take or destroy the egg of any wild bird;
- Have in one's possession or control any wild bird, dead or alive, or any part of a wild bird, which has been taken in contravention of the Act or the Protection of Birds Act 1954;
- Have in one's possession or control any egg or part of an egg which has been taken in contravention of the Act or the Protection of Birds Act 1954;
- Use traps or similar items to kill, injure or take wild birds;
- Have in one's possession or control any bird of a species occurring on Schedule 4 of the Act unless registered, and in most cases ringed, in accordance with the Secretary of State's regulations (see Schedules).

9.2.4 In addition, certain species are listed on Schedule 1 of the WCA and receive special protection under Sections 1(4) and 1(5), which confer penalties where the abovementioned offences are committed, in addition to making it an offence to:

- Intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

9.2.5 As this legislation relates to offences and penalties during the breeding season only, further reference to Schedule 1 of the WCA is not made in this report.

Birds of Conservation Concern

- 9.2.6 The surveys were conducted under the Birds of Conservation Concern lists: UK BoCC4 and Welsh BoCC3, which were the standard when the surveys began during 2019. These two lists were updated to the UK BoCC5 (Stanbury et al., 2021) and Welsh BoCC4 (Johnstone et al., 2022), where possible, the dataset has been updated to reflect these changes to the lists.
- 9.2.7 The lists assess the conservation status of national bird species using a well-established standardised approach resulting in three increasing levels of concern: Green, Amber and Red. **Table 9A-1** gives the criteria for each category; this criteria is the same for both UK and Welsh lists.

Table 9A-1 Birds of Conservation Concern 4 criteria

Criteria	Selection criteria
Red list	IUCN: Globally Threatened (Critically Endangered; Endangered or Vulnerable). Historical decline in the breeding population: severe breeding population decline over 25 years/longer term. Severe non-breeding population decline over 25 years/longer term. Severe breeding range decline over 25 years/longer term.
Amber list	ERLOB: Threatened in Europe (Critically Endangered, Endangered, or Vulnerable). Historical decline – recovery. Moderate breeding population decline over 25 years/longer term. Moderate non-breeding population decline over 25 years/longer term. Moderate breeding range decline over 25 years/longer term. Moderate non-breeding range decline over 25 years. Breeding/non-breeding rarity. Breeding/non-breeding localisation.
Green list	Species considered least threatened i.e. do not qualify for either Red or Amber criteria.

- 9.2.8 The above legislation and conservation status criteria are used to assign the appropriate conservation status to all bird species recorded during surveys presented in the results of this report. Species referred to collectively as ‘species of conservation concern’ fall into one or more of the categories described above with the exception of ‘Green listed’ species alone.

9.3 Methods

Desk Study

- 9.3.1 The South East Wales Biodiversity Records Centre (SEWBRc) were consulted in

January 2024 which included a search for sites designated for nature conservation value and records of protected and notable species within 2km of the Site boundary.

- 9.3.2 Data was also requested from the British Trust for Ornithology (BTO). This included Monthly Core Counts at Redwick, Undy and Magor Reserve during 2014-2018.

Winter Bird Survey

Survey Scope

- 9.3.3 Surveys were undertaken over all fields within the proposed solar scheme hereafter referred to as the “Survey Area”.
- 9.3.4 Prior to the survey, all fields were numbered. The Survey Area was originally subdivided into twelve sections with a diurnal transect route and a nocturnal transect route drawn. Since the inception of the project, there have been a number of revisions to the site boundary and the Survey Area which have led to Sections 1, 4, 7, 8 and 12 being removed from the site boundary and with a substantial reduction in the total area of Section 2.
- 9.3.5 Bird species that use the farmland for foraging and roosting are considered the key species of concern with regards to impacts from land taken by solar panels, especially overwintering waders and wildfowl that are listed in the Severn Estuary SPA designation. Therefore, the survey method was based on the British Trust for Ornithology (BTO) Wetland Bird Survey (WeBS) methodology as described in Gilbert *et al.* (1998). The survey used the ‘look-see’ methodology where the surveyor walked a transect stopping and scanning for birds at regular intervals to record numbers of all waterbird species (as defined by Wetlands International, Rose & Scott, 1997) for a predefined area.
- 9.3.6 Surveys were undertaken in autumn and winter initially during two consecutive seasons, 2019-20 and 2020-21 with a follow up season in 2022-23 to generate up to date information.
- 9.3.7 Survey dates and timings are detailed in **Annex B**, with further details provided below.

Diurnal surveys

- 9.3.8 Each transect route was subject to two survey visits per month from November to February, with four visits in October and March to cover the passage months. Based on the methodology for census of lowland waders (Gilbert *et al.*, 1998¹); half the surveys in each month coincided with high tide and half around low tide.
- 9.3.9 Experienced surveyors walked the transect routes, stopping regularly to scan and record birds on to field maps of at least 1:10,000 scale, using standard British Trust for Ornithology (BTO) species and activity codes (Marchant, 1983). Birds observed within 50m of the study area were also recorded. Special attention was given to undertaking counts of any notable assemblages of feeding and/or roosting birds.
- 9.3.10 Bird species recorded during the field surveys were those included on any of the conservation status categories described in **Section 9.2**, as well as any species which might be relevant in a local context (i.e. species which could potentially be present in significant numbers). Other more common species e.g. Green listed or introduced/feral species were recorded as present but not mapped.
- 9.3.11 Where surveyor availability and weather conditions allowed, surveys of all sections were undertaken on two consecutive mornings. Where possible surveys were undertaken in suitable weather conditions, in good visibility, avoiding strong winds above Force 4 (Beaufort Scale) and heavy rain. Weather conditions are also provided in **Annex B** and exceptions noted in **Section 9.3.24** and **Table 9-3**.

Nocturnal Surveys

- 9.3.12 Nocturnal surveys were undertaken once per month at high tide between October and March to record species, particularly waders, which may move and feed in the hours of darkness in response to tidal influence.
- 9.3.13 Surveyors walked the nocturnal transects routes, stopping at indicated locations on the transect route to scan the field with a thermal imaging camera. If nothing was picked up with thermal imaging, a high-powered searchlight and binoculars were

¹ Gilbert G., Gibbons D.W. and Evans J. (1998) *Bird Monitoring Methods: A manual of techniques for key UK species*. RSPB, Sandy.

used to scan the field again. All bird species seen were recorded on a recording form and on to a map including owls and cryptic species (such as woodcock).

- 9.3.14 Where possible, the transects were carried out concurrently or on consecutive nights in weather conditions that favoured the survey (in particular avoiding fog or heavy rain). Weather conditions are provided with those for the diurnal surveys in **Annex B**.

Data Analysis

Overview

- 9.3.15 In order to assess the importance of the wintering bird populations recorded during the field surveys, interpretation of the survey results considered the following:
- the conservation statuses of the species recorded (i.e. their inclusion on any of the legislation or conservation status categories described in **Section 9.2**);
 - the sizes of the populations recorded (i.e. species abundance);
 - the spatial patterns of wintering bird usage within the site, including areas and habitat types of particular importance to wintering birds;
 - the overall diversity of the wintering bird assemblage recorded.
- 9.3.16 To avoid the data being skewed by birds commuting or migrating over the Site, only birds that were recorded on the ground, in hedgerows or trees and birds on waterbodies are included in this report. Raptors which forage in flight such as kestrel were also included as 'using the Site'.

Species Abundance

- 9.3.17 The importance of the wintering bird populations recorded was assessed in the context of the sizes of those populations relative to international, national and Welsh population estimates for the species in question. 1% population thresholds (i.e. the size at which a population is assessed as being of national importance, as it comprises over 1% of the national population for a given species) were calculated

from the population estimates as described by BTO².

Functionally Linked Land

9.3.18 The Site is immediately adjacent to the Severn Estuary Ramsar/SPA protected site for birds, as such, there is potential for there to be Functionally Linked Land as defined by Bowland Ecology (2021):

“Functionally linked land’ (FLL) is a term often used to describe areas of land or sea occurring outside a designated site which is considered to be critical to, or necessary for, the ecological or behavioural functions in a relevant season of a qualifying feature for which a Special Areas of Conservation (SAC)/ Special Protection Area (SPA)/ Ramsar site has been designated. These habitats are frequently used by SPA species and supports the functionality and integrity of the designated sites for these features.”

9.3.19 As a guide, an area of land adjacent to a protected area that regularly supports 1% or more of the average SPA population of that species can be considered as Functionally Linked Land, though consideration should also be given to land that is regularly used by low numbers of any of the species for which the SPA is designated.

9.3.20 To assess whether the land could be considered functionally linked to the SPA:

- the data was filtered for birds that are part of the SPA citation. The ‘assemblage’ was assessed as any waterbird recorded in the WeBS counts. To be conservative this included rails and woodcock;
- the data was filtered to remove birds offsite. Birds recorded within reens were kept; and,
- the data was filtered to remove birds in flight.

9.3.21 This data was compared to the WeBS ‘moving 5-year average’ 2023 – 2024 (Calbrade et al., 2025³). FLL is considered where the peak mean regularly exceeds

² <https://www.bto.org/our-science/projects/wetland-bird-survey/data/species-threshold-levels>

³ Calbrade, N.A. et al. (2025) *Waterbirds in the UK 2023/24: The Wetland Bird Survey and Goose & Swan Monitoring Programme*. BTO/RSPB/JNCC/NatureScot. Thetford.

1% of the moving 5-year average.

9.3.22 The method used to assess FLL entailed:

- For each survey period (e.g. October – March), the peak count across the entire site on **any single survey date** was taken. The peak count may include multiple fields, where birds were recorded simultaneously during transects on the same day;
- Where the mean peak exceeds 1%, further assessment into the regularity of use of the site/ individual fields by waterbirds was made.

9.3.23 **Table 9A-2** below shows the five-year population average from the WeBS counts from the Severn Estuary for each notable species that form part of the SPA and Ramsar.

Table 9A-2 Populations of SPA and Ramsar birds in the Severn Estuary

Species named within the SPA or Ramsar Designation	Ramsar Designated Species	Ramsar Future Consideration species	SPA Designated Species	Severn Estuary population	Species named within the SPA or Ramsar Designation
Bewick's swan	✓		✓	116	1
White-fronted goose	✓		✓	187	2
Dunlin	✓		✓	27,695	277
Redshank	✓		✓	4,432	44
Shelduck	✓		✓	7,696	77
Gadwall	✓		✓	240	2
Teal		✓ winter		4,640	46
Pintail		✓ winter		798	8
Ringed plover		✓ spring/autumn		1,154	12
Lesser black-backed gull		✓ breeding season		3,605	36
Waterbird assemblage				93,578	936
Waterbird assemblage				78,096	781

Assemblage Importance

- 9.3.24 Assessment of county, district or local importance was based on professional judgement and in reference to county population data gathered from local annual bird reports.
- 9.3.25 In addition to species that are part of the SPA designation, the abundance and distribution of lapwing, meadow pipit and skylark were also mapped as these can be present all year around and rely on areas of open habitat (e.g. pasture) for winter forage and therefore will be the most affected by solar panel arrays.

Limitations

- 9.3.26 Care has been taken to ensure that balanced advice is provided on the information available and collected during the study period(s), and within the resources available for the project. However, the possibility of important ecological features being missed due to survey timings, absence during surveys or the year of survey cannot be ruled out.
- 9.3.27 The PEIR Assessment boundary went through several iterations throughout the course of the project, meaning that some additional areas added and some areas no longer within the boundary. All panelled areas were however subject to a minimum of three seasons surveys.
- 9.3.28 Desk study data, with as much confidence as possible, is from 2009 onwards but the format of the date in the records was variable with some records only providing a year but with others stating “3 records, all from 2014” or “6 records, between 1975 and 2020”. These records were included in this report to ensure that no potentially important records were omitted. In addition, bird records will always be focussed on areas of greatest appeal (i.e. nature reserves) or places of easy access. Therefore, absence of records from the Site does not necessarily mean that the species is absent from the Site.
- 9.3.29 Carrying out surveys at specific tidal states during the short days of winter imposed some restrictions and some surveys were carried out in suboptimal weather

conditions, see **Table 9A-3**. Occasional light rain, fog and wind encountered during the surveys was considered to be insufficient to significantly affect the bird populations recorded and represents a true reflection of normal bird behaviours during the winter period.

Table 9A-3 Weather limitations

Weather type	Number of surveys	Surveys years affected	Notes
Light rain	17	2019, 2020, 2022	Usually showers, sometimes light rain throughout
Strong winds	3	2020, 2022	Winds of speeds of over Beaufort 4
Fog/Mist	5	2019, 2021, 2022	Usually just at start of survey

9.3.30 Much of the Site is currently managed as pastoral farmland. Surveyors deviated from the planned survey route when livestock were deemed dangerous for safe access to fields. In these circumstances, fields were observed from the field gate or from the vantage point provided by the sea wall and therefore not likely to have significantly affected the validity of results.

9.4 Results

Desk Study

Designated Sites

Ramsar

9.4.1 The Site is 20m north of Severn Estuary RAMSAR site.

9.4.2 The Convention on Wetlands of International Importance, called the Ramsar Convention, is the inter-governmental treaty that provides the framework for the conservation and wise use of wetlands and their resources. The Severn Estuary is designated as a Ramsar Site for features which meet Criteria 1, 3, 4, 5, 6 and 8 of the revised criteria used on the JNCC website (2005).

9.4.3 The ornithological interest features are

- Ramsar Criteria 5 - Assemblages of international importance: species with peak counts in winter:

- 70,919 waterfowl (5 year peak mean 1998/99 – 2002/03)

9.4.4 Ramsar Criteria 6 – species/ populations occurring at levels of international importance.

- Qualifying species/ populations (as identified at designation):
 - Species with peak counts in winter:
 - Tundra swan (Bewick’s swan)
 - Greater white-fronted goose
 - Common shelduck
 - Gadwall
 - Dunlin
 - Common redshank.
 - Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - Lesser black-backed gull.
 - Species with peak counts in spring/ autumn:
 - Ringed plover.
 - Species with peak counts in winter:
 - Eurasian teal.
 - Northern pintail.

National Site Network

9.4.5 The Severn Estuary SPA qualifies under:

- Article 4.1 of the ‘Birds’ Directive (79/409/EEC) by supporting over winter populations of International importance of Bewick's Swan which is listed on Annex I of the Directive;

- Article 4.2 of the Directive (79/409/EEC) by supporting populations of International importance of the following migratory species: white-fronted goose, dunlin, redshank, shelduck, gadwall, curlew*, pintail* and ringed plover*⁴;
- Article 4.2 of the Directive (79/409/EEC) by, overwintering, regularly supporting over 20,000 individual waterfowl including: Bewick's swan, white-fronted goose, dunlin, redshank, shelduck, gadwall, wigeon, teal, pintail, pochard, tufted duck, ringed plover, grey plover, curlew, whimbrel, spotted redshank, lapwing*, mallard* and shoveler*.

Statutory Designated Sites

- 9.4.6 Three areas of the Site are covered by the Gwent Levels – Redwick, Whitson, Nash & Goldcliff, Magor and Undy and Llandeenny SSSIs, which are designated for reed and ditch habitats, insects and other invertebrates including the shrill carder bee. It is not designated for ornithological reasons and not considered further within this report.
- 9.4.7 Magor Marsh SSSI (& Wildlife Trust Nature Reserve) lies adjacent to the north-eastern section of the Site and is an important site for breeding water and marsh birds.
- 9.4.8 Newport Wetlands SSSI lies to the west of the Site and is important for reeds and ditches, overwintering shoveller and black-tailed godwit and breeding water and marsh birds.

Non Statutory Sites

- 9.4.9 There are 15 SINCs within 2km of the Site boundary. The closest is Elver Pill Reen & Grassland, a lagoon with a mosaic of swamp and neutral grassland. SINCs that are specifically described as being of value to birds are detailed in **Table 9A-4**.

⁴ * These species were not listed in the original citation, added during the 2001 SPA Review but subsequently removed on the Natura 2000 form in 2006

<https://naturalresources.wales/media/673887/severn-estuary-sac-spa-and-ramsar-reg-33-advice-from-ne-and-ccw-june-09.pdf>

Table 9A-4 SINC's within 2km of the Site Boundary pertaining to birds

SINC	Location from Site Boundary	Value to birds
Elver Pill Reen Grassland & Pond	Directly adjacent to N Row along north of Site	Supports Cetti's warblers [Also know to support breeding Crane]
Bridewell Common Field (also a Wildlife Trust Nature Reserve)	0.3km north of Site	Supports birds including snipe, stonechat and reed bunting
Gwent Wetland Reserve	0.9km west of Site	Supports internationally important numbers of wildfowl
Greenmoor Pool	1.1km north of Site	Supports bird populations including Cetti's warbler
Land at Barecroft Common	1.5km north of Site	Supports nesting birds including lapwing and curlew
Bowkett Field, Barecroft	1.7km north of Site	The reens, particularly on the eastern edge support mature willow scrub, host many bird species

Species

9.4.10 The data search with SEWBRc returned just under 6,000 bird records from the Site area and the 2km buffer around it. These records however were from a broad time period with the earliest record from 1955 and therefore the results were filtered to include entries from no earlier than January 2009 (i.e. ten years before the surveys started at the Site). Determining whether a record attains to the presence of resident bird species or the influx of migrant species in autumn, the wintering season for birds cannot be precisely defined. There is also overlap with the breeding season and there are also passage species to consider. For the purposes of this report, any records from 1st October to 31st March in any given year were considered to be wintering and any from 1st April to 30th September were considered to be breeding birds (see **Appendix 9B**).

9.4.11 The SEWBRc records contained 135 species of wintering and passage birds from the 2km data search around the PEIR Assessment Boundary, and these are listed in **Table 9A-5** and include a diverse assemblage of wintering waterfowl.

Table 9A-5 Desk Study Results Wintering Birds

Scientific Name	Common Name
<i>Acanthis cabaret</i>	Lesser Redpoll
<i>Accipiter gentilis</i>	Goshawk
<i>Aegithalos caudatus</i>	Long-tailed Tit
<i>Aix galericulata</i>	Mandarin Duck
<i>Alauda arvensis</i>	Skylark
<i>Alcedo atthis</i>	Kingfisher
<i>Alopochen aegyptiaca</i>	Egyptian Goose
<i>Anas acuta</i>	Pintail
<i>Anas crecca</i>	Teal
<i>Anas platyrhynchos</i>	Mallard
<i>Anser albifrons</i>	White-fronted Goose
<i>Anser anser</i>	Greylag Goose
<i>Anser brachyrhynchus</i>	Pink-footed Goose
<i>Anser indicus</i>	Bar-headed Goose
<i>Anser serrirostris</i>	Tundra Bean Goose
<i>Anthus pratensis</i>	Meadow Pipit
<i>Anthus spinoletta</i>	Water Pipit
<i>Ardea cinerea</i>	Grey Heron
<i>Arenaria interpres</i>	Turnstone
<i>Asio flammeus</i>	Short-eared Owl
<i>Aythya farina</i>	Pochard
<i>Aythya fuligula</i>	Tufted Duck
<i>Aythya marila</i>	Scaup
<i>Botaurus stellaris</i>	Bittern
<i>Branta bernicla</i>	Brent Goose
<i>Cygnus columbianus</i>	Tundra Swan
<i>Cygnus cygnus</i>	Whooper Swan
<i>Dryobates minor</i>	Lesser Spotted Woodpecker
<i>Emberiza calandra</i>	Corn Bunting
<i>Emberiza citronella</i>	Yellowhammer
<i>Emberiza schoeniclus</i>	Reed Bunting
<i>Falco columbarius</i>	Merlin
<i>Falco peregrinus</i>	Peregrine
<i>Falco tinnunculus</i>	Kestrel
<i>Fringilla montifringilla</i>	Brambling
<i>Fulica atra</i>	Coot
<i>Gallinago Gallinago</i>	Snipe
<i>Gavia immer</i>	Great Northern Diver
<i>Haematopus ostralegus</i>	Oystercatcher
<i>Branta canadensis</i>	Canada Goose
<i>Branta leucopsis</i>	Barnacle Goose
<i>Bucephala clangula</i>	Goldeneye
<i>Buteo buteo</i>	Buzzard
<i>Calcarius lapponicus</i>	Lapland Bunting

<i>Calidris alba</i>	Sanderling
<i>Calidris alpina</i>	Dunlin
<i>Calidris canutus</i>	Knot
<i>Calidris ferruginea</i>	Curlew Sandpiper
<i>Calidris pugnax</i>	Ruff
<i>Cephus grille</i>	Black Guillemot
<i>Cettia cetti</i>	Cetti's Warbler
<i>Charadrius dubius</i>	Little Ringed Plover
<i>Charadrius hiaticula</i>	Ringed Plover
<i>Chloris chloris</i>	Greenfinch
<i>Chroicocephalus ridibundus</i>	Black-headed Gull
<i>Cinclus cinclus</i>	Dipper
<i>Circus aeruginosus</i>	Marsh Harrier
<i>Circus cyaneus</i>	Hen Harrier
<i>Clangula hyemalis</i>	Long-tailed Duck
<i>Coccothraustes coccothraustes</i>	Hawfinch
<i>Corvus corax</i>	Raven
<i>Cuculus canorus</i>	Cuckoo
<i>Curruca undata</i>	Dartford Warbler
<i>Cygnus atratus</i>	Black Swan
<i>Motacilla flava</i>	Yellow Wagtail
<i>Numenius Arquata</i>	Curlew
<i>Numenius phaeopus</i>	Whimbrel
<i>Oenanthe Oenanthe</i>	Wheatear
<i>Panurus biarmicus</i>	Bearded Tit
<i>Passer domesticus</i>	House Sparrow
<i>Passer montanus</i>	Tree Sparrow
<i>Phalacrocorax carbo</i>	Cormorant
<i>Phoenicurus ochruros</i>	Black Redstart
<i>Phoenicurus phoenicurus</i>	Redstart
<i>Phylloscopus trochilus</i>	Willow Warbler
<i>Picus viridis</i>	Green Woodpecker
<i>Platalea leucorodia</i>	Spoonbill
<i>Plectrophenax nivalis</i>	Snow Bunting
<i>Hirundo rustica</i>	Swallow
<i>Hydrobates leucorhous</i>	Leach's Petrel
<i>Hydrocoloeus minutus</i>	Little Gull
<i>Ichthyaetus melanocephalus</i>	Mediterranean Gull
<i>Lanius collurio</i>	Red-backed Shrike
<i>Larus argentatus</i>	Herring Gull
<i>Larus canus</i>	Common Gull
<i>Larus fuscus</i>	Lesser Black-backed Gull
<i>Larus hyperboreus</i>	Glaucous Gull
<i>Larus marinus</i>	Great Black-backed Gull
<i>Larus michahellis</i>	Yellow-legged Gull
<i>Limosa lapponica</i>	Bar-tailed Godwit
<i>Limosa limosa</i>	Black-tailed Godwit
<i>Linaria cannabina</i>	Linnet
<i>Locustella naevia</i>	Grasshopper Warbler

<i>Loxia curvirostra</i>	Crossbill
<i>Lymnocyptes minimus</i>	Jack Snipe
<i>Mareca Penelope</i>	Wigeon
<i>Melanitta nigra</i>	Common Scoter
<i>Mergellus albellus</i>	Smew
<i>Mergus serrator</i>	Red-breasted Merganser
<i>Milvus milvus</i>	Red Kite
<i>Morus bassanus</i>	Gannet
<i>Motacilla cinerea</i>	Grey Wagtail
<i>Tringa tetanus</i>	Redshank
<i>Turdus iliacus</i>	Redwing
<i>Turdus merula</i>	Blackbird
<i>Turdus philomelos</i>	Song Thrush
<i>Turdus pilaris</i>	Fieldfare
<i>Pluvialis apricaria</i>	Golden Plover
<i>Pluvialis squatarola</i>	Grey Plover
<i>Podiceps grisegena</i>	Red-necked Grebe
<i>Podiceps nigricollis</i>	Black-necked Grebe
<i>Poecile montanus</i>	Willow Tit
<i>Poecile palustris</i>	Marsh Tit
<i>Prunella modularis</i>	Dunnock
<i>Psittacula krameria</i>	Ring-necked Parakeet
<i>Puffinus puffinus</i>	Manx Shearwater
<i>Pyrrhula pyrrhula</i>	Bullfinch
<i>Recurvirostra avosetta</i>	Avocet
<i>Regulus regulus</i>	Goldcrest
<i>Riparia riparia</i>	Sand Martin
<i>Saxicola rubetra</i>	Whinchat
<i>Scolopax rusticola</i>	Woodcock
<i>Spatula clypeata</i>	Shoveler
<i>Spatula querquedula</i>	Garganey
<i>Stercorarius pomarinus</i>	Pomarine Skua
<i>Sturnus vulgaris</i>	Starling
<i>Tadorna tadorna</i>	Shelduck
<i>Thalasseus sandvicensis</i>	Sandwich Tern
<i>Tringa erythropus</i>	Spotted Redshank
<i>Tringa nebularia</i>	Greenshank
<i>Tringa ochropus</i>	Green Sandpiper
<i>Turdus torquatus</i>	Ring Ouzel
<i>Turdus viscivorus</i>	Mistle Thrush
<i>Tyto alba</i>	Barn Owl
<i>Vanellus Vanellus</i>	Lapwing

Field Survey Results

9.4.12 A total of 6,739 individual records of notable bird species were made within the Site boundary from 2019 to 2023. Summary accounts of the frequency of records of each of the notable species recorded in the winter bird surveys are provided in **Table 9A-**

6. Peak count refers to the highest count within any one date, only onsite records are recorded within the peak unless the only record is for the offsite land adjacent to the boundary. Across the three survey years, there were a total of 47 diurnal surveys, with 25 high-tide and 26 low-tide, with 4 surveys covering both high and low tide. In addition, there were 18 nocturnal surveys.

9.4.13 A full species list is provided in **Annex C**.

Table 9A-6 Peak count of wintering notable bird species (all diurnal and nocturnal surveys combined). Peak count refers to the highest count on any one survey date

Common Name	Scientific Name	Conservation Status	Peak Count	Local Status	Species Account
Barn Owl	<i>Tyto alba</i>	Sch 1	4	Uncommon Resident	Recorded in two of 26 low tide surveys and one of 25 high tide surveys. Recorded in most nocturnal surveys, recorded throughout the Site singly, occasionally in pairs. See Figure 9.1.9 for the distribution.
Bean Goose	<i>Anser fabalis</i>	Amber (UK)	(1 offsite)	Winter visitor	One individual recorded to the north (offsite).
Black Redstart	<i>Phoenicurus ochruos</i>	Amber (Wales), Sch 1, Amber (UK)	(1 offsite)	Uncommon migrant	One individual recorded on a low tide survey from an offsite field adjacent to the Site boundary.
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Red (Wales), S42, Amber (UK)	940	Common visitor in all seasons	Peak count recorded during high

					tide survey on 17/01/2020 Black-headed gull were recorded on 35/66 surveys
Brambling	<i>Fringilla montifringilla</i>	Sch 1	4	Fairly common winter visitor and passage migrant	Recorded on three of the surveys during diurnal surveys. Associated with hedgerows or scrub of field boundaries.
Brent Goose	<i>Branta bernicla</i>	S42, Amber (UK)	(1 offsite)	Uncommon winter visitor	One individual recorded on a high tide survey from the foreshore (offsite).
Bullfinch	<i>Pyrrhula pyrrhula</i>	Amber (Wales), S42, Amber (UK)	7	Common resident	Recorded in over half of the low tide surveys and in three quarters of the high tide surveys, throughout the Site but generally in low numbers.
Cetti's Warbler	<i>Cettia cetti</i>	Sch 1	10	Resident in coastal wetlands	Recorded in most low tide surveys and most high tide surveys, generally recorded as individuals across the Site. Recorded on 41/65 surveys
Common Gull	<i>Larus canus</i>	Amber (Wales), Red (UK)	738	Common winter visitor	Recorded in the majority of low tide and high tide surveys,

					occasionally over 100 individuals per field.
Common Sandpiper	Actitis hypoleucos	Amber (Wales), Amber (UK)	(2 offsite)	Uncommon passage migrant	Recorded in one low tide survey offsite.
Coot	Fulica atra	Amber (Wales)	(4 offsite)	Common Resident	Recorded in a third of the low tide and high tide surveys in low numbers. Almost all records from offsite field 425.
Cormorant	Phalacrocorax carbo	Non-notable	4	Fairly common resident and winter visitor	Recorded in low numbers across a quarter of low tide and high tide surveys.
Crane	Grus grus	Amber (UK), Annex 1	(4 offsite)	Former Vagrant	Four individuals recorded in one low tide survey, offsite. No high tide records.
Curlew	Numenius arquata	Red (Wales), S42, Red (UK)	198	Common in winter and on passage	Recorded in twelve low tide surveys and fifteen high tide surveys typically in low numbers across the Site but one record of >100 individuals from field 160. Peak count was a high-tide diurnal survey on 11/12/19. Recorded in eleven of the nocturnal surveys, with

					a peak of 26 recorded in field 137. Nocturnal surveys saw some large counts offsite on foreshore. See Figure 9.1.1 for the distribution.
Dartford Warbler	<i>Sylvia undata</i>	Amber (Wales), Sch 1, Amber (UK), Annex 1	(1 offsite)	Rare	Two records of individuals in high tide surveys offsite.
Dunlin	<i>Calidris alpina</i>	Red (Wales), Red (UK), Annex 1	156	Common winter visitor and passage migrant	Dunlin were recorded on five occasions within the Site boundary. The peak onsite count for dunlin was a high-tide diurnal survey on 16/01/20 comprising fields 119 and 126, this peak record was the only high-tide survey that dunlin were recorded during. Dunlin were only recorded once during the low-tide survey with a total of 20 individuals in field 124. Recorded in three nocturnal surveys but only one record of four

					birds from within Site. Dunlin were more commonly seen on the offsite estuary foreshore numbers in the 1,000's. See Figure 9.1.5 for the distribution.
Dunnock	<i>Prunella modularis</i>	Amber (Wales), S42, Amber (UK)	23	Abundant resident	Recorded in all surveys throughout the Site, typically using hedgerows and scrub comprising field boundaries.
Fieldfare	<i>Turdus pilaris</i>	Amber (Wales), Sch 1, Red (UK)	1000	Common winter visitor	Recorded in most low tide surveys and most high tide surveys throughout the site sometimes in large numbers (>300). Peak onsite count comprised multiple flocks of >100 on 22/10/2022. Highest number of individuals within a flock was recorded in field 47 (26/11/2020).
Gadwall	<i>Anas strepera</i>	Amber (UK)	6	Common resident in wetlands	Recorded in low numbers onsite with offsite records from the

					foreshore. Peak onsite count comprises 6 birds seen in waterbodies associated with fields 24 (2) and 98 (4) during low-tide survey on 26/03/21. Gadwall were typically recorded in pairs during high-tide surveys from fields 124, 113 and 24, though on one occasion 4 gadwall were recorded in field 124, this field supported gadwall on 4 high-tide surveys. Single gadwall were recorded twice during nocturnal surveys within fields 24 and 32. See Figure 9.1.7 for the distribution.
Goldcrest	Regulus regulus	Red (Wales)	7	Common resident	Recorded in half the low tide surveys and high tide surveys in low numbers throughout the Site.
Golden Plover	Pluvialis apricaria	S42, Annex 1	30	Uncommon winter visitor and	Peak count of 30 birds using field 78 during

				passage migrant	low-tide survey on 10/02/2021. High offsite counts are related to the offsite foreshore.
Goshawk	<i>Accipiter gentilis</i>	Amber (Wales), Sch 1	(1 offsite)	Uncommon resident	One individual recorded in one high tide survey offsite adjacent to the Site boundary.
Grasshopper Warbler	<i>Locustella naevia</i>	Red (Wales), S42, Red (UK)	(2 offsite)	Uncommon summer visitor	Two individuals recorded offsite adjacent to the Site boundary.
Great Black-backed Gull	<i>Larus marinus</i>	Amber (Wales), Red (UK)	2	Fairly common resident	Recorded in low numbers onsite across a handful of surveys.
Green sandpiper	<i>Tringa ochropus</i>	Amber (Wales), Sch 1, Amber (UK)	2	Passage migrant	Recorded in two low tide surveys and four high tide surveys in low numbers.
Green Woodpecker	<i>Picus viridis</i>	Amber (Wales)	2	Fairly common resident	Peak count of two individuals associated with boundary features.
Greenfinch	<i>Chloris chloris</i>	Red (Wales), Red (UK)	10	Common resident	Recorded in half of the surveys across the Site associated with boundary features hedgerow and scrub of fields. A single individual was recorded

					during the nocturnal surveys.
Greenshank	<i>Tringa nebularia</i>	Sch 1, Amber (UK)	(1 offsite)	Fairly common, winter and on passage	One record offsite during a low-tide survey.
Grey Heron	<i>Ardea cinerea</i>	Amber (Wales)	27	Fairly common resident	Recorded in most low tide and high tide surveys throughout the Site and usually singly though there were records of groups of up to nine. Recorded in a handful of nocturnal surveys.
Grey partridge	<i>Perdix perdix</i>	Red (Wales), S42, Red (UK)	2	Uncommon resident	A single individual recorded in low tide surveys but no records from the high tide surveys. Peak count of 2 were recorded on Site during one nocturnal survey with a further bird in flight.
Grey Plover	<i>Pluvialis squatarola</i>	Red (Wales), Amber (UK)	3	Fairly common winter visitor	Onsite peak count of 3 birds were recorded during a nocturnal survey from field 160. Offsite records in two low tide surveys and three high tide

					surveys but only on the foreshore (offsite).
Grey wagtail	<i>Motacilla cinerea</i>	Amber (Wales), Amber (UK)	3	Widespread resident	Recorded in two thirds of the low tide surveys and high tide surveys in low numbers.
Greylag Goose	<i>Anser anser</i>	Amber (UK)	5	Scarce on passage; feral birds widespread	Onsite peak count of 5 birds were recorded during a nocturnal survey from field 96. Offsite records account for three low tide surveys and seven of the high tide surveys from six fields in flocks of up to 39.
Herring Gull	<i>Larus argentatus</i>	Red (Wales), S42, Red (UK)	645	Common resident	Recorded in the majority of the low tide and high tide surveys throughout the Site and occasionally numbering >100 per field. Recorded in one nocturnal survey
House Martin	<i>Delichon urbicum</i>	Amber (Wales), Red (UK)	10	Fairly common migrant	Recorded foraging over grassland and arable fields during October 2019 and 2020.

House Sparrow	Passer domesticus	Amber (Wales), S42, Red (UK)	152	Abundant resident	Recorded mainly associated with hedgerows in almost every winter survey and throughout the Site in flocks up to 65 individuals.
Jack Snipe	Lymnocyptes minimus	Amber (Wales)	1	Uncommon winter visitor	Single records on five surveys across the survey period. Individual recorded in a high tide surveys as well as nocturnal surveys.
Kestrel	Falco tinnunculus	Red (Wales), S42, Amber (UK)	7	Fairly common resident	Peak count of 7 individuals recorded on one day 07/10/2019. Kestrels were recorded in three quarters of the LT surveys in low numbers throughout the Site and recorded in two thirds of the HT surveys in low numbers throughout the Site.
Kingfisher	Alcedo atthis	Sch 1, Annex 1	1	Uncommon resident	Kingfisher were recorded during a handful of surveys, mostly as

					individual sightings.
Knot	Calidris canutus	Amber (Wales), Amber (UK)	(10 offsite)	Common winter visitor	Only recorded in the high tide surveys on one occasion on the foreshore (offsite).
Lapwing	Vanellus vanellus	Red (Wales), S42, Red (UK)	51	Common winter and on passage	Lapwing peak count was from records within fields 124, 125 and 143 with additional birds seen in-flight, on 03/03/2023. Recorded in eight of the low tide and nine the high tide surveys generally in small groups of a few individuals but with some records of larger groups. Recorded in seven nocturnal surveys mainly from fields near to the estuary; 15, 16, 134, 124, 126, 160 and 192. Counts of >100 occasionally from the estuary foreshore.
Lesser Black-backed Gull	Larus fuscus	Red (Wales), Amber (UK)	182	Common resident	Recorded in two thirds of the low tide

					and high tide surveys generally in low numbers throughout the Site but with one larger count of 160 within field 107 on 20/10/2020.
Linnnet	<i>Carduelis cannabina</i>	Red (Wales), S42, Red (UK)	95	Common resident	Recorded in two thirds of the LT surveys and HT surveys and throughout the site often in flocks of over 10 birds. Peak count split between fields 119 and 133 on 16/10/2022.
Little Egret	<i>Egretta garzetta</i>	Annex 1	26	Fairly common on coast	Recorded in the majority of low tide and high tide surveys and throughout the site generally in low numbers but with some larger flocks. Peak count of 25 recorded within field 191 and 170 on 04/03/2021.
Mallard	<i>Anas platyrhynchos</i>	Amber (UK)	53	Common resident	Recorded in almost every low tide and high tide survey and in most fields, generally in

					low numbers (≤4 birds). Recorded in every nocturnal survey throughout the Site, some large groups.
Marsh Harrier	<i>Circus aeruginosus</i>	Amber (Wales), Sch 1, Amber (UK), Annex 1	2	Scarce passage migrant and winter visitor	Infrequent records of individual birds across the surveys, peak count of two birds seen during 12/02/2023.
Meadow Pipit	<i>Anthus pratensis</i>	Red (Wales), Amber (UK)	153	Common resident, passage migrant, winter visitor	Recorded in every low tide survey but one and every high tide survey but one. Widespread across the Site. Recorded at individuals in a third of nocturnal surveys (3/18).
Mediterranean gull	<i>Ichthyaetus melanocephalus</i>	Amber (Wales), Sch 1, Amber (UK), Annex 1	2	Scarce passage migrant & winter visitor	Recorded on two occasions in the low-tide surveys.
Merlin	<i>Falco columbarius</i>	Red (Wales), Sch 1, Red (UK), Annex 1	2	Uncommon winter visitor and very scarce breeder	Recorded a handful of times across the surveys. Two birds seen at the same time during high tide survey on 15/10/2019.

Mistle Thrush	Turdus viscivorus	Amber (Wales), Red (UK)	17	Common resident	Recorded in most low tide surveys and high tide surveys generally in ones and twos but with a few records of larger flocks, largest flock record of 14 individuals. Recorded in two nocturnal surveys in low numbers (singles/pairs).
Moorhen	Gallinula chloropus	Amber (UK)	10	Widespread	Recorded in low numbers throughout the surveys, typically from within reens along field boundaries or waterbodies within fields.
Oystercatcher	Haematopus ostralegus	Amber (Wales), Amber (UK)	51	Fairly common, winter and on passage	Only recorded on Site on one occasion in the diurnal surveys but was frequently recorded on the estuary foreshore. Recorded on Site in two nocturnal surveys.
Peregrine	Falco peregrinus	Sch 1, Annex 1	2	Uncommon resident	Recorded in just one low tide as single individuals but in three high tide surveys. Peak count saw two birds at the same

					time perched on pylon.
Pink-footed Goose	Anser brachyrhynchus	Amber (UK)	1	Over-wintering visitor	Recorded once during the surveys, within field 64 on 17/10/2022
Red Kite	Milvus milvus	Sch 1, Annex 1	1	Scarce resident	One record from high tide surveys
Redpoll spp.	Acanthis sp.	Red (UK)	(15 offsite)	Fairly common winter visitor but one species very rare	Recorded offsite only throughout the surveys.
Redshank	Tringa totanus	Red (Wales), Amber (UK)	1	Fairly common, winter and on passage	Recorded once onsite, record is within field 148 during a nocturnal survey. Recorded commonly on the foreshore (offsite) during both high and low tide surveys. See Figure 9.1.6 for the distribution.
Redstart	Phoenicurus phoenicurus	Amber (UK)	(1 offsite)	Fairly common summer visitor	A single record from the LT surveys from the offsite adjacent to Site.
Redwing	Turdus iliacus	Sch 1, Amber (UK)	762	Common winter visitor	Recorded in every low tide survey and most high tide surveys, throughout the Site often in large flocks of over 100 birds.

					Recorded in most nocturnal surveys.
Reed Bunting	<i>Emberiza schoeniclus</i>	S42, Amber (UK)	14	Common resident	Recorded in most of the surveys, throughout the Site and generally singly or in pairs from hedgerows and reens bordering fields.
Ring Ouzel	<i>Turdus torquatus</i>	Red (Wales), S42, Red (UK)	1	Scarce passage migrant	One record in a low tide and one in a high tide survey, each of a single bird.
Ringed plover	<i>Charadrius hiaticula</i>	Red (Wales), S42, Red (UK)	(11 offsite)	Mainly a passage migrant, scarce breeder	No onsite records. Recorded in a quarter of high tide surveys mainly from the foreshore (offsite).
Shelduck	<i>Tadorna tadorna</i>	Red (Wales), Amber (UK)	48	Locally common resident	Recorded in moderate flocks of up to 38 individuals on Site, with offsite sightings regularly on the offsite foreshore. Peak count comprises multiple flocks from different fields on 25/02/2020. Recorded on Site in 2 nocturnal surveys in low

					numbers and offsite in a further survey. Shelduck were recorded in 5 low-tide surveys and 8 high-tide surveys. See Figure 9.1.2 for the distribution.
Short-eared Owl	<i>Asio flammeus</i>	Amber (Wales), Amber (UK), Annex 1	2	Uncommon winter visitor and passage migrant	Recorded four times across the surveys, typically of single birds. Peak count of two individuals recorded in field boundaries of fields 184 and 192 on 17/10/2020.
Skylark	<i>Alauda arvensis</i>	Amber (Wales), S42, Red (UK)	53	Common resident	Recorded in most of the surveys, in low numbers throughout the Site with occasional records of larger flocks. Recorded in two nocturnal surveys.
Snipe	<i>Gallinago gallinago</i>	Amber (Wales), Amber (UK)	95	Fairly common winter visitor	Snipe were recorded in most of the surveys across the Site. Recorded in every nocturnal survey but one, throughout the Site. Peak

					count of snipe was recorded during 12/12/2020 nocturnal survey with 50 individuals being recorded in one field and further smaller groups on the same date. See Figure 9.1.3 for the distribution.
Song Thrush	Turdus philomelos	S42, Amber (UK)	60	Common resident	Recorded in every low tide survey and most high tide surveys, throughout the Site often in low numbers. Moderate flocks up to 31 individuals were recorded during diurnal surveys. Peak count comprised multiple flocks across the Site.
Sparrowhawk	Accipiter nisus	Amber (UK)	4	Common resident	Handful of records across the surveys. Peak count of 4 individual birds recorded within different fields.
Starling	Sturnus vulgaris	Red (Wales), S42, Red (UK)	4300	Common resident	Recorded in most of the surveys, throughout the Site and often in flocks

					numbering hundreds of birds. Recorded in two nocturnal surveys in relatively low numbers. Peak count comprises multiple large flocks, the largest individual flock was of 2000 birds.
Stock Dove	Columba oenas	Amber (UK)	144	Fairly common resident	Recorded in three quarters of the low tide surveys and in half of the high tide surveys, throughout the Site. Peak count comprised a flock of 127 individuals along with smaller numbers across other fields on the same day on 01/10/2020. Recorded in half the nocturnal surveys with a peak count of 15 birds.
Tawny owl	Strix aluco	Amber (UK)	2	Fairly common resident	Handful of low numbers of individual birds recorded during nocturnal surveys and rare records

					during diurnal surveys.
Teal	<i>Anas crecca</i>	Amber (Wales), Amber (UK)	49	Common winter visitor	Recorded in the majority of surveys, widespread across the Site, in one occasion a single flock of 45 birds. Field 105 was recorded supporting flocks of 30 or more birds on 5 separate occasions. Recorded in two thirds of the nocturnal survey throughout the Site with counts of up to 30 birds.
Turnstone	<i>Arenaria interpres</i>	Amber (Wales), Amber (UK)	0	Fairly common in winter and on passage	Only recorded in two low tide surveys and in five high tide surveys on the foreshore (offsite).
Water Pipit	<i>Anthus spinoletta</i>	Amber (UK)	1	Uncommon winter visitor	One onsite record from within field 192. Other offsite records include the foreshore.
Water Rail	<i>Rallus aquaticus</i>	Amber (Wales)	1	Uncommon resident	Recorded three times within the Site.
Whimbrel	<i>Numenius phaeopus</i>	Amber (Wales), Sch 1, Red (UK)	0	Uncommon passage migrant	No LT records No HT records
Whinchat	<i>Saxicola rubetra</i>	Red (Wales), Red (UK)	4	Fairly common summer visitor	Four individuals recorded in one survey

					during 04/10/2022.
White-fronted Goose	<i>Anser albifrons</i>	Red (Wales), S42, Red (UK), Annex 1	1	Very scarce and irregular winter visitor	One record on Site from the nocturnal surveys. Offsite records from the estuary foreshore in the diurnal surveys. See Figure 9.1.4 for the distribution.
Whooper Swan	<i>Cygnus cygnus</i>	Sch 1, Amber (UK), Annex 1	1	Very scarce and irregular winter visitor	Recorded in two high tide surveys from three fields, and one low tide records. One record from the nocturnal surveys.
Wigeon	<i>Anas penelope</i>	Amber (Wales), Amber (UK)	29	Common winter visitor and passage migrant	Wigeon were recorded 17 times across the surveys, typically in flocks of up to 10. Peak count flock of 29 birds was recorded in fields during the nocturnal surveys. Peak diurnal flock was recorded during a high-tide survey in association with a waterbody within field 64.
Woodcock	<i>Scolopax rusticola</i>	Red (Wales), Red (UK)	3	Uncommon winter visitor and	Recorded in two diurnal surveys from two fields.

				uncommon breeder	Recorded in a third of nocturnal surveys generally as singles. Peak count of 3 individuals within separate fields during 08/12/2022 nocturnal survey.
Wren	Troglodytes troglodytes	Amber (UK)	5	Common resident	Recorded within hedgerows and boundary features, records of wren are low as they were not considered to be a notable species until the UK BoCC 5 update 2021 and Welsh BoCC 4 update in 2022

Red (UK) = Red listed Bird of Conservation Concern 5 (BoCC5) (Stanbury et al., 2021); **Amber (UK)** = Amber listed BoCC5; **Sch1** = listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended).; **Red (Wales)** = Red listed Bird of Conservation Concern Wales 4 (Wales BoCC4) (Johnstone et al, 2022); **Amber (Wales)** = Amber listed Wales BoCC4; **S42** = Species of Principal Importance under Section 42 of the Environment (Wales) Act 2016; **Annex 1** = Threatened bird listed on Annex I of the EC Birds Directive/ Habitats listed on Annex I of the EC Habitats Directive

Evaluation

Conservation Status

High Tide Surveys

9.4.14 A total of 77 species, of which 59 are notable species, were recorded in the high tide surveys. Of these:

- 26 species are waterbirds and therefore can be considered to be a part of the

SPA 'Waterbird Assemblage';

- The remaining 36 species are notable either as Schedule 1 species, S42 and/or listed as red or amber on the UK and/or Welsh BoCC.
- Of the above, three species are named in the SPA designation as the primary reasons for the protection of the site (shelduck, gadwall and dunlin).

Low Tide Survey

9.4.15 A total of 77 species, of which 60 are notable species, were recorded in the low tide surveys. Of these:

- 27 species are waterbirds and therefore can be considered to be a part of the SPA 'Waterbird Assemblage';
- The remaining 37 species are notable either as Schedule 1 species, S42 and/or listed as red or amber on the UK and/or Welsh BoCC.
- Of the above, three species are named in the SPA designation as the primary reasons for the protection of the site (shelduck, gadwall and dunlin);

Nocturnal Survey

9.4.16 A total of 45 species, of which 40 are notable species, were recorded in the nocturnal surveys. Of these:

- 25 species are waterbirds and therefore can be considered to be a part of the SPA 'Waterbird Assemblage';
- The remaining 18 species are notable either as Schedule 1 species, S42 and/or listed as red or amber on the UK and/or Welsh BoCC.
- Of the above, five species are named in the SPA designation as the primary reasons for the protection of the site (white-fronted goose, shelduck, gadwall, dunlin and redshank).

Species Abundance

9.4.17 Peak counts for species were assessed in the context of the sizes of those populations relative to international, national⁵ and Welsh populations⁶. Populations were assessed as being important at an international or national level if they exceeded 1% of the relevant population estimate, as described in **Section 9.3.17**.

9.4.18 As transects were not undertaken simultaneously, peak counts could not be summed within survey months as this would potentially result in double counting. Therefore, the peak count for any single date was taken. The results are illustrated in **Table 9A-7** below.

Table 9A-7 Evaluation of Wintering Bird Population Compared to International, National and Welsh Levels

Species	Peak Count on Site	International 1% Population Threshold	British 1% Population Threshold	Welsh 1% Population Threshold	Exceeds 1%
Bewick's swan	0	220	44	1	No
Black-tailed godwit	0	1,100	390	50	No
Brent goose	0	2,100	980	22	No
Coot	1	15500	2000	24	No
Cormorant	4	1,200	620	No information available	No
Curlew	198	7600	1200	64	Yes – Wales
Dunlin	156	13300	3400	264	No
Gadwall	6	1400	310	16	No
Golden Plover	30	9,300	4,000	76	No
Green Sandpiper	2	20,000	3	No information available	No
Grey Heron	27	5,000	450	No information available	No
Grey Plover	3	2000	330	22	No

⁵ <https://www.bto.org/our-science/projects/wetland-bird-survey/data/species-threshold-levels>

⁶ <https://app.bto.org/webs-reporting/principal.jsp>

Greylag Goose	5	No information available	1400	22	No
Jack Snipe	1	20,000	1,000	No information available	No
Knot	0	5,300	2,600	57	No
Lapwing	51	20000	6200	103	No
Little Egret	26	1,100	110	No information available	No
Little Grebe	1	4,700	150	No information available	No
Mallard	53	20,000	6,700	68	No
Moorhen	10	20,000	3,000	No information available	No
Mute Swan	43	500	500	No information available	No
Oystercatcher	51	8,200	2,900	428	No
Pink-Footed Goose	1	5,400	5,100	63	No
Pintail	0	740	200	23	No
Pochard	0	1500	230	54	No
Redshank	1	2400	940	82	No
Ringed Plover	0	540	420	15	No
Shelduck	48	3100	470	45	Yes – Wales
Shoveler	0	650	190	11	No
Snipe	95	20,000	10,000	14	Yes- Wales
Spotted Redshank	0	830	26	1	No
Teal	49	6700	4300	92	No
Tufted duck	0	8900	1300	14	No
Turnstone	0	1,400	400	11	No
Water Rail	1	6,400	No information available	No information available	No
Whimbrel	0	7700	300	9	No
White fronted goose	1	12000	21	2	No
Whooper Swan	1	340	160	2	No
Wigeon	29	14000	4500	164	No
Woodcock	3	20,000	14,000	No information available	No

Functionally Linked Land

9.4.19 To assess whether any the site as a whole or individual fields exceed the 1% threshold for Functionally Linked Land associated with the Severn Estuary SPA, the peak count of each wetland bird on any one survey per season was taken and averaged across the three seasons. This peak mean was compared to the WeBS 'moving 5 year average' 2023 – 2024 (published by Calbrade et al., 2025⁷) for the following named species:

- Bewick's swan
- White fronted goose
- Dunlin
- Redshank
- Shelduck
- Gadwall.

Bewick's swan – Article 4.1 species

9.4.20 No Bewick's swan were recorded during the surveys.

White fronted goose – Article 4.2 species

9.4.21 One record for white fronted goose was recorded within the Site boundary, the record is of one individual within Field 15 during 2020/2021 nocturnal surveys (refer to **Figure 9.1.4**). The 1% threshold is not exceeded on-Site for this species.

9.4.22 White fronted goose were recorded on the foreshore of the Severn estuary adjacent to the Site on the 17th December 2019 (84 birds) and 7th January 2021 (24 birds).

⁷ Calbrade, N.A., Birtles, G.A., Woodward, I.D., Feather, A., Hiza, B., Caulfield, E., Balmer, D.E., Peck, K., Wotton, S.R., Shaw, J.M., and Frost, T.M. (2025). *Waterbirds in the UK 2023/24: The Wetland Bird Survey and Goose & Swan Monitoring Programme*. BTO/RSPB/JNCC/NatureScot. Thetford.

Dunlin – Article 4.2 species

The 5 year moving average for dunlin is 27,695. The peak count on any single day across the entire Site did not exceed the 1% threshold of 277 birds. In Fields 119, 124 and 126 there were flocks of dunlin, however these appeared to be isolated one-off events. See **Table 9A-8** below and **Figure 9.1.5**).

Table 9A-8 Peak Counts of Dunlin Per Season

Season	Peak Count	Date of Peak Count	Field/s	1% Threshold	Potential to be Functionally Linked
2019-2020	156	16/01/20	119,126	277	No
2020-2021	20	25/01/21	124		
2022 - 2023	0	-	-		

Redshank – Article 4.2 species

9.4.23 One redshank was recorded within the Site boundary; the record is of one individual within Field 148 during 2019/2020 nocturnal surveys (refer to **Figure 9.1.6**). The 1% threshold is not exceeded on-Site for this species.

9.4.24 Other recorded redshank are associated with the offsite foreshore mudflats of the Severn estuary.

Shelduck – Article 4.2 species

9.4.25 The 5 year moving average for shelduck is 7696. The peak count on any single day across the entire Site did not exceed the 1% threshold of 77 birds. See **Table 9A-9** below.

Table 9A-9 Peak Counts of Shelduck Per Season

Season	Peak Count	Date of Peak Count	Field/s	1% Threshold	Potential to be Functionally Linked
2019-2020	48	25/02/20	121,124, 139	77	No
2020-2021	37	11/03/21	70, 170		
2022-2023	4	18/03/2023	47		

Gadwall – Article 4.2 species

9.4.26 Gadwall were recorded on ten survey dates, and sightings were across just seven different fields. Peak counts ranged from one to six birds on a single survey date. Highest numbers were recorded on 26/03/2021 when six birds were recorded within Fields 24 and 98.

9.4.27 The 5 year moving average for gadwall is 240. The 1% threshold was exceeded on four occasions: 26/03/2021 (as above), on 05/12/2022 when five birds were recorded in Field 215, on 13/01/2023 when four birds were recorded in Fields 24 and 124, and on 15/03/23 when four birds were recorded in Field 124, as shown in **Table 9A-10** below.

Table 9A-10 Peak Counts of Gadwall Per Season

Season	Peak Count	Date of Peak Count	Field/s	1% Threshold	Potential to be Functionally Linked
2019-2020	2	03/03/20 and 05/03/2020	124 and 108 respectively	2.4	Yes
2020-2021	6	26/03/21	24,98		
2022 – 2023	5	05/12/22	215		

9.4.28 The 1% threshold was exceeded on four dates in total across the three seasons.

9.4.29 **Table 9A-11** below shows the regularity each of the above fields are used by gadwall. Across all surveys, gadwall were generally only observed once within an individual field, with the exception of Field 124 when gadwall were recorded on six separate occasions (out of 65 surveys). See also **Figure 9.1.7**.

Table 9A-11 Regularity of Field Use for Gadwall

Field number	No. times recorded over 3 seasons	Peak number per field	Average number per field
24	3	2	1.7
32	1	1	1
98	1	4	4
108	1	2	2
113	1	2	2
124	4	4	2.25
215	1	5	5

Waterbird Assemblage

9.4.30 The 5 year moving average for the waterbird assemblage (excluding gulls) of the Severn estuary is 78,096. The onsite mean peak did not exceed the 1% threshold when averaged across the three survey years. See **Table 9A-12** below for yearly peaks and see **Figure 9.1.8** for the distribution.

Table 9A-12 Peak Counts for the Winter Waterbird Assemblage (excluding gulls) Per Season

Season	Peak Count	Date of Peak Count	1% Threshold	Potential to be Functionally Linked
2019-2020	258	05/03/20	781	No
2020-2021	140	09/02/21		
2022 – 2023	170	03/03/23		

Additional Ramsar Species

9.4.31 Species/populations of Eurasian teal and pintail, identified subsequent to designation for possible future consideration under criterion 6, were also assessed against international populations.

Eurasian teal

9.4.32 Teal were recorded on 56 surveys, and sightings were across 58 different fields. Highest numbers were recorded on 27/01/2021 when a peak count of 49 birds were recorded within Fields 185, 187, 188, 189, 192 and 504. Peak count within one field was 45 from 05/03/2020 within field 105.

9.4.33 Of all the teal records, 91.7% were associated with boundary reens.

9.4.34 The international 1% threshold for teal is 6700. The 1% threshold was not exceeded for this species. See **Table 9A-13** below.

Table 9A-13 Peak Counts of Gadwall Per Season

Season	Peak Count	Date of Peak Count	Field/s	1% Threshold	Potential to be Functionally Linked
2019-2020	45	05/03/2020	105	6700	No

2020-2021	49	27/01/2021	185, 187, 188, 189, 192 and 504		
2022 - 2023	47	05/12/22	32, 57, 105 and 129		

Pintail

9.4.35 Pintail were not recorded during the surveys.

Nationally Important Species

Curlew

9.4.36 The Welsh population for curlew is 6441, 1% of which is 64. Curlew exceeded 1% of the Welsh average population on four dates, with the highest individual count being 121 birds on Field 160 on 11/12/2019, as shown in **Table 9A-14**.

Table 9A-14 Peak Counts of Curlew Per Season

Season	Peak Count	Date of Peak Count	Field/s	1% Threshold	National Importance
2019-2020	198	11/12/19	134,142,143,146,	64	Yes
	148,156,160,161				
2020-2021	60	05/11/20	170		

9.4.37 Curlew were recorded within 38 different fields across the development site, however reviewing regularity of field use, the most often used fields by curlew was Field 160, used on 12 survey dates, Field 166/170, used on 9 survey dates, Field 134, used on six survey dates and Fields 124 and 129 were used on five survey dates, indicating semi-regular use. See also **Figure 9.1.1**.

9.4.38 The 1% threshold was exceeded on four separate dates in total across the three seasons.

9.4.39 **Table 9A-15** below shows the regularity each of the above fields are used by curlew.

Table 9A-15 Regularity of Field Use by Curlew. Highlighted row exceeds 1% of the Welsh population

Field number	No. times recorded over 3 seasons	Peak number per field	Average number per field
17	1	1	1.0
20	1	1	1.0
47	1	1	1.0
60	1	1	1.0
64	1	1	1.0
70	1	2	2.0
96	1	3	3.0
105	1	1	1.0
108	1	12	12.0
119	1	1	1.0
121	1	16	16.0
123	1	20	20.0
124	5	50	19.6
125	1	20	20.0
126	4	59	22.8
129	4	21	12.8
133	2	6	3.5
134	5	22	6.8
135	2	1	1.0
137	3	46	32.7
138	1	4	4.0
139	1	3	3.0
142	1	1	1.0
143	3	6	3.3
146	2	4	2.5
148	4	14	5.5
149	1	1	1.0
156	2	4	2.5
158	1	4	4.0
160	12	121	17.4
161	3	50	25.7
163	2	25	13.0
166/170	9	80	29.4
172	2	9	5.0
173	1	59	59.0
174	1	2	2.0
182	1	1	1.0

Snipe

9.4.40 The Welsh population for snipe is 1373, 1% of which is 14. Snipe exceeded 1% of the Welsh average population on 24 dates, with the highest individual count being 95 birds on Fields 13, 16, 20, 22, 25, 30, 33, 40 and 48 on 12/12/2020. This included a count of 50 individuals in field 40.

Table 9A-16 Peak Counts of Snipe Per Season

Season	Peak Count	Date of Peak Count	Field/s	1% Threshold	National Importance
2019-2020	21	06/03/2020	146	14	Yes
2020-2021	95	12/12/2020	13, 16, 20, 22, 25, 30, 33, 40, 48		
2022 - 2023	36	08/12/2022 and 05/01/2023	18, 20, 24, 30, 33, 48, 57, 64, 69, 82, 183 And 25, 30, 33, 41, 48 respectively		

9.4.41 Snipe were recorded within 86 different fields across the development site, however reviewing regularity of field use, 27 of these fields only have records of one individual. The most often used field by snipe was Field 33, used on 21 survey dates. 31 fields were used on more than three survey dates, indicating semi-regular use. See also **Figure 9.1.3**.

9.4.42 **Table 9A-17** below shows the regularity each of the above fields are used by snipe.

Table 9A-17 Regularity of Field Use by Snipe. Highlighted row exceeds 1% of the Welsh population

Field number	No. times recorded over 3 seasons	Peak number per field	Average number per field
13	1	1	1.0
14	2	1	1.0
15	1	4	4.0
16	12	5	1.8
18	6	2	1.3
19	4	1	1.0
20	9	4	2.1
22	3	8	4.3
24	7	4	1.9

25	12	4	1.9
30	9	10	3.1
33	21	30	6.5
35	1	1	1.0
40	1	50	50.0
41	11	7	1.7
48	19	16	5.4
55	6	5	2.7
57	5	2	1.2
58	3	2	1.3
59	2	3	2.0
64	6	5	2.8
65	1	8	8.0
66	4	3	2.0
67	1	1	1.0
68	1	1	1.0
69	11	13	3.3
70	1	1	1.0
71	3	4	2.7
73	1	9	9.0
74	1	3	3.0
76	1	1	1.0
78	1	1	1.0
80	1	1	1.0
82	2	11	6.0
87	1	1	1.0
88	1	12	12.0
98	3	2	1.3
99	1	3	3.0
103	5	10	3.2
105	2	1	1.0
106	1	6	6.0
108	2	4	2.5
113	1	2	2.0
118	2	2	1.5
120	1	1	1.0
121	4	3	2.0
124	7	10	3.7
125	3	2	1.7
126	5	4	3.0
127	1	1	1.0
129	8	4	2.3
130	1	3	3.0
133	3	1	1.0
134	2	1	1.0
135	1	1	1.0
136	1	1	1.0
137	7	6	2.7
138	4	5	2.3

139	6	8	2.8
140	1	1	1.0
142	1	1	1.0
143	8	8	3.5
145	1	5	5.0
146	4	21	9.0
148	4	4	2.5
149	1	1	1.0
156	8	7	2.5
160	9	9	3.7
161	2	2	1.5
163	1	7	7.0
169	3	6	3.7
170	2	1	1.0
172	2	2	1.5
173	8	11	4.0
174	6	4	2.2
176	1	2	2.0
178	1	4	4.0
183	2	15	12.0
186	2	1	1.0
187	1	1	1.0
188	3	4	3.3
192	6	2	1.2
365	1	1	1.0
366	1	1	1.0
503	1	1	1.0
528	1	6	6.0

Shelduck

9.4.43 The Welsh population for shelduck is 4504, 1% of which is 45. Shelduck exceeded 1% of the Welsh average population on 3 dates, with the highest individual count being 48 birds on Fields 121, 124 and 139 on 25/02/2020.

Table 9A-18 Peak Counts of Snipe Per Season

Season	Peak Count	Date of Peak Count	Field/s	1% Threshold	National Importance
2019-2020	48	25/02/2020	121, 124, 139	45	Yes
2020-2021	37	11/03/2021	70, 170		
2022 - 2023	4	18/03/2023	47		

9.4.44 Shelduck were recorded within 34 different fields across the development site, however reviewing regularity of field use, 22 of these fields only have records of one individual. The most often used field by shelduck was Field 124, used on 5 survey

dates. See also **Figure 9.1.2**.

9.4.45 **Table 9A-19** below shows the regularity each of the above fields are used by shelduck.

Table 9A-19 Regularity of Field Use by Shelduck. Highlighted row exceeds 1% of the Welsh population

Field number	No. times recorded over 3 seasons	Peak number per field	Average number per field
47	3	4	2.7
60	1	4	4.0
70	1	30	30.0
78	1	2	2.0
79	1	3	3.0
95	1	2	2.0
98	1	9	9.0
103	1	1	1.0
105	1	5	5.0
106	2	3	2.0
107	3	31	24.3
108	3	3	1.7
113	2	4	2.5
119	4	18	10.3
120	1	3	3.0
121	1	7	7.0
124	5	38	13.2
129	1	1	1.0
130	1	2	2.0
134	4	5	2.5
135	1	3	3.0
137	1	1	1.0
138	1	4	4.0
139	2	3	3.0
146	1	2	2.0
148	1	1	1.0
160	3	4	3.0
169	1	1	1.0
170	4	7	3.3
171	1	4	4.0
173	1	1	1.0
177	4	31	14.8
180	1	5	5.0
381	1	15	15.0

Other Key Species

9.4.46 The Welsh population for lapwing is 10309, 1% of which is 103. The peak count on any single day across the entire Site was 51 and did not exceed the 1% threshold of 103 birds, as shown in **Table 9A-20** below.

Table 9A-20 Peak Counts of Lapwing Per Season

Season	Peak Count	Date of Peak Count	Field/s	1% Threshold	National Importance
2019-2020	11	03/10/19	158,181	103	No
2020-2021	6	18/03/21	124		
2022 – 2023	51	03/03/23	124,125, 143		

Distribution of Other Notable Species

9.4.47 Skylark were also recorded throughout the Site but with notably fewer records from the eastern end of the Site and in the area to the north of Mead Farm. Peak counts of meadow pipit did not show any particular trend and were distributed throughout the Site. Both were primarily recorded in association with the fields rather than boundary features.

9.4.48 Notable thrushes recorded onsite during the winter bird surveys were song thrush, redwing, mistle thrush, fieldfare and ring ouzel. Birds were found to be using the field and boundary features in equal proportions. A peak count of 1394 was recorded on 26/11/2020 and constituted one song thrush, 381 redwing and 330 fieldfare in Fields 67, 15, 13, and 47. Ring ouzel were recorded as individuals on two occasions in October 2019 and November 2023 and likely represent individuals on autumn migration.

9.4.49 Barn owl were recorded within 22 fields onsite with Fields 35, 18 and 92 having the highest number of records at 2 over the survey period (refer to **Figure 9.1.9**).

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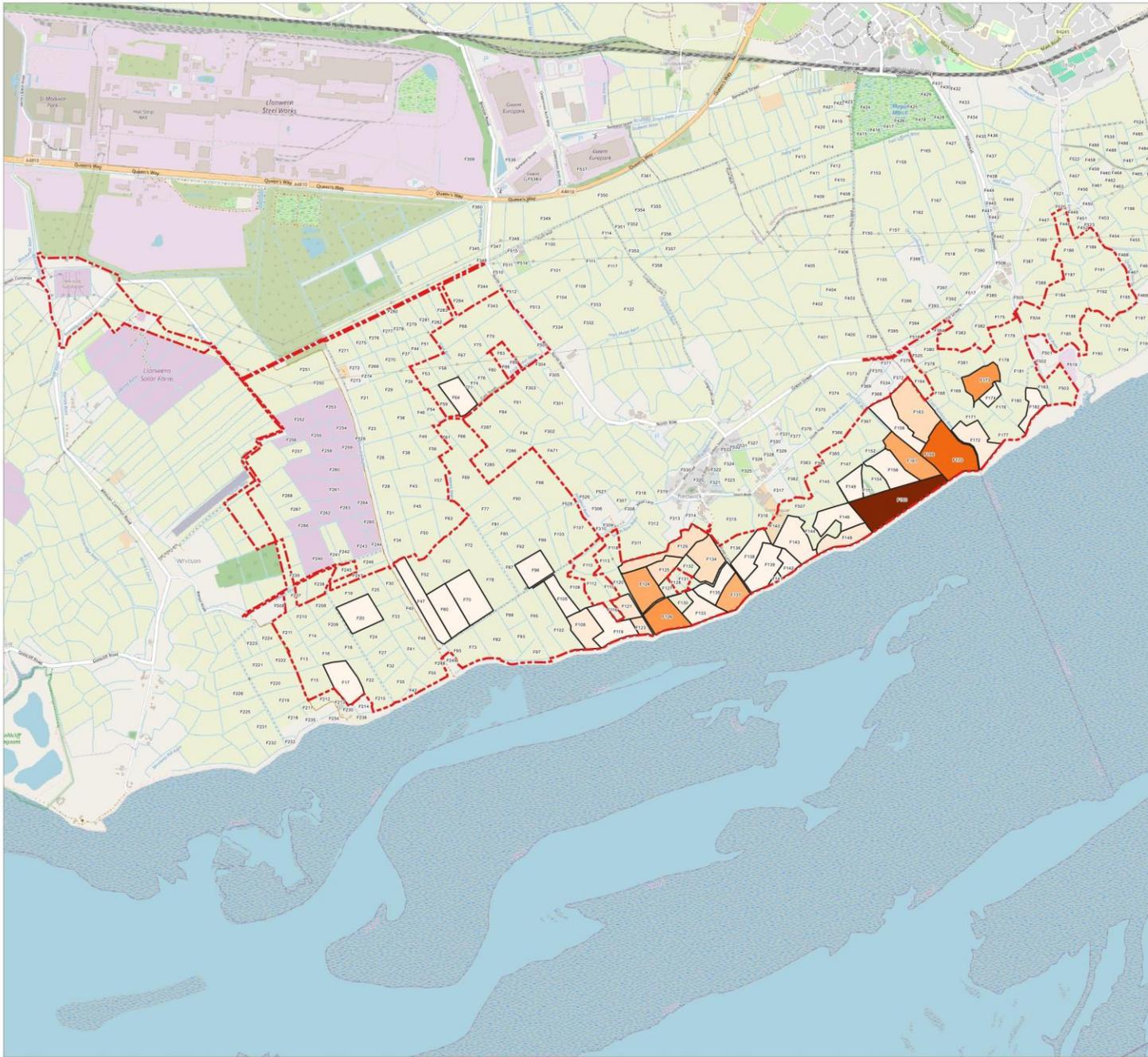
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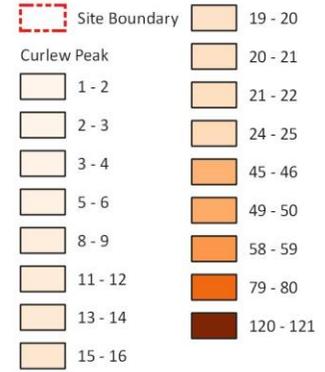
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Annex A: Figures



Key:



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Figure 9.1.1:
Winter Bird Survey Results: Curlew

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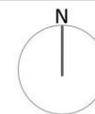
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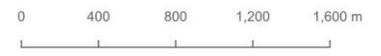
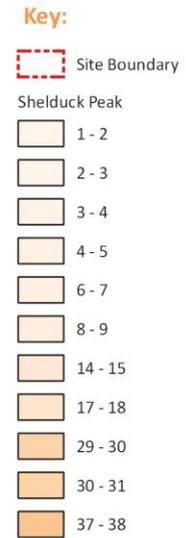
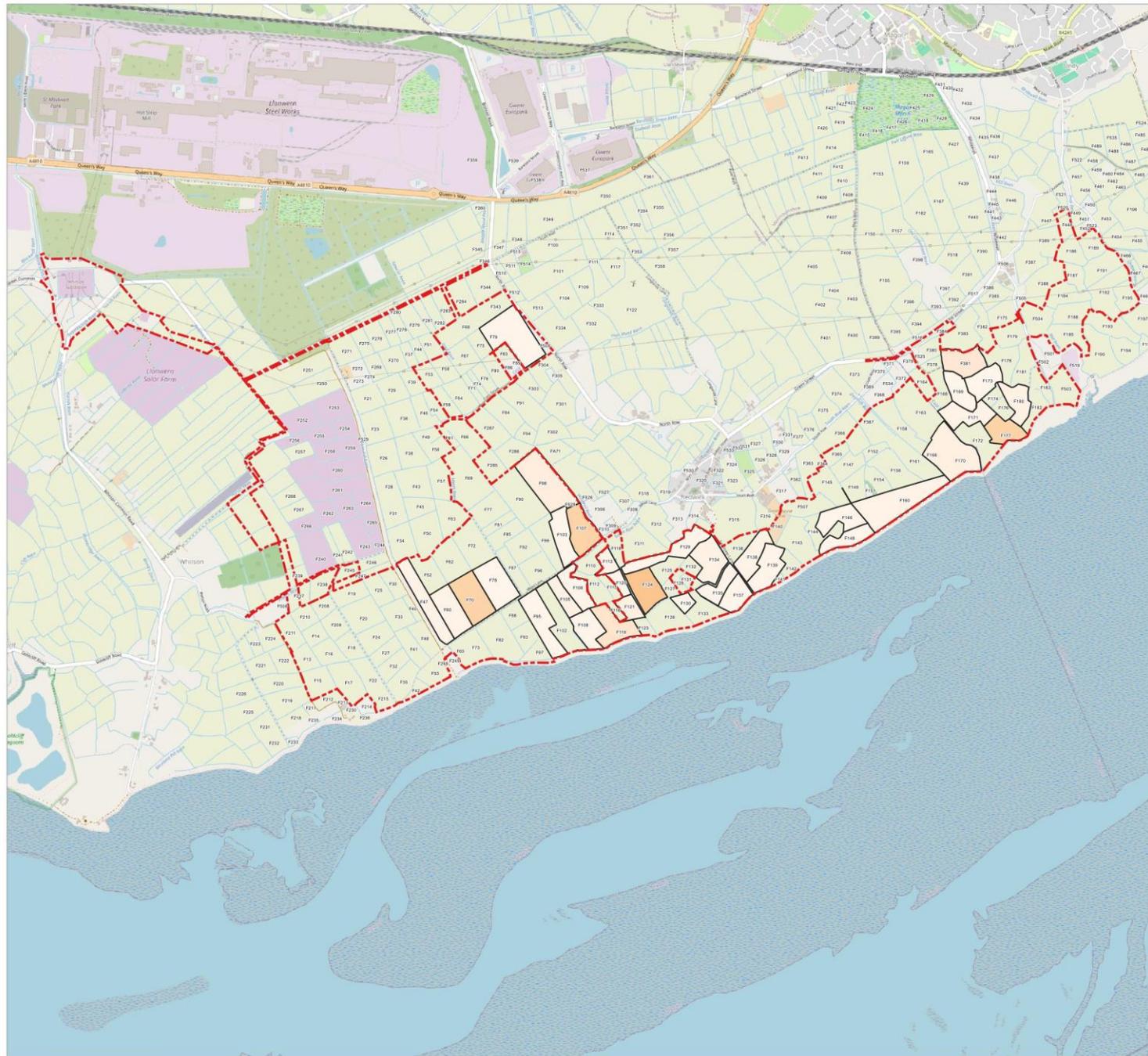
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Figure 9.1.2:
Winter Bird Survey Results: Shelduck

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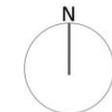
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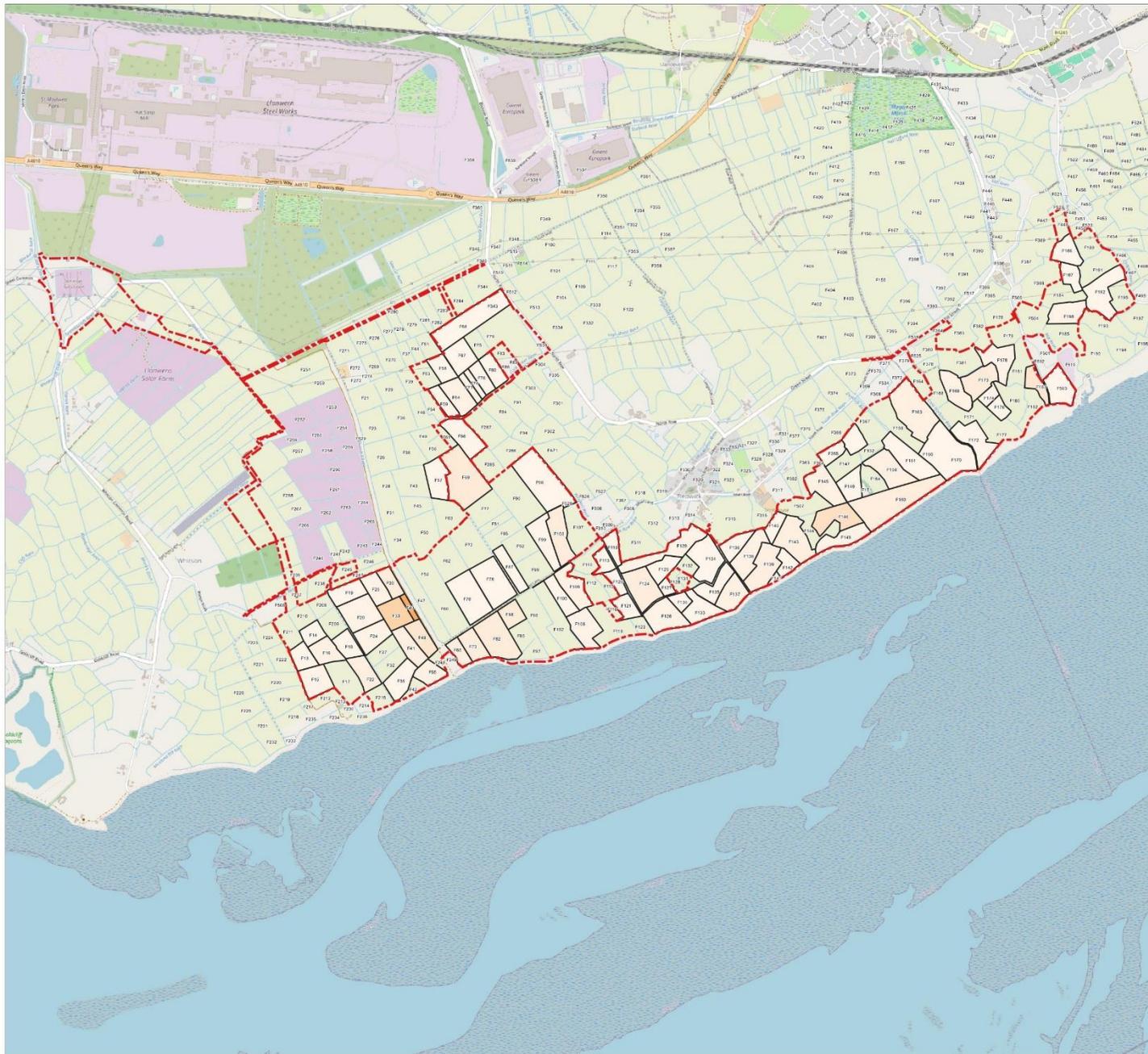
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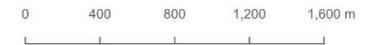
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Key:

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	Snipe Peak		10 - 11
	1 - 2		11 - 12
	2 - 3		12 - 13
	3 - 4		14 - 15
	4 - 5		15 - 16
	5 - 6		20 - 21
	6 - 7		29 - 30
	7 - 8		49 - 50
	8 - 9		



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Figure 9.1.3:
Winter Bird Survey Results: Snipe

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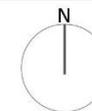
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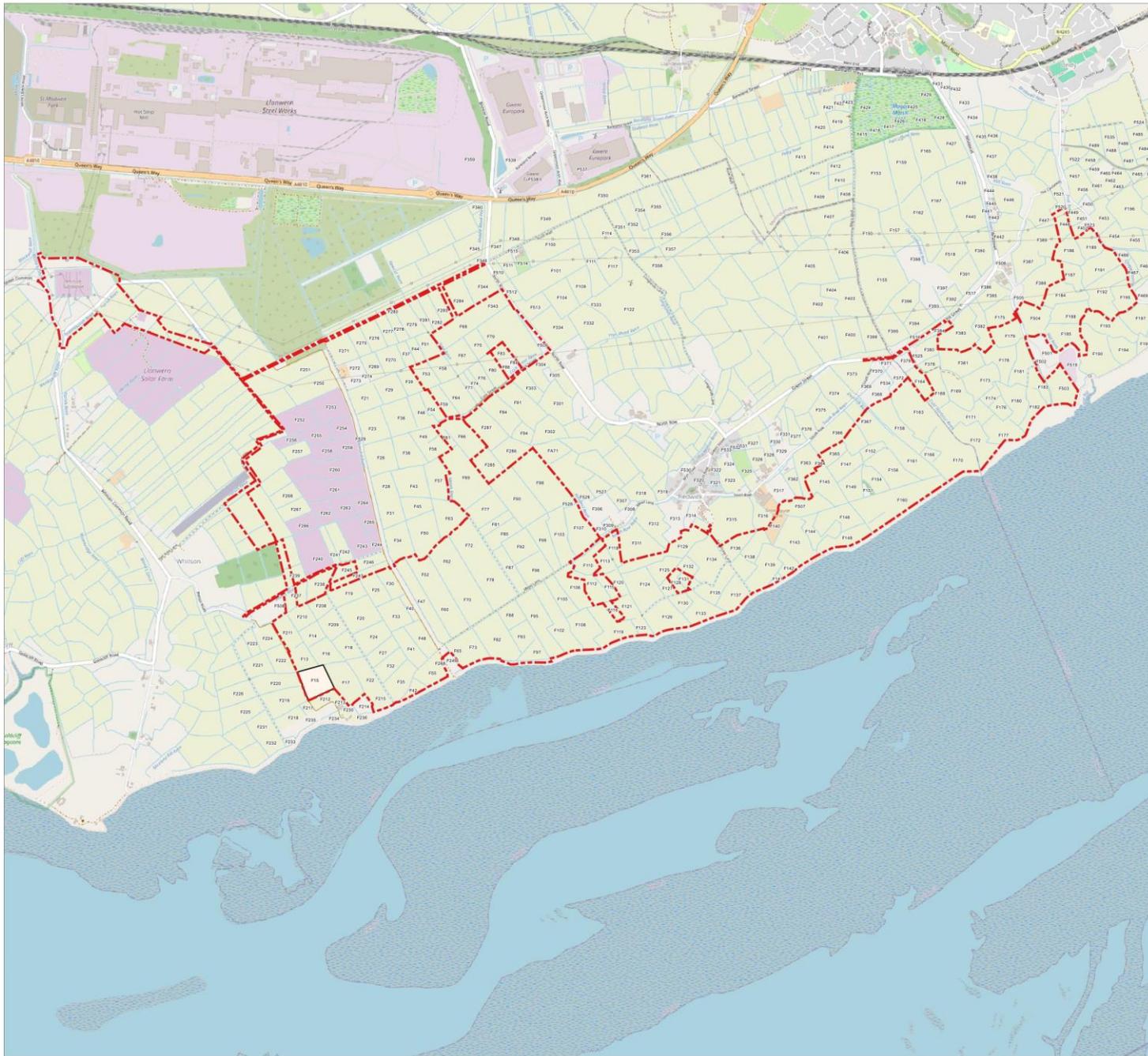
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Revision:
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Key:

 Site Boundary

White-fronted Goose Peak

 1 - 2



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Figure 9.1.4:
Winter Bird Survey Results: White-fronted Goose

Project:

Future Energy Llanern

Client:

Future Energy Llanern Limited

Date:

14/11/2025

Drawn:

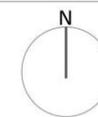
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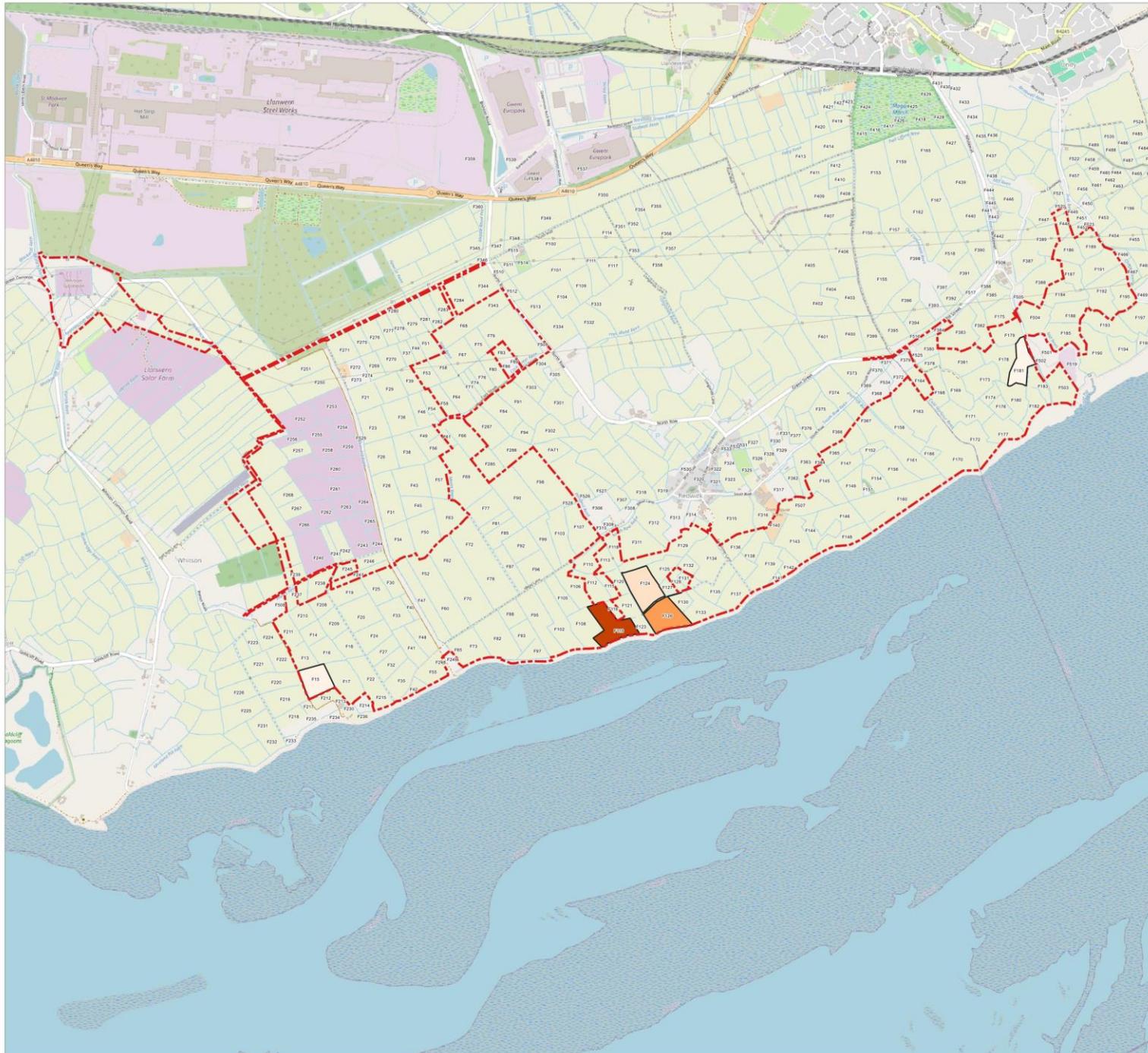
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Revision:

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Key:

Site Boundary

Dunlin Peak

1 - 2

3 - 4

19 - 20

55 - 56

99 - 100

0 400 800 1,200 1,600 m

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Ordnance Survey 0100031673.

Figure 9.1.5:
Winter Bird Survey Results: Dunlin

Project:

Future Energy Llanwrnny

Client:

Future Energy Llanwrnny Limited

Date:

14/11/2025

Drawn:

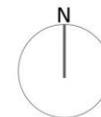
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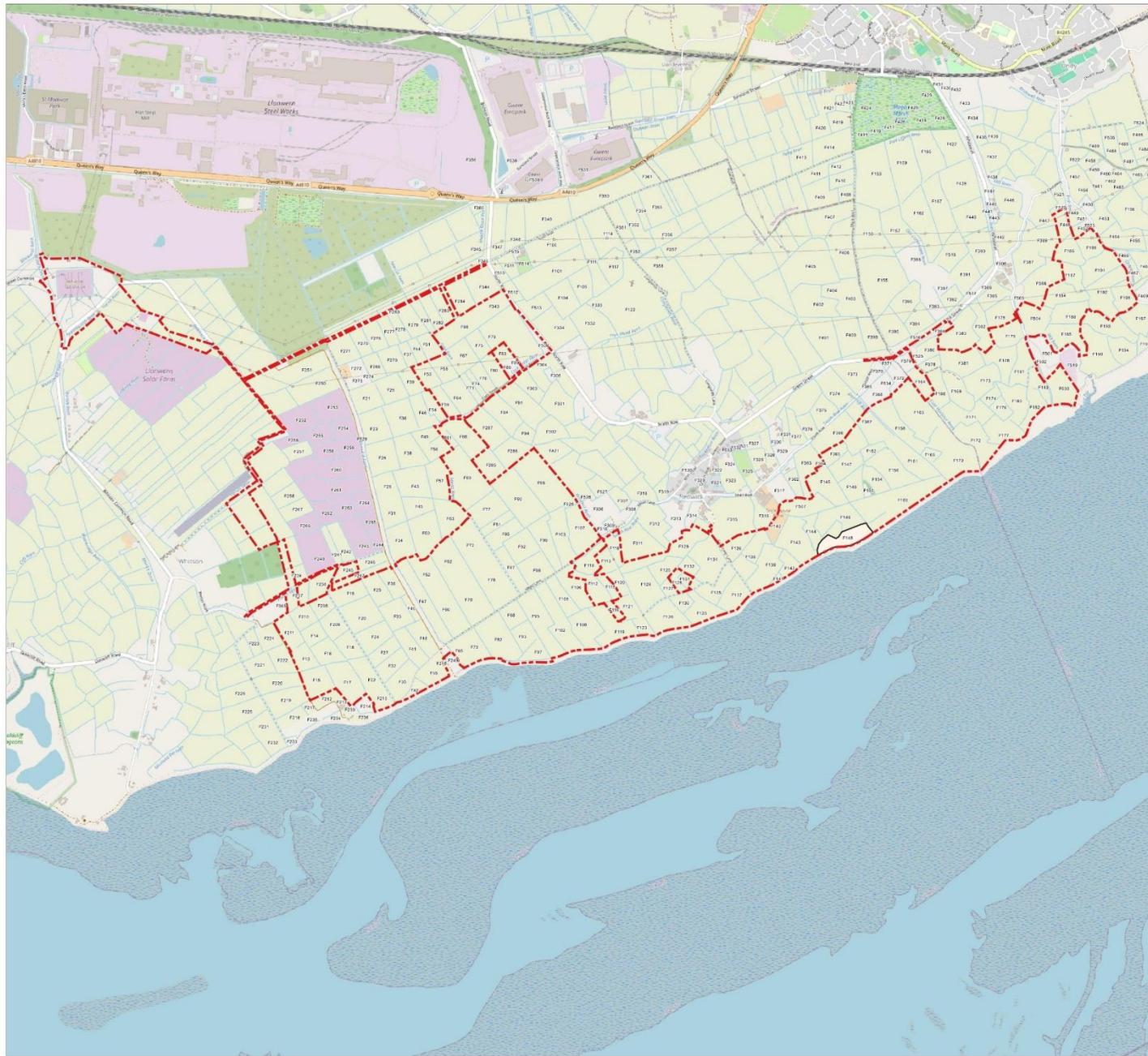
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Revision:

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Key:

 Site Boundary

Redshank Peak

 1-2



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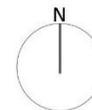
Figure 9.1.6:
Winter Bird Survey Results: Redshank

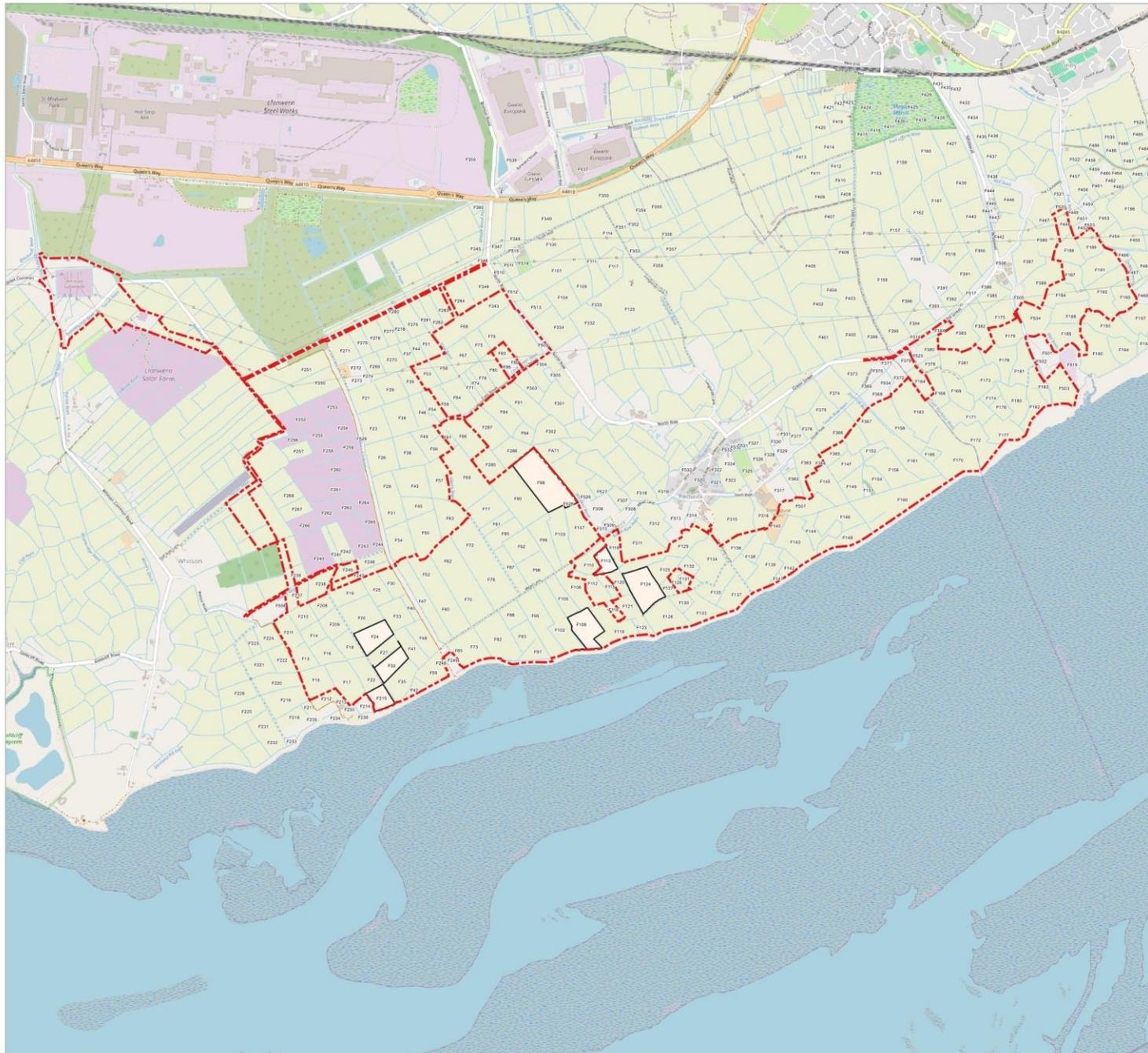
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Revision:
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Key:

 Site Boundary

Gadwall Peak

-  1 - 2
-  3 - 4
-  4 - 5

0 400 800 1,200 1,600 m

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Figure 9.1.7:
Winter Bird Survey Results: Gadwall

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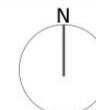
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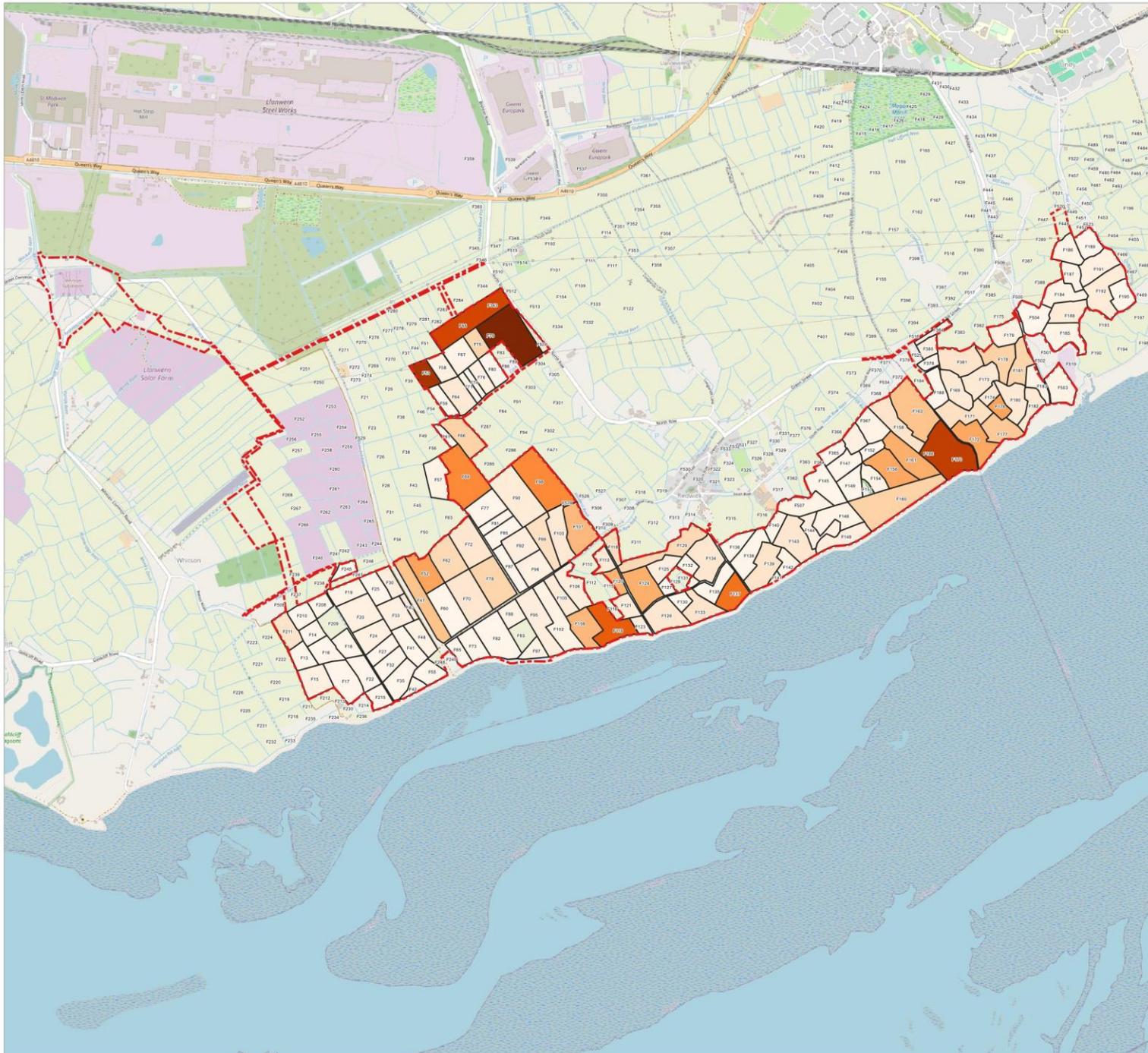
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Key:

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	Assemblage Peak		151 - 161
	1 - 11		171 - 181
	11 - 21		181 - 191
	21 - 31		191 - 201
	31 - 41		201 - 211
	41 - 51		211 - 221
	51 - 61		261 - 271
	61 - 71		301 - 311
	71 - 81		341 - 351
	81 - 91		391 - 401
	91 - 101		411 - 421
	101 - 111		441 - 451
	111 - 121		491 - 501
	121 - 131		



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Figure 9.1.8:
Winter Bird Survey Results: Waterbird Assemblage

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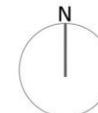
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Future Energy Llanwern Limited

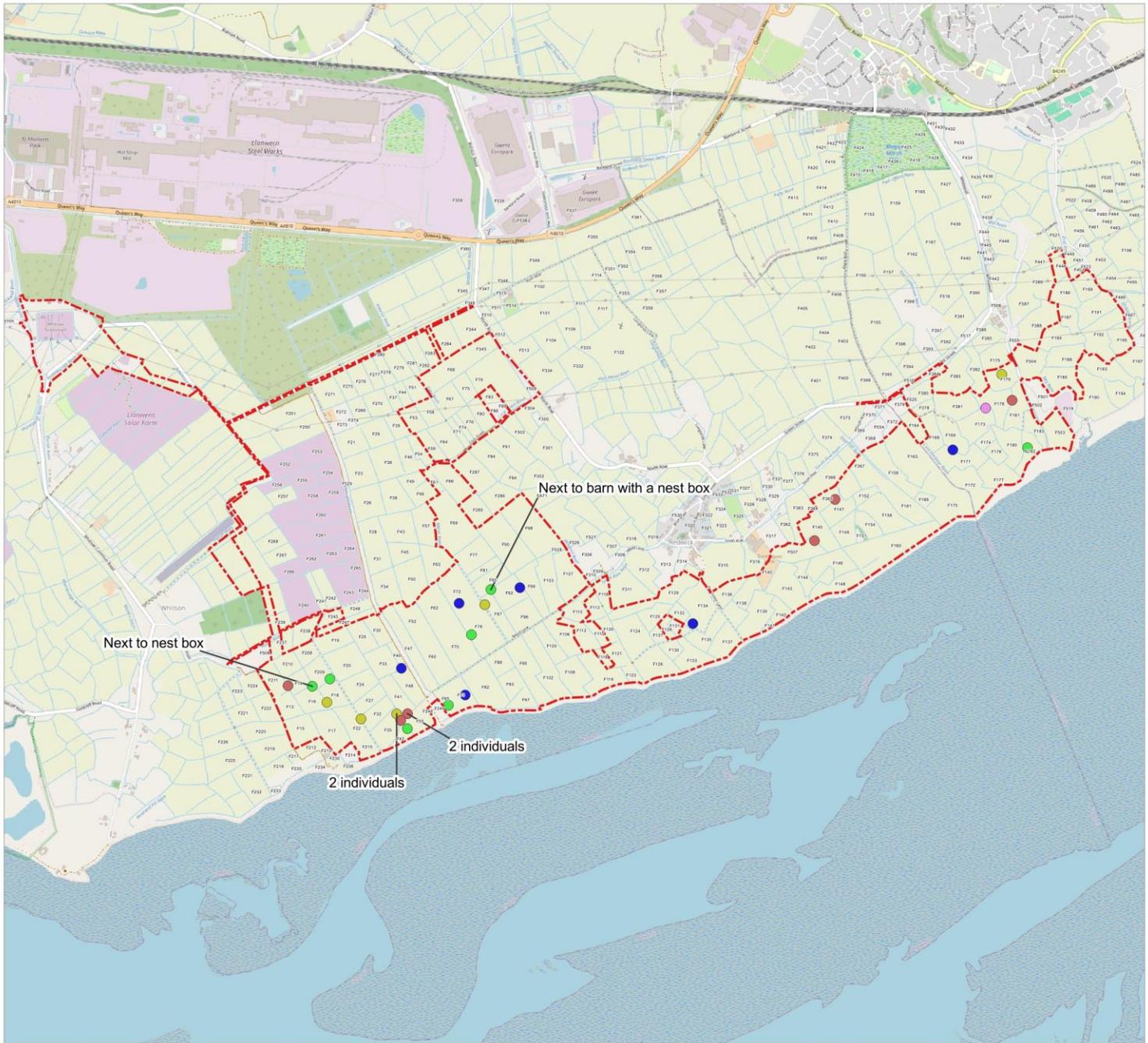
Date:
14/11/2025

Drawn:
JH

Ref:
0840-ETA-9.1.8

Revision:
-





Key:

Site Boundary

Barn Owl Records

- 2019
- 2020
- 2021
- 2022
- 2023



Base Map: (c) Crown copyright and database rights 2025. Ordnance Survey 0100031673.

Figure 9.1.9:
Winter Bird Survey Results: Barn Owl

Project:
Future Energy Llanerni

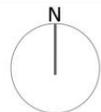
Client:
Future Energy Llanerni Limited

Date:
14/11/2025

Drawn:
JH

Ref:
0840-ETA-9.1.9

Revision:
-



Annex B: Weather Summary

2019-2022 Diurnal Survey Weather Data

Survey Number	Date	Start Time	Finish Time	Tide Type	Tide Time	Temperature °C start	Temperature °C finish	Wind Speed (BFS) start	Wind Speed (BFS) finish	Wind Direction start	Wind Direction finish	Cloud (oktas) start	Cloud (oktas) finish	Precipitation start	Precipitation finish	Visibility start	Visibility finish	Notes
1	02/10/2019	08:20	11:50	H	10:09	8	15	0	0	N	N	0	2	None	None	>2km	>2km	
	03/10/2019	08:30	12:00	H	10:48	8	16	0	1	ESE	ESE	8	7	None	None	>2km	>2km	Start: variable cloud height. End: sunny intervals
2	07/10/2019	07:20	10:45	L	07:26	10	12	2	2	WSW	WSW	7	7	Drizzle	Drizzle	1km-2km	1km-2km	
	08/10/2019	07:20	10:50	L	09:19	13	16	1	2	WSW	WSW	4	8	None	None	1km-2km	1km-2km	
3	14/10/2019	07:30	11:00	H	08:18	12	14	1	1	E	E	8	8	None	Drizzle	>2km	>2km	
	15/10/2019	07:30	11:30	H	08:51	10	10	1	1	E	E	8	8	None	None	1km-2km	>2km	
4	24/10/2019	08:50	12:50	L	10:50	9	14	1	2	SW	W	8	6	None	None	1km-2km	>2km	
	27/10/2019	10:45	14:45	L	12:46	10	12	1	1	W	N	1	2	None	None	>2km	>2km	
	28/10/2019	10:30	14:15	L	13:37	7	9	2	3	NE	NE	7	7	None	None	>2km	>2km	
5	06/11/2019	07:15	11:30	L	07:25	5	7	1	1	S	S	8	8	None	Light Rain	1km	500-1km	
	07/11/2019	07:15	11:35	L	09:07	4	8	0	0	WSW	WSW	2	2	None	None	>2km	>2km	
	08/11/2019	08:15	11:30	L	10:18	6	9	1	2	N	N	4	1	None	None	>2km	>2km	
	10/11/2019	10:00	13:45	L	11:56	6	9	4	2	NNE	NNE	1	1	None	None	>2km	>2km	
6	20/11/2019	10:30	14:50	H	12:29	9	8	2	3	SE	SE	7	8	None	None	>2km	>2km	
	21/11/2019	12:00	16:00	H	13:56	7	5	3	3	ENE	ENE	7	8	None	None	>2km	>2km	
7	03/12/2019	09:00	13:10	H	11:00	6	10	0-1	01-Feb	S	S	6	3	None	None	>2km	>2km	
	04/12/2019	10:00	14:00	H	12:02	2	6	0-1	1	E	E	6	1	None	None	>2km	>2km	
8	09/12/2019	09:00	13:30	L	11:09	6	10	4	3	NW	NW	3	2	None	None	>2km	>2km	
	11/12/2019	10:45	14:45	L	12:47	7	6	3	2	WSW	WSW	8	8	None	Light Rain	>2km	1km-2km	Rain with sunny intervals
9	09/01/2020	11:00	15:30	L	12:16	9	8	3	01-Feb	WSW	WSW	8	8	None	Rain	>2km	>2km	
	10/01/2020	11:10	14:20	L	12:56	7	8	2	1	W	W	2	1	None	None	>2km	>2km	

10	16/01/2020	09:00	13:00	H	11:03	9	11	4	5	S	S	7	8	None	Heavy Rain	>2km	1km	horizontal rain for last 45mins
	17/01/2020	11:00	15:05	H	11:54	8	7	03-Apr	3	W	W	4	5	None	Heavy Rain	1km-2km	1km	
	30/01/2020	08:15	12:30	H	10:14	9	10	1	2	SSE	SW	7	8	None	Light Rain	no data	no data	
11	17/02/2020	09:45	15:35	H	13:24	7	8	03-Apr	4	W	W	5	7	Light Rain	None	>2km	>2km	
	18/02/2020	12:45	15:45	H	14:47	8	8	5	05-Jun	WSW	WSW	6	8	Rain Showers	Rain Showers	>2km	>2km	
12	24/02/2020	12:45	16:25	L	14:24	10	12	6	5	WSW	WSW	8	8	Drizzle	Drizzle	1km-2km	1km-2km	Wind gusts of 6-7 on occasions
	25/02/2020	13:00		L	15:01	7	6	4	3	W	W	7	7	None	Light Rain	1km-2km	1km-2km	sun and showers
	26/02/2020	13:30	17:35	L	15:28	8	7	4	3	W	W	4	4	None	None	1km-2km	1km-2km	
	27/02/2020	13:40	16:45	L	15:42	8	6	5	5	NW	NW	4	6	Drizzle	None	1km-2km	1km-2km	
13	03/03/2020	10:15	14:25	H	12:16	8	11	4	3	NW	NW	4	4	None	None	>2km	>2km	
	04/03/2020	11:00	15:35	H	13:33	6	8	3	2	E	E	8	8	Rain	Rain	1km	1km	
	12/03/2020	07:00	11:15	H	09:05	5	8	5	5	WSW	WSW	8	6	Snow/Sleet	None	500-1km	500-1km	Heavy hail showers
14	05/03/2020	06:50	10:50	L	08:48	6	5	3	3	NE	NE	8	8	Light Rain	None	1km	>2km	
	06/03/2020	08:30	12:45	L	10:28	3	6	1	1	SW	SW	2	7	None	None	>2km	>2km	
15	09/03/2020	11:40	15:36	L	13:40	8	9	3	03-Apr	WSW	SW	8	8	None	Light Rain	>2km	1km-2km	Heavy rain between 13:00-13:20
	10/03/2020	12:30	16:30	L	14:31	10	12	03-Apr	03-Apr	WSW	WSW	8	8	Drizzle	Drizzle	1km-2km	1km-2km	Strong Gusts
16	17/03/2020	10:30	14:40	H	12:45	11	12	2	02-Mar	SW	SW	8	8	Drizzle	Drizzle	1km-2km	>2km	
	18/03/2020	12:20		H	14:22	11	10	2	2	SW	SW	8	8	None	None	>2km	>2km	
17	01/10/2020	12:20	17:20	L	14:18	14	15	3	2	WSW	SSW	6	5	None	None	no data	no data	
	26/10/2020	07:30	11:00	L	09:32	9	13	2	3	W	W	5	3	Drizzle	None	1km-2km	>2km	
18	06/10/2020	08:15	13:10	H	10:12	12	15	3	4	W	W	4	4	None	None	1km-2km	1km-2km	
	07/10/2020	08:35	13:15	H	10:35	10	14	1	2	NNW	NNW	4	4	None	None	no data	no data	
19	13/10/2020	09:15	13:45	L	11:13	10	13	1	2	NW	NW	6	5	None	None	1km-2km	>2km	
	28/10/2020	09:15	13:15	L	11:14	10	10	5	5	SW	SW	8	8	Rain Showers	Light Rain	1km-2km	1km-2km	Heavy Showers
	30/10/2020	10:45	14:45	L	12:44	15	15	4	2	SW	WSW	8	8	Light Rain	Light Rain	1km	1km	

20	19/10/2020	07:35	11:35	H	09:37	9	12	2	1	S	S	7	7	None	None	1km-2km	1km-2km	
	20/10/2020	08:15	12:15	H	10:16	14	16	4	3	S	S	6	4	None	None	1km-2km	>2km	
21	01/11/2020	12:05	16:05	L	14:05	14	15	5	4	WSW	SW	8	8	Drizzle	Drizzle	1km	1km	
	03/11/2020	12:15	16:30	L	14:54	10	9	4	2	W	W	5	3	None	None	1km-2km	1km-2km	
	27/11/2020	09:15	11:45	L		0	2	0	1	ENE	ENE	8	8	None	None	500-1km	500-1km	Foggy
22	05/11/2020	07:15	10:55	H	09:15	3	9	1	1	N	NE	1	2	None	None	1km-2km	1km-2km	
	06/11/2020	07:50	11:50	H	09:48	2	9	2	2	ENE	ENE	2	0	None	None	500-1km	1km-2km	Misty to begin with
23	14/12/2020	11:00	15:00	L	13:02	10	11	4	4	SSW	SSW	4	5	None	None	1km-2km	1km-2km	
	15/12/2020	11:50	15:50	L	13:52	9	10	3	4	S	SSW	2	5	None	None	1km-2km	1km-2km	
24	24/12/2020	11:40	15:10	H	14:40	6	7	4	3	NNW	N	3	4	None	None	1km-2km	1km	
	21/12/2020	09:40	13:10	H	11:38	12	13	6	4	N	N	8	8	Heavy Rain	Rain	no data	no data	
25	22/12/2020	10:35	13:20	H	12:36	7	9	2	3	S	SE	7	7	None	None	no data	no data	
	06/01/2021	10:00	13:30	H	12:03	2	3	3	3	NNE	NNE	8	8	None	None	1km-2km	1km-2km	
26	07/01/2021	11:05	15:15	H	13:05	-1	2	1	1	W	W	8	8	None	None	0-500	0-500	Heavy fog
	27/01/2021	10:30	15:15	L	12:27	9	9	1	2	WSW	WSW	8	8	None	None	0-500	1km	Foggy
	25/01/2021	08:35	12:03	L	10:35	-2	3	1	2	W	W	1	1	None	None	1km-2km	1km-2km	
	28/01/2021	11:20	15:05	L	13:20	11	11	2	1	WSW	WSW	7	7	None	Drizzle	1km-2km	1km-2km	
27	29/01/2021	11:20	15:20	L	14:11	9	10	4	4	W	W	8	8	None	None	1km	1km	
	04/02/2021	09:35	13:35	H	11:37	5	7	2	2	ESE	ESE	8	8	Drizzle	Rain	1km-2km	500-1km	
	05/02/2021	10:30	15:45	H	12:32	7	8	2	2	SSE	S	4	7	None	Rain	>2km	1km-2km	
28	06/02/2021	11:20	14:20	H	13:42	4	no data	1	2	E	ENE	6	6	None	None	1km-2km	1km-2km	
	09/02/2021	09:30	13:30	L	11:33	-1	2	4	4	ENE	ENE	4	7	None	None	1km-2km	1km-2km	
29	10/02/2021	10:30	14:30	L	12:32	0	2	3	3	NE	NE	4	4	None	None	>2km	>2km	
	03/03/2021	07:55	11:55	H	09:54	3	7	2	2	ENE	ENE	8	8	None	None	0-500	0-500	Very misty
	04/03/2021	08:30	12:30	H	10:31	5	5	2	2	NE	NE	8	8	None	None	500-1km	500-1km	
30	09/03/2021	08:15	10:45	L	10:17	3	7	2	2	WSW	WSW	2	2	None	None	no data	no data	
	11/03/2021	10.2	14.3	L	12:17	8	9	5	5	W	WSW	6	8	None	None	1km-2km	1km-2km	
	13/03/2021	12:00	15:00	L	13:55	8	7	5	4	W	W	5	6	None	Light Rain	>2km	>2km	
31	18/03/2021	07:30	11:50	H	09:49	6	11	1	1	WNW	NW	5	5	None	None	1km-2km	1km-2km	
	19/03/2021	08:10	12:35	H	10:11	9	10	3	3	NE	NE	6	8	None	None	>2km	>2km	

32	26/03/2021	08:40	13:15	L	11:45	8	9	3	3	WSW	WSW	8	7	Rain	Drizzle	1km	1km
	25/03/2021	08:40	Dec-30	L	10:42	9	11	3	3	SSW	SW	8	6	Light Rain	Drizzle		

2019-2022 Nocturnal Survey Weather Data

Survey Number	Date	Start Time	Finish Time	High Tide Time	Temperature (degrees Celsius) start	Temperature (degrees Celsius) finish	Wind Speed (BFS) start	Wind Speed (BFS) finish	Wind Direction start	Wind Direction finish	Cloud (oktas) start	Cloud (oktas) finish	Precipitation start	Precipitation finish	Visibility start	Visibility finish
1	16/10/2019	19:35	22:05	21:36	11	8	1	1	W	W	2	4	None	None	no data	no data
	29/10/2019	18:00	20:30	19:59	9	9	4	4	NE	NE	8	8	None	None	no data	no data
	28/10/2019	17:15	20:00	19:16	8	8	1	1	SW	SW	8	6	None	None	>2km	>2km
	19/10/2019	21:10	23:40	23:11	8	7	1	1	W	SW	1	7	None	None	no data	no data
2	26/11/2019	16:50	19:20	18:53	10	no data	3	no data	no data	no data	8	no data	Light Rain	no data	no data	no data
	28/11/2019	18:20	21:00	20:18	9	7	1	01-Feb	NW	NW	8	8	None	Rain	1km-2km	>2km
	27/11/2019	17:35	20:30	19:37	9	7	1	4	W	W	8	no data	None	Light Rain	>2km	no data
3	12/12/2019	17:20	20:30	19:18	7	8	02-Mar	1	no data	no data	8	8	None	Rain	1km-2km	1km-2km
	13/12/2019	18:00	21:00	20:00	7	no data	4	no data	W	no data	no data	no data	None	no data	no data	no data
	14/12/2019	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
	28/12/2019	16:45	21:15	18:46	3	1	0	0	no data	no data	0	0	None	None	500-1km	500-1km
4	12/01/2020	18:30	21:30	20:33	7	6	0	01-Feb	SW	SW	8	5	None	None	>2km	>2km
	26/01/2020	18:30	22:30	20:28	7	no data	2	no data	WSW	no data	4	no data	None	None	no data	no data
	27/01/2020	19:00	22:00	21:02	7	5	2	no data	SW	no data	8	no data	None	Rain	no data	no data
	22/01/2020	20:20	00:45	22:18	7	7	0	1	no data	no data	8	8	None	None	>2km	>2km
5	10/02/2020	18:20	21:20	20:23	5	6	5	7	W	W	7	1	Rain Showers	None	0-500	0-500
	11/02/2020	18:20	22:10	21:06	5	4	4	7	W	W	5	6	None	Rain Showers	1km-2km	1km-2km
	12/02/2020	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
	16/02/2020	17:55	21:50	no data	6	5	2	1	S	S	5	7	None	None	>2km	>2km

6	25/03/2020	18:45	21:45	20:12	10	3	1	1	ENE	ENE	0	0	None	None	1km-2km	500-1km
	26/03/2020	18:55	21:55	20:40	8	7	1	1	NE	NE	1	0	None	None	1km-2km	500-1km
	27/03/2020	19:00	no data	21:05	7	5	1	4	NE	NE	1	0	None	None	>2km	>2km
7	16/10/2020	17:45	21:15	19:46	10	9	1	1	ENE	ENE	5	3	None	None	1km-2km	500-1km
	17/10/2020	18:35	22:30	20:32	11	9	2	1	NE	NE	7	8	None	None	1km-2km	>2km
	18/10/2020	17:15	22:15	21:15	10	8	1	1	SSE	SSE	8		None	None	>2km	>2km
8	17/11/2020	18:40	21:50	20:38	12	12	3	2	W	W	8	8	None	None	no data	no data
	19/11/2020	20:00	23:00	22:00	6	5	2	2	NW	NW	6	7	None	None	>2km	>2km
	15/11/2020	17:10	20:25	19:09	8	8	4	4	SW	SW	4	7	Drizzle	Light Rain	>2km	>2km
9	01/12/2020	17:50	20:50	19:48	6	5	1	1	NNW	NNW	6	8	None	None	>2km	>2km
	02/12/2020	18:50	21:20	20:21	6	5	2	2	W	W	3	4	None	None	>2km	>2km
	03/12/2020	18:50	21:55	20:54	3	2	1	1	NW	NW	7	6	None	None	500-1km	500-1km
10	13/01/2021	17:30	20:40	19:29	10	9	3	3	W	W	8	8	None	None	>2km	>2km
	14/01/2021	18:15	21:20	20:16	6	4	2	2	NNW	NNW	6	8	Light Rain	None	500-1km	500-1km
	15/01/2021	19:00	22:00	20:57	0	2	1	1	SE	SE	7	8	None	None	no data	no data
11	15/02/2021	19:40	22:50	21:42	9	9	3	3	S	SSE	8	8	None	Light Rain	1km-2km	500-1km
	16/02/2021	20:10	23:15	22:08	8	7	3	3	SW	SSW	5	6	None	Drizzle	500-1km	0-500
	18/02/2021	21:00	00:00	23:00	5	5	3	3	SW	SW	3	4	None	None	1km-2km	500-1km
12	13/03/2021	18:30	21:35	20:16	6	5	4	4	W	W	4	5	None	None	1km-2km	>2km
	14/03/2022	18:30	21:35	20:16	9	9	3	3	W	W	6	8	Light Rain	None	1km-2km	>2km
	15/03/2023	18:45	22:15	20:46	9	8	2	2	W	W	1	4	None	None	>2km	>2km

2022-2023 Data Collected from Weather Station

Survey Type	Date	Start Time	Barometer	Temperature	Wind Speed	Wind Direction	Wind Run	High Wind Speed	High Wind Direction	Wind Chill	Heat Index	THW Index	Rain
HT Transect	30/10/2022	07:55	1010,8	14,6	10,0	S	0,83	16,0	S	12,8	14,7	12,8	0,0

Survey Type	Date	Start Time	Barometer	Temperature	Wind Speed	Wind Direction	Wind Run	High Wind Speed	High Wind Direction	Wind Chill	Heat Index	THW Index	Rain
HT Transect	31/10/2022	08:40	1012,3	14,6	5,0	SSE	0,42	9,0	SSE	14,4	14,7	14,5	0,0
HT Transect	01/11/2022	09:45	1004,5	13,7	19,0	SW	1,58	26,0	SW	9,8	13,5	9,6	0,0
LT Transect	03/11/2022	07:00	1000,4	10,3	5,0	SW	0,42	10,0	SW	9,4	10,5	9,6	0,0
HT VP	03/11/2022	12:50	999,6	10,5	4,0	SW	0,33	6,0	SW	9,9	10,6	10,0	0,0
LT Transect	04/11/2022	08:05	1012,1	5,6	1,0	NW	0,08	2,0	NW	5,6	5,6	5,6	0,0
HT VP	04/11/2022	14:00	1014,9	13,1	4,0	W	0,33	11,0	W	12,9	12,6	12,4	0,0
LT VP	05/11/2022	09:55	1012,1	11,8	11,0	SSW	0,92	15,0	SSW	9,2	11,9	9,3	0,0
LT VP	06/11/2022	10:45	1000,1	12,4	9,0	SSW	0,75	13,0	SW	10,6	12,5	10,7	0,2
LT VP	07/11/2022	11:35	1001,5	13,8	8,0	SSW	0,67	12,0	SSE	12,6	13,8	12,6	0,0
Nocturnal	10/11/2022	18:15	1020,0	13,6	10,0	SW	0,83	16,0	SSW	11,5	13,6	11,6	0,0
Nocturnal	11/11/2022	18:45	1025,3	13,3	9,0	S	0,75	13,0	S	11,6	13,4	11,7	0,0
Nocturnal	12/11/2022	19:10	1022,1	13,8	2,0	SE	0,17	7,0	SSE	13,8	13,9	13,9	0,0
LT Transect	13/11/2022	13:35	1015,0	16,4	5,0	E	0,42	9,0	ENE	16,4	16,5	16,5	0,0
LT Transect	14/11/2022	14:00	1006,0	12,6	8,0	WSW	0,67	13,0	WSW	11,2	12,7	11,3	0,0
HT Transect	18/11/2022	12:10	1002,8	11,2	8,0	W	0,67	19,0	W	9,5	11,1	9,4	0,0
HT Transect	19/11/2022	13:20	1013,8	8,4	3,0	SW	0,25	4,0	SW	8,1	8,4	8,0	0,0
VP Dusk	20/11/2022	14:45	1007,7	10,3	8,0	W	0,67	16,0	NW	8,5	10,2	8,4	0,0
VP Dusk	21/11/2022	14:45	984,8	8,2	8,0	W	0,67	14,0	WNW	5,9	8,2	5,9	0,0
HT Transect	01/12/2022	11:05	1030,1	4,3	2,0	NE	0,17	5,0	NE	4,1	4,3	4,2	0,0
HT Transect	02/12/2022	12:15	1026,6	3,5	2,0	NE	0,17	5,0	ENE	3,3	3,5	3,3	0,0
LT Transect	05/12/2022	10:10	1023,4	6,6	5,0	NE	0,42	9,0	ENE	5,0	6,6	5,0	0,0
LT Transect	06/12/2022	11:00	1025,8	5,4	4,0	NE	0,33	9,0	NE	4,1	5,3	4,0	0,0
Nocturnal	07/12/2022	16:35	1020,1	1,1	0,0		0,00	0,0		1,1	1,0	1,0	0,0
Nocturnal	08/12/2022	17:15	1010,3	2,1	1,0	ENE	0,08	2,0	ENE	2,1	2,0	2,0	0,0
Nocturnal	09/12/2022	17:55	1009,2	-1,1	0,0		0,00	0,0		-1,1	-1,2	-1,2	0,0
LT Transect	04/01/2023	09:30	1013,7	11,9	18,0	WSW	1,50	27,0	WSW	7,9	12,0	8,0	0,0
LT Transect	05/01/2023	10:15	1019,3	9,7	8,0	SW	0,67	11,0	WSW	7,7	10,0	8,0	0,0

Survey Type	Date	Start Time	Barometer	Temperature	Wind Speed	Wind Direction	Wind Run	High Wind Speed	High Wind Direction	Wind Chill	Heat Index	THW Index	Rain
Nocturnal	06/01/2023	17:00	1008,5	10,8	13,0	S	1,08	21,0	SSE	7,6	11,0	7,8	0,0
Nocturnal	07/01/2023	17:45	994,0	7,9	15,0	SW	1,25	21,0	SW	3,9	8,0	3,9	0,0
Nocturnal	08/01/2023	18:15	987,4	6,4	12,0	SSW	1,00	17,0	SW	2,8	6,4	2,8	0,0
HT Transect	13/01/2023	08:30	1007,8	8,3	15,0	WSW	1,25	28,0	W	4,3	8,2	4,2	0,0
HT Transect	14/01/2023	09:15	994,5	10,6	11,0	WSW	0,92	20,0	WSW	7,8	10,8	8,0	0,0
LT Transect	02/02/2023	09:00	1027,9	9,1	9,0	WSW	0,75	13,0	W	6,6	9,3	6,8	0,0
LT Transect	03/02/2023	09:45	1032,3	9,2	10,0	WSW	0,83	14,0	WSW	6,5	9,5	6,7	0,0
Nocturnal	05/02/2023	17:30	1045,6	3,4	0,0		0,00	0,0		3,4	3,3	3,3	0,0
Nocturnal	06/02/2023	18:00	1039,0	3,4	0,0		0,00	0,0		3,4	3,3	3,3	0,0
Nocturnal	07/02/2023	18:30	1037,8	2,3	0,0		0,00	0,0		2,3	2,3	2,3	0,0
HT Transect	12/02/2023	08:45	1037,3	6,9	1,0	NE	0,08	3,0	NE	6,9	7,0	7,0	0,0
HT Transect	13/02/2023	09:30	1033,7	6,6	4,0	ESE	0,33	8,0	ESE	5,5	6,6	5,4	0,0
HT Transect	01/03/2023	12:00	1030,7	7,2	6,0	NE	0,50	10,0	NE	5,3	7,1	5,2	0,0
HT Transect	02/03/2023	13:30	1026,7	7,7	5,0	NE	0,42	9,0	NE	6,3	7,5	6,1	0,0
LT Transect	03/03/2023	08:15	1029,8	3,7	6,0	NE	0,50	14,0	ENE	1,2	3,5	1,0	0,0
LT Transect	04/03/2023	09:30	1032,2	4,7	5,0	NE	0,42	8,0	E	2,8	4,5	2,6	0,0
Nocturnal	08/03/2023	18:15	988,4	1,3	6,0	NE	0,50	11,0	NNE	-1,6	1,3	-1,7	0,2
Nocturnal	09/03/2023	18:45	984,1	5,3	2,0	NE	0,17	3,0	NE	5,2	5,3	5,3	0,0
Nocturnal	10/03/2023	19:00	1007,7	1,5	2,0	N	0,17	3,0	N	1,1	1,3	0,9	0,0
HT VP	13/03/2023	09:20	988,5	10,3	22,0	SW	1,83	31,0	SW	5,6	10,4	5,7	0,0
HT Transect	14/03/2023	09:00	1004,7	7,1	5,0	NNE	0,42	10,0	NNE	5,6	7,0	5,5	0,0
HT Transect	15/03/2023	10:00	1016,4	4,4	1,0	NE	0,08	2,0	NNE	4,4	4,4	4,4	0,0
LT VP	17/03/2023	07:30	1001,8	9,4	6,0	S	0,50	10,0	S	8,0	9,7	8,2	0,0
LT Transect	18/03/2023	08:45	1004,4	10,1	2,0	S	0,17	3,0	S	10,1	10,4	10,4	0,0
LT Transect	19/03/2023	09:45	1017,6	9,9	5,0	W	0,42	9,0	WNW	8,9	9,9	8,9	0,0
Dawn VP	22/03/2023	05:40	998,1	10,4	12,0	WSW	1,00	16,0	W	7,3	10,6	7,5	0,0
Nocturnal	24/03/2023	19:10	996,6	9,9	21,0	WSW	1,75	29,0	WSW	5,2	9,9	5,2	0,0

Survey Type	Date	Start Time	Barometer	Temperature	Wind Speed	Wind Direction	Wind Run	High Wind Speed	High Wind Direction	Wind Chill	Heat Index	THW Index	Rain
Nocturnal	25/03/2023	19:40	1004,9	8,9	0,0		0,00	2,0	SSE	8,9	9,0	9,0	0,0
HT VP	04/09/2023	07:50	1023,5	17,3	0,0		0,00	0,0		17,3	17,9	17,9	0,0
Dawn VP	17/09/2023	06:10	1012,1	15,2	0,0		0,00	0,0		15,2	15,3	15,3	0,0
HT VP	03/10/2023	07:20	1016,1	8,8	0,0		0,00	0,0		8,8	9,0	9,0	0,0
Dusk VP	14/10/2023	17:00	1020,7	12,3	0,0		0,00	0,0		12,3	11,8	11,8	0,0
LT VP	16/10/2023	12:35	1021,1	9,3	0,0		0,00	0,0		9,3	9,3	9,3	0,0

LT = Low Tide, HT = High Tide, VP = Vantage Point

Annex C: Full Species List

Common Name	Scientific Name	Conservation Status
Barn Owl	<i>Tyto alba</i>	Sch 1, Green
Black Redstart	<i>Phoenicurus ochruros</i>	Amber (Wales), Sch 1, Amber (UK)
Blackbird	<i>Turdus merula</i>	Green
Blackcap	<i>Sylvia atricapilla</i>	Green
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Red (Wales), S42, Amber (UK)
Blue Tit	<i>Cyanistes caeruleus</i>	Green
Brambling	<i>Fringilla montifringilla</i>	Sch 1, Green
Bullfinch	<i>Pyrrhula pyrrhula</i>	Amber (Wales), S42, Amber (UK)
Buzzard	<i>Buteo buteo</i>	Green
Canada Goose	<i>Branta canadensis</i>	Green
Carrion Crow	<i>Corvus corone</i>	Green
Cetti's Warbler	<i>Cettia cetti</i>	Sch 1
Chaffinch	<i>Fringilla coelebs</i>	Amber (Wales)
Chiffchaff	<i>Phylloscopus collybita</i>	Green
Coal Tit	<i>Parus ater</i>	Amber (Wales)
Collared Dove	<i>Streptopelia decaocto</i>	Green
Common Gull	<i>Larus canus</i>	Amber (Wales), Red (UK)
Common Sandpiper	<i>Actitis hypoleucos</i>	Amber (Wales), Amber (UK)
Coot	<i>Fulica atra</i>	Amber (Wales)
Cormorant	<i>Phalacrocorax carbo</i>	Green
Crane	<i>Grus grus</i>	Amber (UK), Annex 1
Curlew	<i>Numenius arquata</i>	Red (Wales), S42, Red (UK)
Dunlin	<i>Calidris alpina</i>	Red (Wales), Red (UK), Annex 1
Dunnock	<i>Prunella modularis</i>	Amber (Wales), S42, Amber (UK)
Fieldfare	<i>Turdus pilaris</i>	Amber (Wales), Sch 1, Red (UK)
Gadwall	<i>Mareca strepera</i>	Amber (UK)
Goldcrest	<i>Regulus regulus</i>	Red (Wales)
Golden Plover	<i>Pluvialis apricaria</i>	S42, Annex 1, Green
Goldfinch	<i>Carduelis carduelis</i>	Green
Great Black-backed Gull	<i>Larus marinus</i>	Amber (Wales), Red (UK)
Great Spotted Woodpecker	<i>Dendrocopos major</i>	Green
Great Tit	<i>Parus major</i>	Green
Green Sandpiper	<i>Tringa ochropus</i>	Amber (Wales), Sch 1, Amber (UK)

Green Woodpecker	<i>Picus viridis</i>	Amber (Wales)
Greenfinch	<i>Chloris chloris</i>	Red (Wales), Red (UK)
Greenshank	<i>Tringa nebularia</i>	Sch 1, Amber (UK)
Grey Heron	<i>Ardea cinerea</i>	Amber (Wales)
Grey Partridge	<i>Perdix perdix</i>	Red (Wales), S42, Red (UK)
Grey Plover	<i>Pluvialis squatarola</i>	Red (Wales), Amber (UK)
Grey Wagtail	<i>Motacilla cinerea</i>	Amber (Wales), Amber (UK)
Greylag Goose	<i>Anser anser</i>	Amber (UK)
Herring Gull	<i>Larus argentatus</i>	Red (Wales), S42, Red (UK)
House Sparrow	<i>Passer domesticus</i>	Amber (Wales), S42, Red (UK)
Jack Snipe	<i>Lymnocyptes minimus</i>	Amber (Wales)
Jackdaw	<i>Coloeus monedula</i>	Green
Jay	<i>Garrulus glandarius</i>	Green
Kestrel	<i>Falco tinnunculus</i>	Red (Wales), S42, Amber (UK)
Kingfisher	<i>Alcedo atthis</i>	Sch 1, Annex 1, Green
Lapwing	<i>Vanellus vanellus</i>	Red (Wales), S42, Red (UK)
Lesser Black-backed Gull	<i>Larus fuscus</i>	Red (Wales), Amber (UK)
Lesser Redpoll	<i>Acanthis cabaret</i>	Amber (Wales), S42
Linnet	<i>Linaria cannabina</i>	Red (Wales), S42, Red (UK)
Little Egret	<i>Egretta garzetta</i>	Annex 1, Green
Little Grebe	<i>Tachybaptus ruficollis</i>	Green
Little Owl	<i>Athene noctua</i>	Green
Long-tailed Tit	<i>Aegithalos caudatus</i>	Green
Magpie	<i>Pica pica</i>	Amber (Wales)
Mallard	<i>Anas platyrhynchos</i>	Amber (UK)
Marsh Harrier	<i>Circus aeruginosus</i>	Amber (Wales), Sch 1, Amber (UK), Annex 1
Meadow Pipit	<i>Anthus pratensis</i>	Red (Wales), Amber (UK)
Mediterranean Gull	<i>Ichthyaeetus melanocephalus</i>	Amber (Wales), Sch 1, Amber (UK), Annex 1
Merlin	<i>Falco columbarius</i>	Red (Wales), Sch 1, Red (UK), Annex 1
Mistle Thrush	<i>Turdus viscivorus</i>	Amber (Wales), Red (UK)
Moorhen	<i>Gallinula chloropus</i>	Amber (UK)
Mute Swan	<i>Cygnus olor</i>	Green
Nuthatch	<i>Sitta europaea</i>	Green
Oystercatcher	<i>Haematopus ostralegus</i>	Amber (Wales), Amber (UK)
Peregrine	<i>Falco peregrinus</i>	Sch 1, Annex 1, Green

Pheasant	<i>Phasianus colchicus</i>	Green
Pied Wagtail	<i>Motacilla alba</i>	Green
Raven	<i>Corvus corax</i>	Green
Redshank	<i>Tringa totanus</i>	Red (Wales), Amber (UK)
Redstart	<i>Phoenicurus phoenicurus</i>	Amber (UK)
Redwing	<i>Turdus iliacus</i>	Sch 1, Amber (UK)
Reed Bunting	<i>Emberiza schoeniclus</i>	S42, Amber (UK)
Ring Ouzel	<i>Turdus torquatus</i>	Red (Wales), S42, Red (UK)
Robin	<i>Erithacus rubecula</i>	Green
Rook	<i>Corvus frugilegus</i>	Red (Wales), Amber (UK)
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	Amber (UK)
Shelduck	<i>Tadorna tadorna</i>	Red (Wales), Amber (UK)
Short-eared Owl	<i>Asio flammeus</i>	Amber (Wales), Amber (UK), Annex 1
Skylark	<i>Alauda arvensis</i>	Amber (Wales), S42, Red (UK)
Snipe	<i>Gallinago gallinago</i>	Amber (Wales), Amber (UK)
Song Thrush	<i>Turdus philomelos</i>	S42, Amber (UK)
Sparrowhawk	<i>Accipiter nisus</i>	Amber (UK)
Starling	<i>Sturnus vulgaris</i>	Red (Wales), S42, Red (UK)
Stock Dove	<i>Columba oenas</i>	Amber (UK)
Stonechat	<i>Saxicola rubicola</i>	Green
Swallow	<i>Hirundo rustica</i>	Green
Swift	<i>Apus apus</i>	Red (Wales), Red (UK)
Tawny Owl	<i>Strix aluco</i>	Amber (UK)
Teal	<i>Anas crecca</i>	Amber (Wales), Amber (UK)
Treecreeper	<i>Certhia familiaris</i>	Green
Turnstone	<i>Arenaria interpres</i>	Amber (Wales), Amber (UK)
Water Pipit	<i>Anthus spinoletta</i>	Amber (UK)
Water Rail	<i>Rallus aquaticus</i>	Amber (Wales)
Wheatear	<i>Oenanthe oenanthe</i>	Amber (Wales), Amber (UK)
Whinchat	<i>Saxicola rubetra</i>	Red (Wales), Red (UK)
White-fronted Goose	<i>Anser albifrons</i>	Red (Wales), S42, Red (UK), Annex 1
Whitethroat	<i>Sylvia communis</i>	Red (Wales), Amber (UK)
Whooper Swan	<i>Cygnus cygnus</i>	Sch 1, Amber (UK), Annex 1
Wigeon	<i>Mareca penelope</i>	Amber (Wales), Amber (UK)
Woodcock	<i>Scolopax rusticola</i>	Red (Wales), Red (UK)
Woodpigeon	<i>Columba palumbus</i>	Amber (UK)

Wren	<i>Troglodytes troglodytes</i>	Amber (UK)
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Red (UK) = Red listed Bird of Conservation Concern 5 (BoCC5) (Stanbury et al., 2021); **Amber (UK)** = Amber listed BoCC5; **Sch1**= listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended).; **Red (Wales)** = Red listed Bird of Conservation Concern Wales 4 (Wales BoCC4) (Johnstone et al, 2022); **Amber (Wales)** = Amber listed Wales BoCC4; **Green** = Green listed on both UK and Welsh Bird of Conservation Concern lists; **S42** = Species of Principal Importance under Section 42 of the Environment (Wales) Act 2016; **Annex 1** = Threatened bird listed on Annex I of the EC Birds Directive/ Habitats listed on Annex I of the EC Habitats Directive

