



Project Erebus

Breeding Bird Survey

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Executive Summary

A breeding bird survey was undertaken between April 2021 and June 2021. The Survey Area covered several two potential landfall sites and the cable route options which lead to a potential substation site near Pembroke Power Station.

The work was undertaken to also inform the submission of a future planning application for the onshore elements of a floating wind farm.

The breeding bird survey, which included a desk study and field survey. The desk study included a search for designated sites and data requests for species from WWBIC. The field survey involved four transects so planned to cover the inland area of the Site and a 250m survey buffer plus a single coastal survey to identify breeding chough and peregrine.

The breeding bird survey consisted of four transects and conducted on three occasions between April and June 2021. Owing to the low-lying nature of the Site and the presence of grassland and woodland habitats within the Site and wider study area, the Common Bird Census (CBC) method of census was used for the survey and was carried out in line with the methods detailed in Gilbert *et al.* (2011).

The desk study identified one nature conservation designations of international importance and a further five nature conservation designations of national importance designated for ornithological reason within 5km of the Site.

The WWBIC data search identified a total 106 species of protected or otherwise notable bird species have been recorded within 5km of the Site. Of these, 29 species are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), 20 are listed within Annex 1 of the Birds Directive 2009, and 27 are listed on the Environment (Wales) Act 2016. Thirty-five are included on the BoCC Red List and a further 56 species are Amber-Listed. Additionally, 36 species are listed as priority species in the Pembrokeshire LBAP.

The coastal transect identified two breeding locations for chough, one for peregrine as well as a breeding pair of kestrel. During the three transects away from the coast a total of seven BoCC Red Listed and six BoCC Amber Listed species were recorded as breeding during the four survey visits.

The most commonly recorded species were dunnock (54 territories), linnet (41 territories) and skylark (34 territories). The only other two species recorded with ten or more territories were house sparrow (11 territories) and song thrush (10 territories). A further 34 common species were also recorded as breeding within the Study Area.

1. Introduction

1.1 Overview

A Preliminary Ecological Assessment (PEA) was undertaken in July 2020 (see “Erebus Project: Preliminary Ecological Assessment of potential cable routes and substation locations (the “Site”) near Angle and Rhoscrowther, Pembrokeshire”, Hudson and Sutton, 2020). This report identified the vegetation and habitats present within the Survey Area, and, in broad terms, their potential to support breeding bird species.

In March 2021 Adern Ecology Ltd was commissioned by ITP Energised to carry out a Breeding Bird Survey in support of an application to Pembrokeshire County Council for the same project. The Survey Area covered several potential cable route options still being considered which lead to a potential substation site near Pembroke Power Station (see Figure 1).

The purpose of this document is to report the findings of a breeding bird survey and identify potential ornithology-related constraints to the project.

1.2 Site Description

The Survey Area is located on the Angle Peninsula in south Pembrokeshire and comprises an area which covered several cable option routes to a number of potential substation sites near Pembroke Power Station (see Figure 1). Apart from the extensive sand dune systems at Broomhill/Gupton and Kilpaison Burrows, the landscape is dominated by intensive agriculture – arable and improved grasslands bounded by species-poor hedges. To the east of the Survey Area, however, some thicker more species-rich hedges occur in areas where farming is more mixed and “traditional”. Semi-natural habitats such as grasslands and woodlands are small and widely scattered with the largest blocks of woodland occurring around Angle and Bangeston. The Survey Area is bisected by several small stream valleys that create linear habitat features where woodlands, scrub and wetland habitats all occur.

2. Legislation, Policy and Guidelines

2.1 Legislation

All relevant legislation and guidance documents have been considered as part of this assessment, as referenced in this report (a summary of pertinent nature conservation legislation is presented below).

Of particular relevance are:

- Council Directive 2009/147/EC on the conservation of wild birds (the Birds Directive)¹;
- The Ramsar Convention on Wetlands 1976;
- Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive);
- The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended);
- The Wildlife and Countryside Act 1981 (as amended);
- The Wildlife and Natural Environment (Scotland) Act 2011 (as amended); and

¹ Although the UK has left the European Union, there has been no significant change in the wording of UK nature conservation legislation based on European directives, and these therefore remain relevant to the present report.

- The Nature Conservation (Scotland) Act 2004 (as amended), which places a statutory duty on all public bodies to further the conservation of biodiversity through the Scottish Biodiversity Strategy, with Scottish priority species and habitats listed on the Scottish Biodiversity List (SBL), itself based on the former UK Biodiversity Action Plan (UKBAP), and regional biodiversity targets defined through a Local Biodiversity Action Plan (LBAP). The LBAP of relevance to this report is the Fife Local Biodiversity Action Plan.

2.1.1 International Conventions and Directives

2.1.1.1 The Birds Directive (2009/147/EC)

The European Union (EU) Directive on the Conservation of Wild Birds (2009/147/EC) was first adopted in 1979 and is the primary mechanism for delivering the EU's obligations under the Convention on Biological Diversity (CBD), and the Ramsar and Bonn Conventions. Collectively, the Birds and Habitats Directives require Member States to take action in order to protect all bird species and their habitats which includes the designation of Special Protection Areas (SPAs) in respect to species listed on Annex I of the Directive.

2.1.1.2 Ramsar Convention on Wetlands

The Convention on Wetlands of International Importance (the Ramsar Convention) was adopted in Iran in February 1971 and came in to force in the UK in May 1976. The Convention considers the subject area of wetland conservation and comprises three elements of activity:

- The designation of wetlands of international importance as Ramsar sites;
- The promotion of the sustainable use of all wetlands in the territory of each country; and
- International co-operation with other countries to further the sustainable use of wetlands and their resource.

2.1.1.3 The Habitats Regulations

In Scotland, the Habitats Directive is translated into specific legal obligations by the Conservation (Natural Habitats, &c.) Regulations 1994. This piece of legislation is commonly referred to as the Habitats Regulations.

The Habitats Regulations cover the requirements for:

- Special Protection Areas (SPAs), which are sites that are internationally important for threatened habitats and species; making a network of sites designated together and known collectively as the Natura 2000 network;
- Species requiring strict protection – i.e. European protected species; and
- Other aspects of the Habitats Directive including the management, surveillance and reporting for sites in order to ensure the favourable status of species and habitats are maintained.

The Habitats Regulations were most recently amended in 2012.

2.1.1.4 The Convention on Biological Diversity (CBD)

The CBD was adopted at the Earth Summit in Rio de Janeiro, Brazil in June 1992, and came into force in December 1993. It was the first global treaty to provide a legal framework for biodiversity conservation. The treaty has three primary goals:

- The conservation of biological diversity;
- The sustainable use of its components; and
- The fair and equitable sharing of the benefits arising from the use of genetic resources.

Signatories are required to create and enforce national strategies and action plans to conserve, protect and enhance biological diversity.

The UK Government ratified the convention and published the UKBAP in 1994 and to compliment the UKBAP, separate biodiversity strategies for each of the devolved governments have been subsequently developed,

including the Environment Strategy for Wales, launched in 2006. The 'UK Post-2010 Biodiversity Framework' now succeeds the UK BAP and 'Conserving Biodiversity – the UK Approach'. The framework takes into account the 'Aichi targets' following a conference in Japan in 2010 and publication of the new EU Biodiversity Strategy (EUBS) in 2011. This complements existing UK biodiversity strategies and targets by identifying activities needed to achieve them. This framework places more weight on national responses such as the Nature Recovery Action Plan (Welsh Government, 2015), in a Welsh context (see Section 2.2.2), than on a UK-wide response.

2.1.2 National Legislation

2.1.2.1 The Wildlife and Countryside Act

The Wildlife and Countryside Act 1981 (as amended) (WCA) is the principal mechanism for wildlife protection in the UK. Schedule 1 of the Act lists bird species that are afforded special protection. The principal designation established under the Act is the citation of Sites of Special Scientific Interest (SSSI).

The Act also makes it an offence (with exception to species listed in Schedule 2) to intentionally:

- Kill, injure, or take any wild bird;
- Take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- Take or destroy an egg of any wild bird.

2.2 Biodiversity

2.2.1 The Environment (Wales) Act 2016

The Environment (Wales) Act aims to assist Wales in developing as a low carbon, green economy in response to shifting environmental conditions through climate change. The Act was developed as a response to the negative impacts from climatic change, the effects of which range from socio-economic human disturbances to a reduction of biodiversity. The Environment (Wales) Act 2016 sets out the approach to planning and managing natural resources at a national and local level with a general purpose linked to statutory 'principles of sustainable management of natural resources' defined within the Act (Welsh Government, 2016a).

Local authorities are required to take into consideration for the conservation of biodiversity within their area but also places a responsibility to not only protect but to enhance biodiversity. The act also places a need for Welsh Ministers, public bodies and statutory stakeholders to maintain and enhance biodiversity.

The Welsh Government, in conjunction with Natural Resources Wales, published a list of living organisms and types of habitat which are of principal importance for the purpose of maintaining and enhancing biodiversity, in relation to Wales, in Section 7 of the Act.

At the time of creation, the list of habitats of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales contained 55 priority habitats including hedgerows; arable field margins; improved grassland; and rivers and streams (Welsh Government, 2016b).

At the time of listing, Welsh Priority List (WPL) species included 17 species of mammals, 51 species of birds, 10 species of fish, eight species of reptiles or amphibian, 188 invertebrate species, 77 vascular plant species, 67 species of lichens, 52 species of mosses and liverworts, 27 species of fungi, five species of stoneworts and 55 marine species (Welsh Government, 2016c). Of the birds listed, those of relevance to the Site include; skylark (*Alauda arvensis*); kestrel (*Falco tinnunculus*); cuckoo (*Cuculus canorus*); curlew (*Numenius arquata*) and lapwing (*Vanellus vanellus*).

2.2.2 Nature Recovery Plan

The Nature Recovery Plan was released in December 2015 and addresses the underlying causes of biodiversity loss. It sets out how Wales will deliver the commitments of the EU Biodiversity Strategy and the UN Convention on Biological Diversity to halt the decline in biodiversity by 2020 and then reverse that decline (Welsh Government, 2015).

2.2.3 The Pembrokeshire Local Biodiversity Action Plan

The Pembrokeshire Local Biodiversity Action Plan (LBAP) provides a framework within which existing and new actions are co-ordinated to conserve and enhance biodiversity in Pembrokeshire, taking account of local and national priorities (Pembrokeshire County Council, 2014). Part 1 of the plan provides a brief background to biodiversity in Pembrokeshire and the role of the Pembrokeshire Biodiversity Partnership (forerunner of the Pembrokeshire Nature Partnership). It also includes information on the priority habitats and species in Pembrokeshire. Part 2 provides a series of species and habitat action plans for key features in Pembrokeshire, identifying trends, threats and suggested action to address them.

Of potential relevance to this study are the following grouped habitat plans, with their associated grouped species action plans:

- Lowland Farmland:
 - Farmland birds;

In addition to the grouped species action plans there are a total of nine individual species action plans are outlined with the two relating to bird species:

- Chough (*Pyrrhocorax pyrrhocorax*); and
- Kestrel (*Falco tinnunculus*).

A further 21 bird species are listed as Pembrokeshire LBAP priority species.

2.3 Birds of Conservation Concern

The BoCC, is a collaboration between the Statutory Nature Conservation Bodies (SNCBs), Royal Society for the Protection of Birds (RSPB), British trust for Ornithology (BTO), Wildfowl and Wetlands Trust (WWT), Game and Wildlife Conservation Trust (GWCT) and several other organisations. It uses an approach based on quantitative assessments against standardised criteria, in order to place individual bird species on 'Red', 'Amber' or 'Green' lists to indicate different levels of conservation concern. Red in the context of BoCC is not the same as IUCN's Red List, though IUCN status is one of the criteria used in BoCC assessment. Collectively, the changes in the numbers and proportions of species on Red, Amber or Green lists provide a gauge of the broad direction of status of UK birds and point to the degree of threat they face, as well as the efficacy of conservation measures taken (Eaton *et al.*, 2015).

Birds on the Red and Amber lists are subject to at least one of the factors listed below:

- Red - red list species are those that are globally threatened, have had an historical population decline in the UK from 1800 -1995, a rapid (> or = 50%) decline in UK breeding population over the past 25 years, or a rapid (> or = 50%) contraction of UK breeding range over the past 25 years;
- Amber - amber listed species have had a historical population decline from 1800-1995 but are recovering; population size has more than doubled over the past 25 years, a moderate (25-49%) decline in UK breeding population over the past 25 years, a moderate (25-49%) contraction of UK breeding range over the past 25 years, a moderate (25-49%) decline in UK non-breeding population over the past 25 years, or species with unfavourable conservation status in Europe also known as Species of European Conservation Concern (SPEC); and
- Green - green listed species have no identified threat to their population status.

3. Methodology

3.1 Desk Study

A full desk study was carried out in July 2020 and included for a search for nature conservation designations listed for ornithological reasons as well as records of ornithological species of conservation concern. In terms of designations the search area used were as follows: international and national designations, i.e. Special Protection Areas (SPAs), Ramsar sites, Sites of Special Scientific Interest (SSSIs), National Parks, and National Nature Reserves (NNRs), as well as statutory local designations i.e. Local Nature Reserves (LNR) were identified within 5km of the Site. Non-statutory designations, such as Local Wildlife Sites (LWSs), Sites of Interest for Nature Conservation (SINCs) were identified within 2km of the Site. Only designations with ecological and/or ornithological qualifying features were considered relevant in this study.

Existing records for protected or otherwise notable species (e.g. Environment (Wales) Act 2016/LBAP priority species) were identified within 2km of the Site. Records were obtained from the local biodiversity records centre and only records from within the last 10 years were considered relevant to the study.

Full details of the methodology used are described in the Technical Appendix 20.1: Ecological Desk Study (ITPE, 2020).

In addition to the data requested within Technical Appendix 20.1 outlined above a more specific data request regarding the presence of breeding chough was requested from the RSPB. The data request was to include all records of breeding chough within the Site and a 2km search area in the previous 10 years.

3.2 Survey Methods

A breeding bird walkover survey, comprising three visits, was carried out in spring and summer 2021 to identify approximate numbers and the location of breeding pairs of birds within the cable corridor and an approximate 300m survey buffer.

The majority of the proposed cable route passes through arable or improved grassland fields and as these habitats were assessed to be of low value to breeding birds the survey used targeted transects to approach areas of higher value habitat, such as scrub, woodland and wetland. The transect surveys covered the majority of the cable corridor (as it was in the iterative development in April 2021) and an approximate 300m survey buffer. The proposed transects followed a modified common bird census type methodology (as outlined in Bibby *et al.* (2000)) to record breeding birds.

The CBC method was modified slightly so that three survey visits took place in the form of transects and were completed over three days in each of April, May and June 2021. The surveys also included a check for any sites which may be suitable for nesting barn owl (completed under Schedule 1 bird licence). In addition to breeding behaviour, records of foraging or flying chough were recorded during the transect surveys.

In addition to the three transects outlined, a further survey was completed of the cliffs between West Angle Bay and Freshwater West for breeding chough and peregrine (*Falco peregrinus*). A mixture of walkover and vantage point watches were employed with the aim to map all nest sites and also record any flightlines or feeding areas for chough along the coastal strip and inland, in addition to any observed territorial and/or breeding behaviour.

The four transect routes are shown in Figure2.

Ahead of the commencement of the breeding bird surveys the methodology outlined above for the breeding bird survey was sent to NRW and Pembrokeshire County Council for comment and was approved by email on 12th April 2021.

The three survey transects were carried out by a suitably qualified ornithologist on the following dates:

- 23rd, 26th and 29th April 2021;

- 18th, 19th and 27th May 2021; and
- 12th, 13th and 14th 2021.

The coastal survey for chough and peregrine were carried on the following dates:

- 22nd April 2021;
- 4th June 2021; and
- 8th July 2021.

Surveys were conducted in good weather and the route taken on each field visit reversed to reduce systematic data bias.

When individuals or pairs of birds were encountered, the ornithologist determined whether the bird(s) were different from any previously encountered. This involved careful attention to the whereabouts and movements of birds, together with birds' sex and plumage characteristics. To minimise the risk of double-counting, behaviour and location of birds were carefully observed so that previously encountered birds were not recorded twice. Surveys were not conducted in winds greater than Beaufort Force 5, in persistent rain, or when visibility was poor (less than 500m).

The following behaviour or signs were considered to represent evidence of breeding:

- Displaying or singing;
- Territorial dispute;
- Repeated alarm calling or distraction displays;
- Occupied nests;
- Adult(s) carrying food;
- Adult(s) carrying nest material; and
- Newly fledged young with parent(s).

Other records were considered to be of non-breeding birds, failed breeders, or birds loafing, feeding, or on passage to other areas.

All bird activity was identified and mapped onto 1:25,000 OS maps of the Site, using BTO two-letter codes and appropriate symbols as outlined in Appendix 1 of Gilbert *et al.* (2011). Due care and attention was taken using appropriate symbols, to ensure that multiple registrations of the same bird were not recorded on the survey maps.

On completion of all four visits all the data on birds showing signs of breeding were entered onto ArcGIS. Once all visits were entered onto the GIS territory analysis was completed in order to identify the number and location of territories for each species of conservation concern.

3.3 Survey Limitations

All the survey visits were completed within the optimal times and dates for a breeding bird survey. The surveyor could access the majority of the Study Area although on occasions due to being it private land with no arranged access, some sections during the survey visits were scanned from a distance using binoculars and / or singing birds recorded by standing and listening. The ability of the surveyor to see and hear all parts of the Study Area mean this is not considered to be a limitation to the survey data.

4. Results

4.1 Desk Study

4.1.1 Nature Conservation Designations

As shown on Figure 3 and detailed in Table 1, there are two nature conservation designations of international importance and a further five nature conservation designations of national importance designated for ornithological reason within 5km of the Site.

Table 1: Nature Conservation Designations of International and National Importance

Name	Designation	Distance	Description
Pembrokeshire Coast	National Park	All routes are within the National Park.	The national park is primarily designated for its coastal landscape which incorporates wildlife, habitats, farming, history, tourism, business and local communities. The park has 13 SAC, five SPA, one marine conservation zone, seven NNR and 60 SSSI designations.
Castlemartin Coast	SPA	150m south-east at nearest point.	Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC: <ul style="list-style-type: none"> ○ Chough (<i>Pyrrhocorax pyrrhocorax</i>) - During the breeding season the area regularly supports 3.5% of the British breeding population, between 12 and 14 pairs (count as at 1998).
Arfordir Penrhyn Angle / Angle Peninsula Coast	SSSI	Borders at West Angle Bay.	The site is designated for its wide range of habitats and is also designated for the following bird species: <ul style="list-style-type: none"> ○ (wintering) Chough. Also present but not recorded as part of the SSSI citation: <ul style="list-style-type: none"> ○ Peregrine (<i>Falco peregrinus</i>).
Milford Haven Waterway	SSSI	280m east.	The site is designated for its ancient woodland, saltmarsh, swamp, saline lagoons, rare and scarce plants and invertebrates and nationally important numbers of migratory waterfowl. Ornithological features: <ul style="list-style-type: none"> ○ Little grebe (<i>Tachybaptus ruficollis</i>); ○ Shelduck (<i>Tadorna tadorna</i>); ○ Wigeon (<i>Anas Penelope</i>); ○ Teal (<i>Anas crecca</i>); ○ Dunlin (<i>Calidris alpina</i>); and ○ Curlew (<i>Numenius arquata</i>).
Castlemartin Range	SSSI	1.17 km south	The site is of interest for its marine biology, sand dunes, wetland habitats, calcareous grassland, cliff and coastal grassland and heath, together with the most extensive area of species-rich neutral grassland in Wales.

Name	Designation	Distance	Description
			<p>Also of special interest are breeding seabirds:</p> <ul style="list-style-type: none"> ○ A breeding population of 15 - 20 pairs of chough; ○ 12,000 – 16,000 individual guillemots (<i>Uria aalge</i>); ○ 800 – 1,100 razorbills (<i>Alca torda</i>); ○ kittiwakes (<i>Rissa tridactyla</i>); and ○ puffins (<i>Fratercula arctica</i>) <p>Other breeding birds present but not part of the designation include fulmar (<i>Fulmarus glacialis</i>), lesser black-backed gull (<i>Larus fuscus</i>), herring gull (<i>L. argentatus</i>), shag (<i>Phalacrocorax aristotelis</i>), raven (<i>Corvus corax</i>), peregrine, kestrel (<i>Falco tinnunculus</i>), swift (<i>Apus apus</i>), house martin (<i>Delichon urbica</i>), rock pipit (<i>Anthus petrosus</i>), buzzard (<i>Buteo buteo</i>), stonechat (<i>Saxicola rubicola</i>), wheatear (<i>Oenanthe oenanthe</i>), meadow pipit (<i>Anthus pratensis</i>), whitethroat (<i>Sylvia communis</i>), skylark (<i>Alauda arvensis</i>), ringed plover (<i>Charadrius hiaticula</i>), Dartford warblers (<i>S. undata</i>) and barn owl (<i>Tyto alba</i>). Outside the breeding season, significant numbers of waders and gulls are also present.</p>
Dale and South Marloes Coast	SSSI	2.9 km west.	<p>The site is designated for its wide range of habitats and is also designated for the following bird species:</p> <ul style="list-style-type: none"> ○ (wintering) Chough;

In addition the presence of lapwing (*Vanellus vanellus*) is mentioned in the site descriptions for Broomhill Burrows SSSI (which lies directly south of the Site) but not as a designating feature.

As shown on Figure3 and detailed in Table 2, a single statutory designation of local importance is present within 5km of the Site.

Table 2: Nature Conservation Designations of Local Importance

Name	Designation	Distance to Site	Description
Pembroke Mill Ponds	LNR	4.76km east of all cable routes.	The pond has a developing reed bed, fen and carr and adjoining woodland. The vegetation represents a transition from estuarine to freshwater conditions. The pond and woodland are used by birds including kingfisher (<i>Alcedo atthis</i>), pochard (<i>Aythya ferina</i>), mute swan (<i>Cygnus olor</i>), mallard (<i>Anas platyrhynchos</i>), teal (<i>Anas crecca</i>) and willow warbler (<i>Phylloscopus trochilus</i>) as well as aquatic invertebrates, fish and otter.

4.1.2 Species

A total 106 species of protected or otherwise notable bird species have been recorded within 5km of the Site. Of these, 29 species are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), 20 are listed within Annex 1 of the Birds Directive 2009, and 27 are listed on the Environment (Wales) Act 2016. Thirty-five are included on the BoCC Red List and a further 56 species are Amber-Listed. Additionally, 36 species are listed as priority species in the Pembrokeshire LBAP. Full details are described in Technical Appendix 20.1: Ecological Desk Study (ITPE, 2020).

The chough specific data request outlined the presence of breeding chough within the Study Area with the most recent survey indicating one confirmed, one probable and one possible in 2014.

4.2 Field Survey

The coastal transect identified two breeding locations for chough, one for peregrine as well as a breeding pair of kestrel. Due to the lie of the land, i.e. the birds nesting on high cliffs, the exact location of nests was not identified but due to specific breeding behaviour the approximate locations of breeding pairs were mapped. In addition to the two breeding territories, the chough were also noted foraging along the cliff tops close to the breeding attempts and were identified foraging in similar habitat elsewhere along the cliff tops in three locations. The breeding locations and foraging areas for chough and peregrine are outlined in Figure 4.

During the three transects away from the coast a total of seven BoCC Red Listed and six BoCC Amber Listed species were recorded as breeding during the four survey visits. The number of birds showing evidence of breeding activity during the three survey visits, and the calculated number of territories, are summarised per species in Table 1 below. The territories for each species are shown on Figure 4.

Table 1 - Breeding bird survey results

Common name	Scientific Name	BTO Code	LBAP / WPL	BoCC	Birds showing signs of breeding			Territories
					Visit 1	Visit 2	Visit 3	
Bullfinch	<i>Pyrrhula pyrrhula</i>	BF	WPL	Amber	2	4	2	4
Duncock	<i>Prunella modularis</i>	D	WPL	Amber	48	43	33	54
House Sparrow	<i>Passer domesticus</i>	HS	WPL	Red	8	8	4	11
Linnet	<i>Linaria cannabina</i>	LI	WPL	Red	37	31	39	41
Mallard	<i>Anas platyrhynchos</i>	MA		Amber	2	1		1
Meadow pipit	<i>Anthus pratensis</i>	MP		Amber	2	2		2
Mistle Thrush	<i>Turdus viscivorus</i>	M		Red		1	1	2
Reed bunting	<i>Emberiza schoeniclus</i>	RB	WPL	Amber	2	3	2	3
Skylark	<i>Alauda arvensis</i>	S.	WPL	Red	27	28	30	34
Song thrush	<i>Turdus philomelos</i>	ST	WPL	Red	7	7	5	10
Stonechat	<i>Saxicola rubicola</i>	SC	LBAP		4		2	
Willow warbler	<i>Phylloscopus trochilus</i>	WW		Amber	2			2
Yellowhammer	<i>Emberiza citrinella</i>	Y	WPL	Red	1	2	2	3

The most commonly recorded species were dunnock (54 territories), linnet (41 territories) and skylark (34 territories). These three species are associated with farmland, scrub and hedgerow habitats which were recorded throughout the Study Area. The only other two species recorded with ten or more territories were house sparrow (11 territories) and song thrush (10 territories).

A further 34 common species were also recorded as breeding within the Study Area the most commonly recorded were: wren (*Troglodytes troglodytes*), Whitethroat (*Sylvia communis*), robin (*Erithacus rubecula*), chaffinch (*Fringilla coelebs*), blackcap (*Sylvia atricapilla*) and blackbird (*Turdus merula*).

The total count for all species during each visit are outlined in Table A1 in Appendix A.

In addition a further three species of conservation concern were recorded during surveys with no evidence of breeding activity recorded: whimbrel (*Numenius phaeopus*), starling (*Sturnus vulgaris*) and house martin (*Delichon urbicum*).

5. Discussion

5.1 Nature Conservation Designations

As identified in Section 4.1.1, the Castlemartin Coast SPA lies 150m south of Site at the nearest point. The SPA is designated for its breeding population of chough (also covered in in the Castlemartin Range SSSI citation). Wintering chough are the primary designating feature of the Arfordir Penrhyn Angle / Angle Peninsula Coast SSSI which lies in direct proximity to the Site at West Angle bay and Dale and South Marloes Coast SSSI which lies 2.9km west of the Site. Milford Haven Waterway SSSI lies 280m east of the Site at its closest point and is designated for its migratory waterfowl, while Castlemartin Range SSSI already mentioned above lies 1.17km south of the Site and is also designated for its breeding seabirds.

The Proposed Development doesn't overlap the imprint of any of these protected sites but does pass close to Castlemartin SPA, Arfordir Penrhyn Angle / Angle Peninsula Coast SSSI and Milford Haven Waterway SSSI meaning works may have the possibility to impact on birds within these protected sites due to visual and noise disturbance. These impacts are likely to be short term and temporary in nature and will need to be taken into consideration in the development process.

Chough are known to range long distances to forage during both the breeding and non-breeding seasons meaning In addition to the potential impacts caused by the proximity of protected sites the Proposed Development may impact on chough away from protected sites at foraging sites.

5.2 Species

5.2.1 Chough

Chough is listed both as a Schedule 1 and Annex 1 species and is legally protected accordingly. Chough is also a BoCC Red listed, WPL and Pembrokeshire priority LBPA species. Chough are a designated feature of the Castlemartin Coast SPA, Arfordir Penrhyn Angle / Angle Peninsula Coast SSSI, Castlemartin Range SSSI and Dale and South Marloes Coast all of which are located within 5km of the Site.

Two chough breeding pair were identified along the cliffs during the costal transect surveys, one north of Sheep Island and one close to Guttle Hole, to the south-west of the Site and while the exact location of the nest wasn't located the areas containing the two nests was all over 600m south-west of the Site boundary. Chough were noted as foraging in these two areas plus three further areas along the cliff tops, one area north of West Angle Bay, north of Guttle Hole and at West Pickard Bay. The feeding areas are found between 320 -800m from the Site boundary.

The desk study identified that there were two confirmed breeding sites in 2014, one south of Freshwater and one along cliffs between West Angle Bay and Freshwater as well as one probable and one possible

breeding attempt along the same cliff section. The confirmed and probable breeding attempts align closely with the records identified within the 2021 breeding survey.

5.2.2 Peregrine

Peregrine is listed both as a Schedule 1 and Annex 1 species and is legally protected accordingly.

A pair of peregrine were recorded holding territory on Sheep Island during the coastal transect surveys although it is thought the breeding attempt failed. The nest location was not identified as much of the cliffs were not visible from the survey route but was noted to be located between 850-1000m south-west of the Site.

5.2.3 Red / Amber Listed / WPL and LBAP Species

The Site contains a number of different habitats which provide suitable breeding habitat for a range of lowland, farmland, woodland and wetland bird species. Although none of the 47 breeding species recorded are afforded protection under Annex 1 of The Birds Directive (2009) or Schedule 1 of the Wildlife and Countryside Act (1981), seven of the recorded species are Red listed on the BoCC and a further six are Amber listed. Of these, eight are also WPL priority species and one is Pembrokeshire LBAP priority species and, as such, are species of conservation concern.

Although not recorded during the three inland survey transects, kestrel were recorded as breeding along the coast, 800m south-west of the Site. Kestrel are BoCC Amber listed species and have a specific Pembrokeshire LBAP action plan.

6. References

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Appendix A – Full breeding bird results

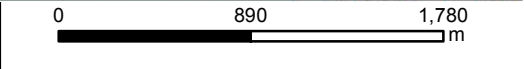
Table A1 – Breeding survey bird results

Vernacular Name	Scientific name	Birds Directive: Annex 1	WCA: Schedule 1	Welsh List Priority	Local BAP	BOCC	Visit 1	Visit 2	Visit 3
Blackbird	<i>Turdus merula</i>						34	34	32
Blackcap	<i>Sylvia atricapilla</i>						35	27	23
Blue Tit	<i>Cyanistes caeruleus</i>						13	8	5
Bullfinch	<i>Pyrrhula pyrrhula</i>			X		Amber	2	4	2
Buzzard	<i>Buteo buteo</i>						5	2	3
Carrion Crow	<i>Corvus corone</i>						10	6	4
Chaffinch	<i>Fringilla coelebs</i>						41	47	29
Chiffchaff	<i>Phylloscopus collybita</i>						16	17	10
Collared Dove	<i>Streptopelia decaocto</i>						1	1	3
Dunnock	<i>Prunella modularis</i>			X		Amber	48	43	33
Goldfinch	<i>Carduelis carduelis</i>						13	18	9
Great Spotted Woodpecker	<i>Dendrocopos major</i>						1	1	2
Great Tit	<i>Parus major</i>						17	8	3
Greenfinch	<i>Carduelis chloris</i>						2		1
Grey Heron	<i>Ardea cinerea</i>						1		
House Martin	<i>Delichon urbicum</i>					Amber		1	1
House Sparrow	<i>Passer domesticus</i>			X		Red	8	8	4
Jackdaw	<i>Corvus monedula</i>						3	2	2
Jay	<i>Garrulus glandarius</i>						1		2
Lesser whitethroat	<i>Sylvia curruca</i>						1	2	
Linnet	<i>Linaria cannabina</i>			X		Red	37	31	39
Little Grebe	<i>Tachybaptus ruficollis</i>						1	1	
Long-tailed Tit	<i>Aegithalos caudatus</i>						2	2	
Magpie	<i>Pica pica</i>						13	11	5
Mallard	<i>Anas platyrhynchos</i>					Amber	2	1	
Meadow Pipit	<i>Anthus pratensis</i>					Amber	2	2	
Mistle Thrush	<i>Turdus viscivorus</i>					Red		1	1
Moorhen	<i>Gallinula chloropus</i>						3	6	2
Pheasant	<i>Phasianus colchicus</i>						4	4	5
Pied Wagtail	<i>Motacilla alba</i>						4	3	6
Reed Bunting	<i>Emberiza schoeniclus</i>			X		Amber	2	3	2

Vernacular Name	Scientific name	Birds Directive: Annex 1	WCA: Schedule 1	Welsh List Priority	Local BAP	BoCC	Visit 1	Visit 2	Visit 3
Reed Warbler	<i>Acrocephalus scirpaceus</i>						1	2	3
Robin	<i>Erithacus rubecula</i>						54	33	45
Rock Pipit	<i>Anthus petrosus</i>						3	2	1
Rook	<i>Corvus frugilegus</i>						1	1	1
Sand Martin	<i>Riparia riparia</i>						1	1	
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>						2	13	10
Skylark	<i>Alauda arvensis</i>			X		Red	27	28	30
Song Thrush	<i>Turdus philomelos</i>			X		Red	7	7	5
Sparrowhawk	<i>Accipiter nisus</i>						1	1	1
Starling	<i>Sturnus vulgaris</i>			X		Red			1
Stonechat	<i>Saxicola rubicola</i>				X		4		2
Swallow	<i>Hirundo rustica</i>						2	4	7
Treecreeper	<i>Certhia familiaris</i>								1
Whimbrel	<i>Numenius phaeopus</i>		X			Red		1	
Whitethroat	<i>Sylvia communis</i>						41	74	60
Willow Warbler	<i>Phylloscopus trochilus</i>					Amber	2		
Woodpigeon	<i>Columba palumbus</i>						10	13	36
Wren	<i>Troglodytes troglodytes</i>						100	100	100
Yellowhammer	<i>Emberiza citrinella</i>			X		Red	1	2	2



KEY:
 Site boundary



Scale 1:35,000 @ A3

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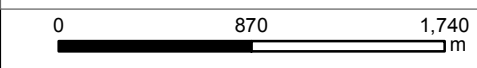
**Breeding Bird Survey Report
 Figure 1**



KEY:

- Site Boundary
- Breeding Bird Survey (BBS) Transect Routes
- Coastal Transect

VEHICLE FERRY
FROM PEMBROKE TO
Rosslare 3 1/2 hours



Scale 1:34,111 @ A3

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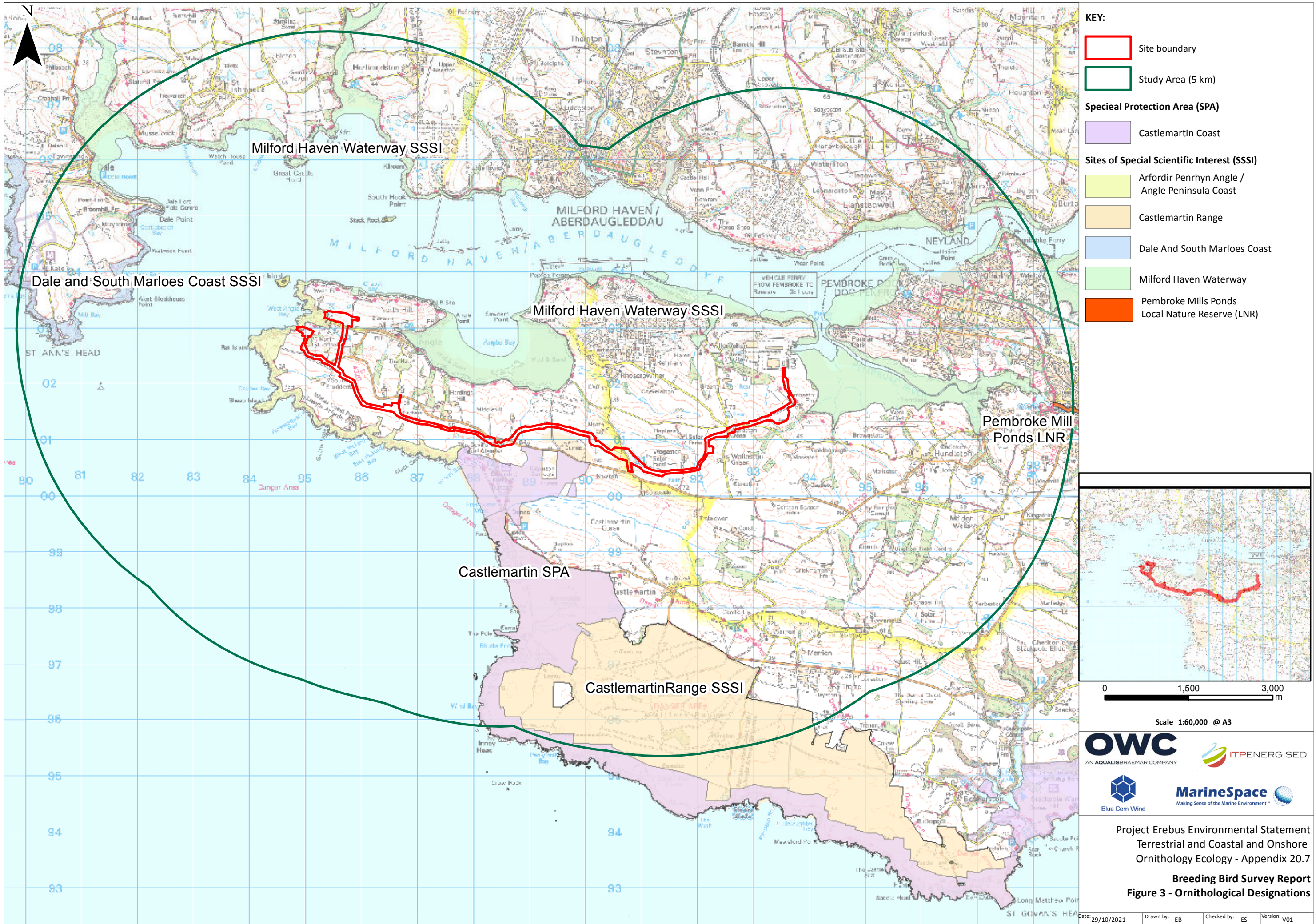
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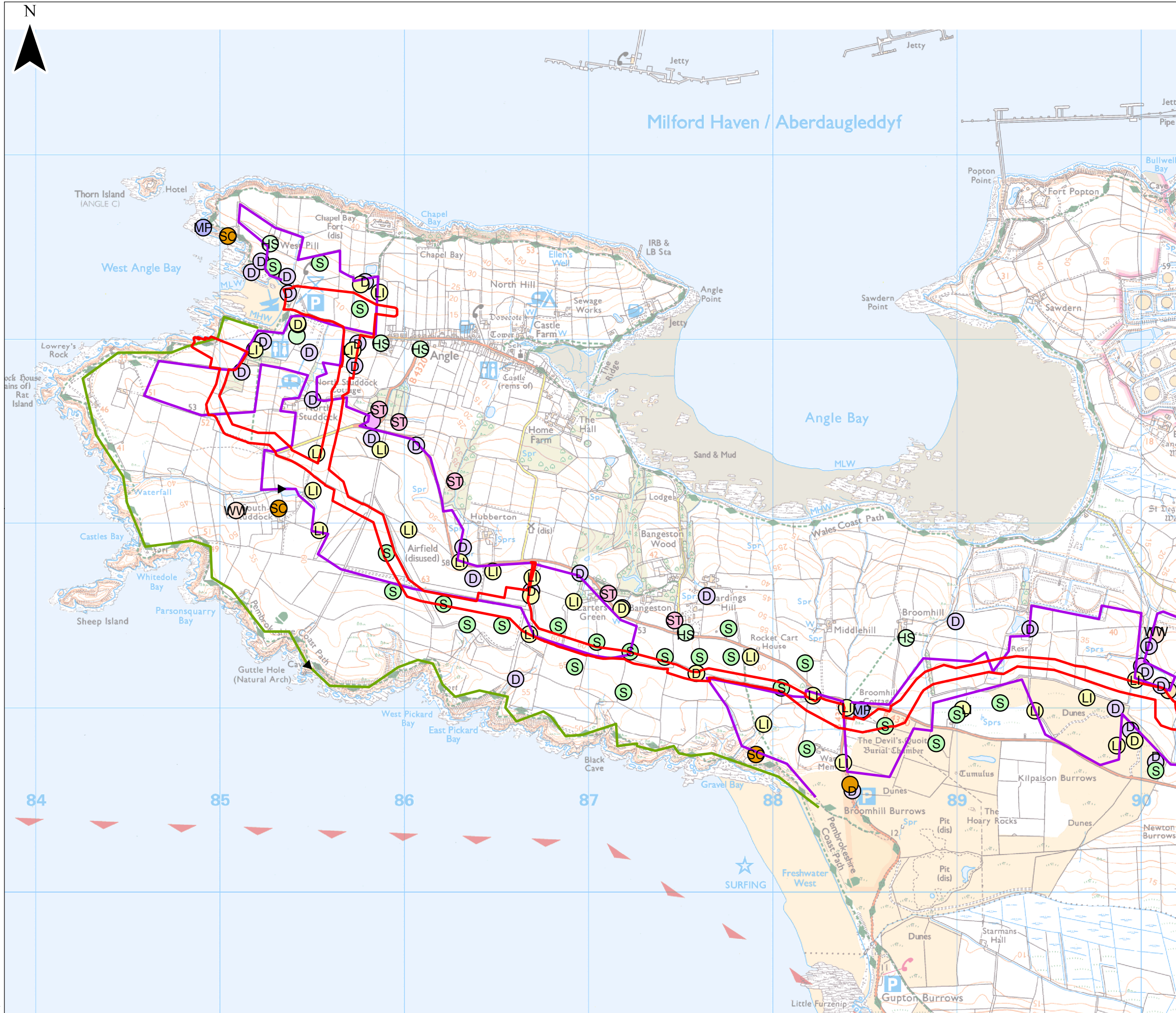
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**Breeding Bird Survey Report
Figure 2 - Transect Routes**

Date: 29/10/2021	Drawn by: EB	Checked by: ES	Version: v01
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Project Number: 2923



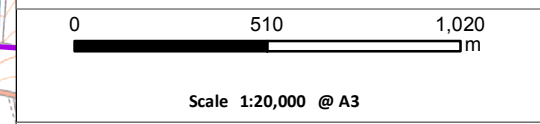


KEY:

- Site Boundary
- Transect Routes
- Coastal Transect

Species

- Bullfinch (BF)
- Dunnock (D)
- House Sparrow (HS)
- Linnet (LI)
- Mistle Thrush (M)
- Mallard (MA)
- Meadow Pipit (MP)
- Reed Bunting (RB)
- Stonechat
- Skylark (S)
- Song Thrush (ST)
- Willow Warbler (WW)
- Yellowhammer (Y)



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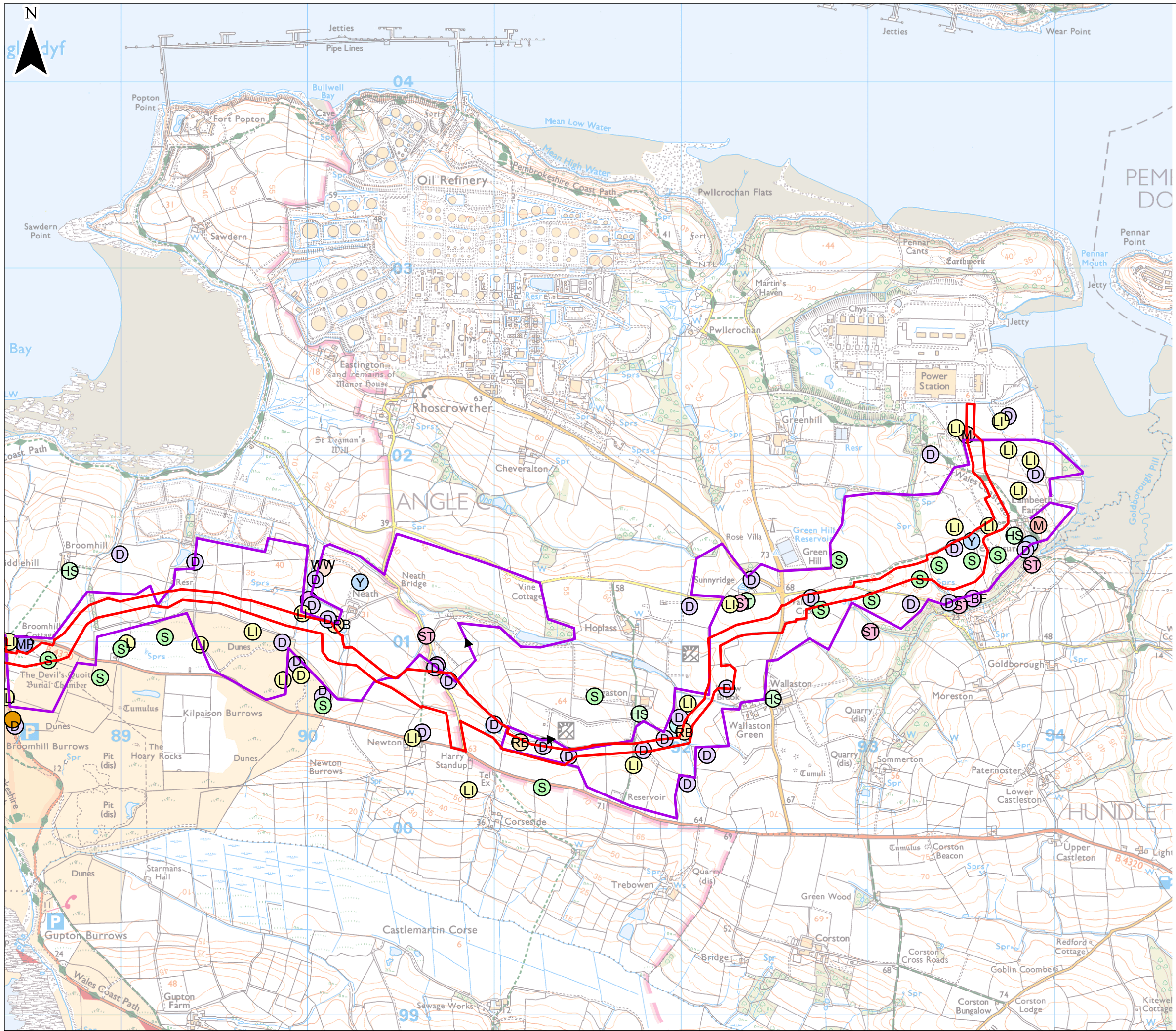
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Figure 5a - Territories

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Project Number: 2923

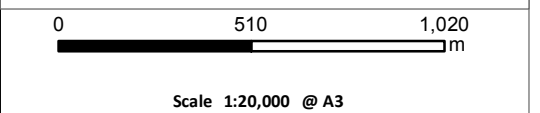


KEY:

- Site Boundary
- Transect Routes
- Coastal Transect

Species

- Bullfinch (BF)
- Dunnock (D)
- House Sparrow (HS)
- Linnet (LI)
- Mistle Thrush (M)
- Mallard (MA)
- Meadow Pipit (MP)
- Reed Bunting (RB)
- Stonechat
- Skylark (S)
- Song Thrush (ST)
- Willow Warbler (WW)
- Yellowhammer (Y)



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Figure 5b - Territories

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