

MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Environmental Statement

Volume 3, Annex 4.1: Breeding birds technical report



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Contents

1	BREEDING BIRDS TECHNICAL REPORT	1
1.1	Introduction.....	1
1.1.1	Background.....	1
1.2	Methodology.....	1
1.2.1	Study and survey areas	1
1.2.2	Relevant legislation and guidance for breeding birds.....	7
1.2.3	Consultation	8
1.2.4	Approach to establishing the baseline	8
1.2.5	Desk-based study data sources	8
1.2.6	Designated sites	10
1.2.7	Conservation status	11
1.3	Desk-based study – baseline characterisation	11
1.3.1	Designated sites	11
1.3.2	Land use	20
1.3.3	BTO records.....	22
1.3.4	Fylde Bird Club records	23
1.3.5	The Queensway development records	32
1.4	Site-specific surveys – baseline characterisation	34
1.4.1	Survey methodology	34
1.4.2	Territory mapping results	38
1.4.3	Limitations.....	123
1.5	Summary	123
1.6	References	126

Tables

Table 1.1:	Summary of key desk-based sources.....	8
Table 1.2:	Breeding bird qualifying features of the SPAs within or partly within the Onshore Order Limits and the Intertidal Infrastructure area (Source: JNCC (2022a))	12
Table 1.3:	Breeding bird qualifying features of the Ramsar sites within, or partly within, the Onshore Order Limits and the Intertidal Infrastructure area (Source: JNCC (2022b))	13
Table 1.4:	Breeding bird qualifying features of the SSSIs within, or partly within, Onshore Order Limits and the Intertidal Infrastructure area	14
Table 1.5:	NNRs within the study area with breeding features	18
Table 1.6:	LNRs within, or partly within, the study area and their distance from the Transmission Assets Order Limits	18
Table 1.7:	BHSs within, or partly within, the study area and their distance from the Onshore Order Limits and/or Intertidal Infrastructure Area.....	19
Table 1.8:	The area and percentage of land use types present within the survey area	20
Table 1.9:	Five-year peak count of the Fylde Bird Club ornithological individual species records (2019 to 2023) recorded during the breeding season months (March to July).....	28
Table 1.10:	Breeding bird survey dates	34
Table 1.11:	Number of breeding territories identified within the survey area during the 2022 and 2023 breeding bird surveys and details of their conservation and legal protection status.....	47
Table 1.12:	Monthly peak counts of birds (individuals) recorded during the 2022 breeding bird surveys. These numbers do not directly correlate with the number of territories, for a full explanation of the territory analysis process see section 1.4.1.11	128

Table 1.13: Monthly peak counts of birds (individuals) recorded during the 2023 breeding bird surveys. These numbers do not directly correlate with the number of territories, for a full explanation of the territory analysis process see section 1.4.1.11	131
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Figures

Figure 1.1: The breeding birds study area - internationally designated sites	3
Figure 1.2: The study area - nationally designated sites	4
Figure 1.3: The study area - locally designated sites	5
Figure 1.4: Onshore ornithology survey area	6
Figure 1.5: Land use within the onshore ornithology survey area	21
Figure 1.6: Extent of breeding bird surveys for the Queensway development	33
Figure 1.7: Coverage of the Transmission Assets breeding bird surveys	37
Figure 1.8: Canada goose territorial distribution	51
Figure 1.9: Shelduck territorial distribution	52
Figure 1.10: Shoveler territorial distribution	53
Figure 1.11: Gadwall territorial distribution	54
Figure 1.12: Mallard territorial distribution	55
Figure 1.13: Teal territorial distribution	56
Figure 1.14: Grey partridge territorial distribution	57
Figure 1.15: Stock dove territorial distribution	58
Figure 1.16: Moorhen territorial distribution	59
Figure 1.17: Coot territorial distribution	60
Figure 1.18: Oystercatcher territorial distribution	61
Figure 1.19: Avocet territorial distribution	62
Figure 1.20: Lapwing territorial distribution	63
Figure 1.21: Little ringed plover territorial distribution	64
Figure 1.22: Curlew territorial distribution	65
Figure 1.23: Black-tailed godwit territorial distribution	66
Figure 1.24: Redshank territorial distribution	67
Figure 1.25: Grey heron territorial distribution	68
Figure 1.26: Little egret territorial distribution	69
Figure 1.27: Kingfisher territorial distribution	70
Figure 1.28: Sparrowhawk territorial distribution	71
Figure 1.29: Buzzard territorial distribution	72
Figure 1.30: Kestrel territorial distribution	73
Figure 1.31: Barn owl territorial distribution	74
Figure 1.32: Little owl territorial distribution	75
Figure 1.33: Tawny owl territorial distribution	76
Figure 1.34: Great spotted woodpecker territorial distribution	77
Figure 1.35: Swift territorial distribution	78
Figure 1.36: Swallow territorial distribution	79
Figure 1.37: House martin territorial distribution	80
Figure 1.38: Jay territorial distribution	81
Figure 1.39: Rook territorial distribution	82
Figure 1.40: Coal tit territorial distribution	83
Figure 1.41: Blue tit territorial distribution	84
Figure 1.42: Great tit territorial distribution	85
Figure 1.43: Skylark territorial distribution	86
Figure 1.44: Cetti's warbler territorial distribution	87
Figure 1.45: Long-tailed tit territorial distribution	88
Figure 1.46: Willow warbler territorial distribution	89

Figure 1.47: Chiffchaff territorial distribution.....	90
Figure 1.48: Sedge warbler territorial distribution.....	91
Figure 1.49: Reed warbler territorial distribution	92
Figure 1.50: Grasshopper warbler territorial distribution	93
Figure 1.51: Blackcap territorial distribution	94
Figure 1.52: Lesser whitethroat territorial distribution	95
Figure 1.53: Whitethroat territorial distribution	96
Figure 1.54: Wren territorial distribution	97
Figure 1.55: Nuthatch territorial distribution	98
Figure 1.56: Treecreeper territorial distribution	99
Figure 1.57: Starling territorial distribution.....	100
Figure 1.58: Song thrush territorial distribution	101
Figure 1.59: Mistle thrush territorial distribution	102
Figure 1.60: Blackbird territorial distribution	103
Figure 1.61: Robin territorial distribution	104
Figure 1.62: Redstart territorial distribution	105
Figure 1.63: Stonechat territorial distribution.....	106
Figure 1.64: Wheatear territorial distribution	107
Figure 1.65: Tree sparrow territorial distribution	108
Figure 1.66: House sparrow territorial distribution	109
Figure 1.67: Dunnock territorial distribution.....	110
Figure 1.68: Yellow wagtail territorial distribution	111
Figure 1.69: Grey wagtail territorial distribution.....	112
Figure 1.70: Pied wagtail territorial distribution	113
Figure 1.71: Meadow pipit territorial distribution	114
Figure 1.72: Chaffinch territorial distribution.....	115
Figure 1.73: Bullfinch territorial distribution	116
Figure 1.74: Greenfinch territorial distribution	117
Figure 1.75: Linnet territorial distribution	118
Figure 1.76: Goldfinch territorial distribution.....	119
Figure 1.77: Corn bunting territorial distribution	120
Figure 1.78: Yellowhammer territorial distribution	121
Figure 1.79: Reed bunting territorial distribution	122

Glossary

Term	Meaning
Applicants	Morgan Offshore Wind Limited (Morgan OWL) and Morecambe Offshore Windfarm Ltd (Morecambe OWL).
Baseline	The status of the environment without the Transmission Assets in place.
Birds of Conservation Concern (BOCC)	Birds listed as red and amber on the list produced by the British Trust for Ornithology (BTO). The current list is BOCC5 (Stanbury, <i>et al.</i> , 2021)
Environmental Statement	The document presenting the results of the Environmental Impact Assessment process.
Expert Working Group	A forum for targeted engagement with regulators and interested stakeholders through the Evidence Plan process.
Intertidal Infrastructure Area	The temporary and permanent areas between MLWS and MHWS.
Landfall	The area in which the offshore export cables make landfall (come on shore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area at Lytham St. Annes between Mean Low Water Springs and the transition joint bays inclusive of all construction works, including the offshore and onshore cable routes, intertidal working area and landfall compound(s).
Morgan and Morecambe Offshore Wind Farms: Transmission Assets	The offshore export cables, landfall and onshore infrastructure for the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm. This includes the offshore export cables, landfall site, onshore export cables, onshore substations, 400 kV grid connection cables and associated grid connection infrastructure such as circuit breaker compounds. Also referred to in this report as the Transmission Assets, for ease of reading.
Onshore Order Limits	See Transmission Assets Order Limits: Onshore (below).
Potential Special Protection Areas	A site identified as potentially qualifying for Special Protection Area classification and for which a decision to classify has yet to be taken pending consultation.
Preliminary Environmental Information Report	A report that provides preliminary environmental information in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. This is information that enables consultees to understand the likely significant environmental effects of a project and which helps to inform consultation responses.
Ramsar sites	Wetlands of international importance that have been designated under the criteria of the Ramsar Convention. In combination with Special Protection Areas and Special Areas of Conservation, these sites contribute to the national site network.
Special Protection Areas	A site designation specified in the Conservation of Habitats and Species Regulations 2017, classified for rare and vulnerable birds, and for regularly occurring migratory species. Special Protection Areas contribute to the national site network.

Term	Meaning
Study area	This is an area which is defined for each environmental topic which includes the Transmission Assets Order Limits as well as potential spatial and temporal considerations of the impacts on relevant receptors. The study area for each topic is intended to cover the area within which an impact can be reasonably expected.
Survey area	The area within which the surveys relevant to this topic have been undertaken. This may differ from the Study Area as a Survey Area will be based on species or survey-specific guidance on the extent of survey required, which may be limited by, for example, habitat conditions, or be defined in terms of buffer areas around an area of potential impact.
Transmission Assets	See Morgan and Morecambe Offshore Wind Farms: Transmission Assets (above).
Transmission Assets Order Limits: Onshore	The area within which all components of the Transmission Assets landward of Mean High Water Springs will be located, including areas required on a temporary basis during construction and/or decommissioning (such as construction compounds). Also referred to in this report as the Onshore Order Limits, for ease of reading.
Transmission Assets Order Limits	The area within which all components of the Transmission Assets will be located, including areas required on a temporary basis during construction and/or decommissioning (such as construction compounds).

Acronyms

Acronym	Meaning
BHS	Biological Heritage Sites
BOCC5 UK	The fifth review of Birds of Conservation Concern
BTO	British Trust for Ornithology
ES	Environmental Statement
EWG	Expert Working Group
HAT	Highest Astronomical Tide
LNR	Local Nature Reserve
NNR	National Nature Reserve
PRoW	Public Rights of Way
pSPA	Potential Special Protection Area
RSPB	Royal Society for the Protection of Birds
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
UK	United Kingdom

Units

Unit	Description
%	Percentage
km	Kilometres
km ²	Kilometres Squared
m	Metre

1 Breeding birds technical report

1.1 Introduction

1.1.1 Background

- 1.1.1.1 This document forms Annex 4.1: Breeding birds technical report of the Environmental Statement (ES) prepared for the Morgan and Morecambe Offshore Wind Farms: Transmission Assets (referred to hereafter as the
- 1.1.1.2 'Transmission Assets'). It outlines the methods used to characterise the baseline breeding bird assemblage and presents the results of the desk-based studies and site-specific surveys undertaken across the 2022 and 2023 breeding seasons.
- 1.1.1.3 This annex should be read in conjunction with Volume 3, Annex 4.2: Wintering and migratory birds technical report (document reference F3.4.2), Volume 3, Annex 4.3: Intertidal birds technical report (document reference F3.4.3) and Volume 3, Annex 4.4: Onshore and intertidal ornithology survey methodologies of the ES (document reference F3.4.4).
- 1.1.1.4 This baseline information has been used to inform the assessment reported in Volume 3, Chapter 4: Onshore and intertidal ornithology of the ES (document reference F3.4).
- 1.1.1.5 Throughout this report the order in which birds are presented is based upon the British List (2023) as maintained by the British Ornithologists' Union and is correct as of the most recent update published in December 2023.

1.2 Methodology

1.2.1 Study and survey areas

- 1.2.1.1 In this report, there are two specific terms used to identify areas used for baseline data collection and characterisation, as outlined below.

The study area

- 1.2.1.2 The Transmission Assets onshore and intertidal ornithology breeding bird study area (hereafter referred to as 'the study area') is defined as the Transmission Assets Order Limits: Onshore (landward of Mean High Water Springs (MHWS)) and the Intertidal Infrastructure Area, plus a 20 kilometre (km) buffer, hereafter referred to as the study area. This has been used to identify any designated sites which could be impacted by the Transmission Assets. The 20 km buffer is based on the core foraging range of pink-footed goose (Scottish Natural Heritage, 2016). The 20 km buffer used is equal to, or greater, than the study area of similar projects (RPS, 2024; SLR, 2024) and is appropriate in this instance as a precautionary distance. Designated sites identified include the following.

- Internationally designated ornithological sites, specifically Special Protection Areas (SPAs), potential Special Protection Areas (pSPAs) and Ramsar sites with qualifying breeding features (**Figure 1.1**).
- Nationally designated sites, specifically Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs) with qualifying or breeding bird features (**Figure 1.2**).
- Locally designated sites, specifically Local Nature Reserves (LNRs) and Biological Heritage Sites (BHSs) (**Figure 1.3**).

The survey area

- 1.2.1.3 The Transmission Assets onshore ornithology survey area (hereafter referred to as ‘the survey area’) encompasses Transmission Assets Order Limits: Onshore (landward of Mean High Water Springs (MHWS)) and the Intertidal Infrastructure Area (excluding the proposed mitigation area at Fairhaven Saltmarsh, Lytham St. Annes) plus a 500 metre (m) buffer, up to Highest Astronomical Tide (HAT) (**Figure 1.4**). The 500 m buffer is included to take account of bird interests that may occur adjacent or close to the Transmission Assets. The 500 m buffer is based on typical disturbance buffers for the breeding bird assemblage expected to be found in the survey area (Goodship and Furnace, 2022).

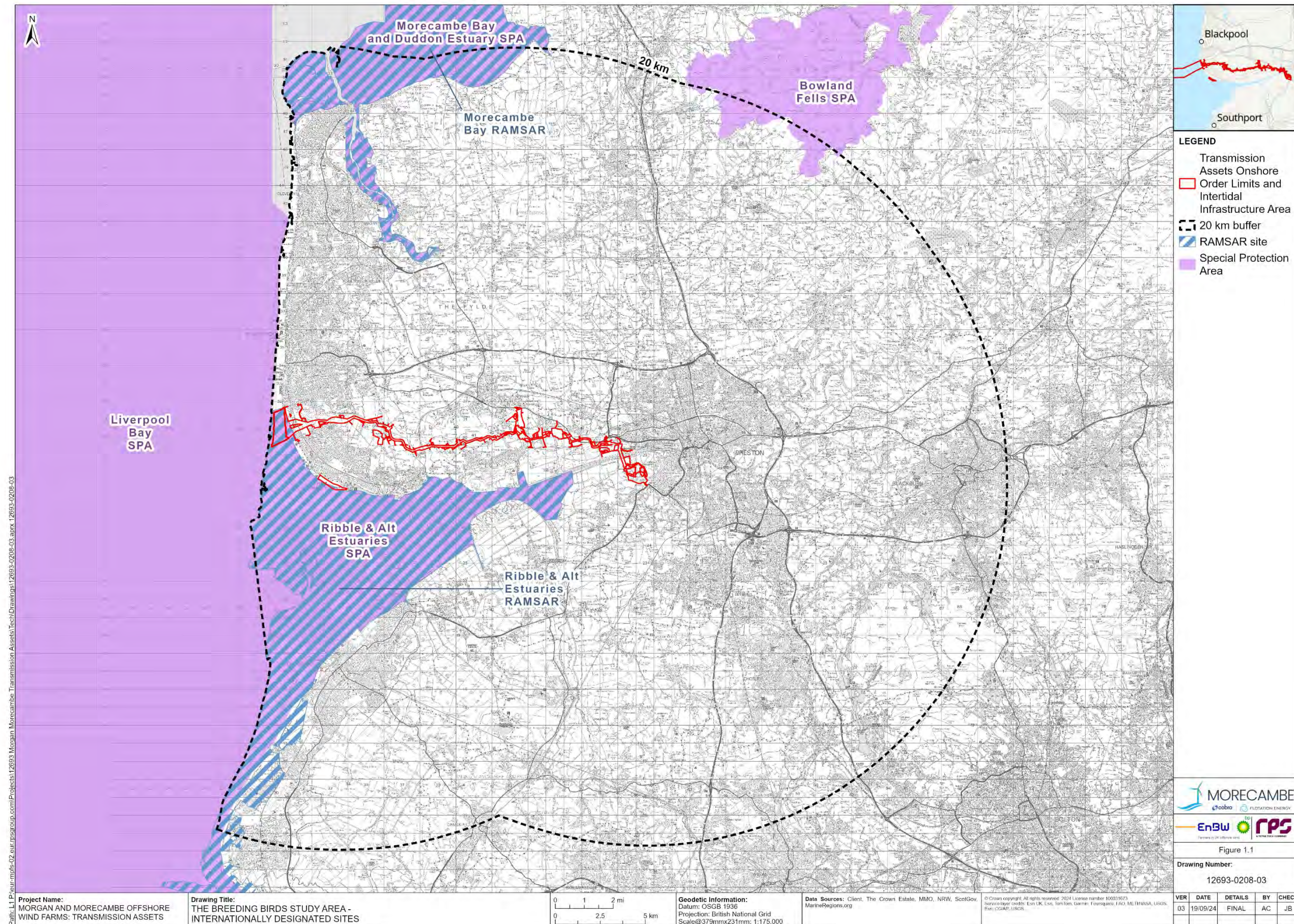


Figure 1.1: The breeding birds study area - internationally designated sites

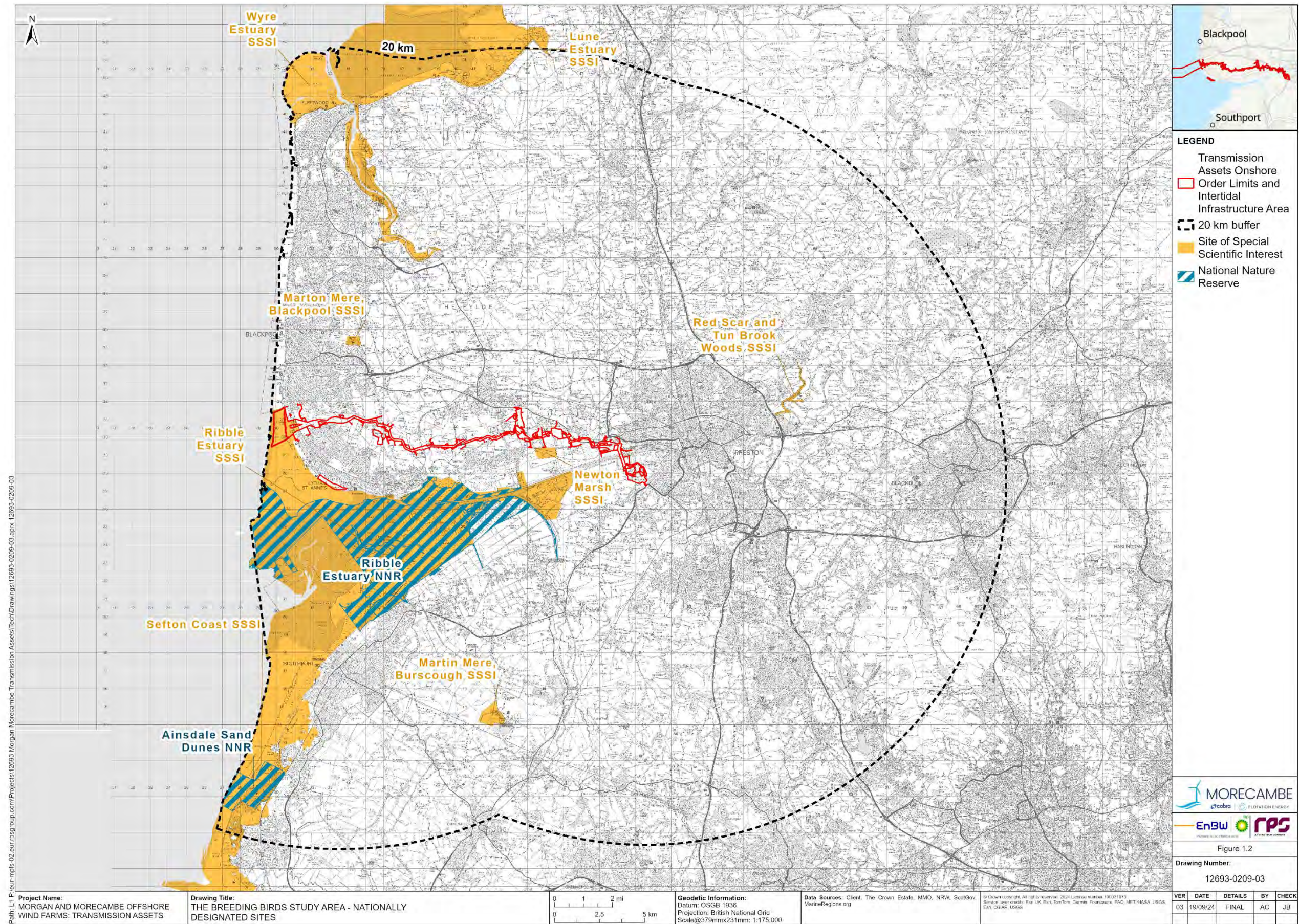


Figure 1.2: The study area - nationally designated sites

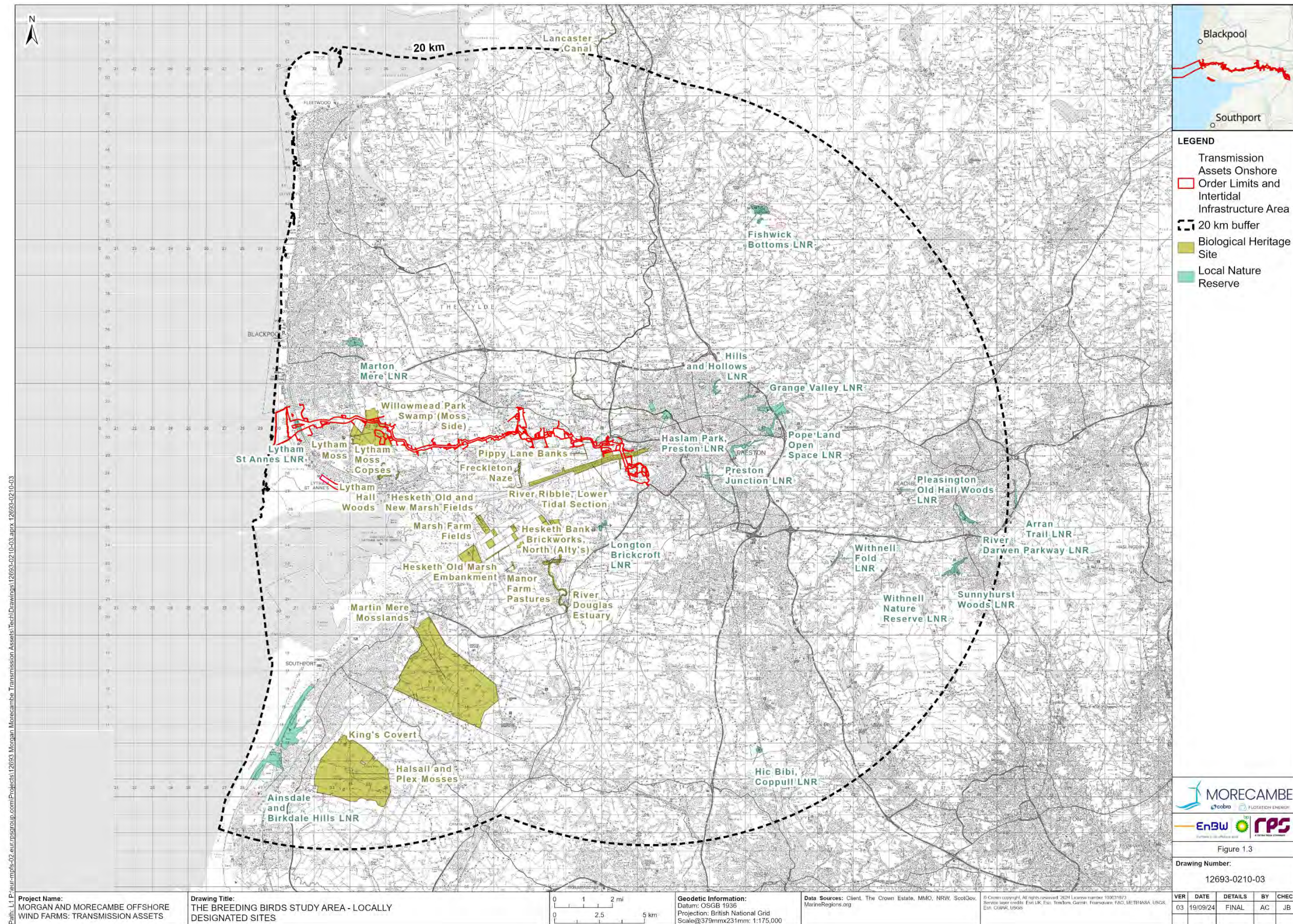


Figure 1.3: The study area - locally designated sites

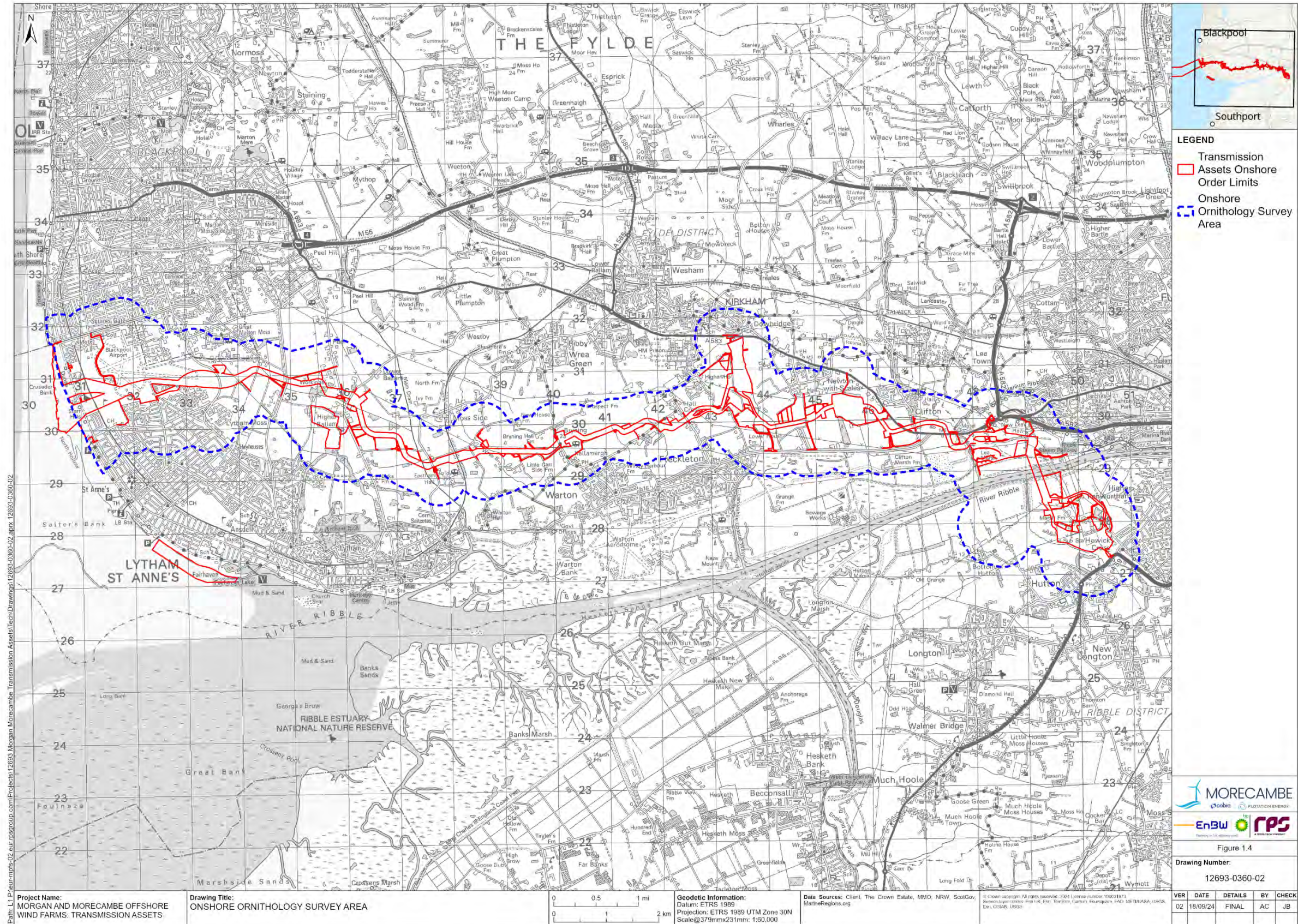


Figure 1.4: Onshore ornithology survey area

1.2.2 Relevant legislation and guidance for breeding birds

- 1.2.2.1 There are two key pieces of legislation that protect breeding birds and their nests under UK law, namely the Conservation of Habitats and Species Regulations 2017, as amended ('the Conservation of Habitats and Species Regulations 2017') and the Wildlife and Countryside Act 1981, as amended ('the Wildlife and Countryside Act 1981').
- 1.2.2.2 European Council Directive 2009/147/EC (otherwise known as 'the Birds Directive') recognised that habitat loss and degradation are the most serious threats to the conservation of wild birds. It stated that all member states must designate SPAs for the survival of all species listed in Annex 1 of the Birds Directive, sub-species and all migratory bird species (hereafter referred to as 'Annex 1 species'). After the UK left the European Union, certain elements of the Birds Directive were transposed into UK law through the Conservation of Habitats and Species Regulations 2017. This has created a national site network to ensure continued protection for existing SPAs and for any new sites designated under these regulations.
- 1.2.2.3 All wild birds, their nests and their eggs are protected under Part 1 of the Wildlife and Countryside Act 1981. Subject to the provisions of Section 1, if any person intentionally:
- kills, injures or takes any wild bird;
 - takes, damages, or destroys the nest of a wild bird included in Schedule ZA1;
 - takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or
 - takes or destroys an egg of any wild bird,
- they will be subject to an offence.
- 1.2.2.4 In addition, for birds listed in Schedule 1 of the Wildlife and Countryside Act 1981 (hereafter referred to as 'Schedule 1 species'), it is also an offence to intentionally or recklessly:
- disturb any species listed under Schedule 1 of the Act whilst it is building a nest or is in, on or near a nest containing eggs or young; or
 - disturb the dependent young of any species listed under Schedule 1.
- 1.2.2.5 The two main pieces of legislation described above are supported by additional legislation. One key piece of legislation is Section 41 of the Natural Environment and Rural Communities Act 2006, which also provides a list of 'species and habitats of principle importance'. Bird species listed in this legislation are hereafter referred to as 'Section 41 species'. Public bodies, including local authorities have a legal duty to have regard to conserving biodiversity in the exercise of their normal functions.
- 1.2.2.6 The collation of baseline data presented within this annex has considered the following guidance.

- Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines on ecological impact assessment (CIEEM, 2022).
- Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards. Phase I: Expectations for pre-application baseline data for designated nature conservation and landscape receptors to support offshore wind applications (Natural England, 2022).

1.2.3 Consultation

- 1.2.3.1 The proposed breeding bird survey methodology and brief findings of the 2022 surveys were presented at the first Expert Working Group (EWG) in March 2023.
- 1.2.3.2 Comments on the detailed methodologies as presented to the EWG were provided by Natural England on 15 September 2023 with a statement of agreement.
- 1.2.3.3 More details regarding consultation relevant to breeding birds can be found in Volume 3, Chapter 4: Onshore and intertidal ornithology of the ES.

1.2.4 Approach to establishing the baseline

- 1.2.4.1 To establish a baseline of potential breeding ornithological receptors within the study and survey areas, a combination of site-specific surveys and a review of existing data sources have been undertaken. The methodology followed during the site-specific surveys is described in **section 1.4.1**. The detailed methodology is presented in Volume 3, Annex 4.4: Onshore and intertidal ornithology survey methodologies of the ES.
- 1.2.4.2 The results of the desk-based study undertaken are described in **section 1.3** and the results of the site-specific surveys in **section 1.4**.

1.2.5 Desk-based study data sources

- 1.2.5.1 Information on breeding birds within the study area has been collected through a detailed desk-based study of existing data sources. These sources are summarised in **Table 1.1**.

Table 1.1: Summary of key desk-based sources

Title	Source	Year published	Author	Year data obtained
British Trust for Ornithology (BTO) Data Report for the Transmission Assets – onshore elements.	BTO	2023	BTO	2023

Title	Source	Year published	Author	Year data obtained
Queensway Farmland Conservation Area and Nature Park Lytham St. Annes Breeding Bird Survey report.	The Environment Partnership Ltd	2021	Jenkins, L.	2022
Fylde Bird Club records	Fylde Bird Club	2023	Ellis, P.	2023

BTO records

- 1.2.5.2 Data from the BTO is presented for two periods: survey data from across the UK between 2007 to 2011 to provide data for a complete bird atlas of the UKs wintering and breeding species and a separate list of species calculated for 2018 to 2022 from the BTO's breeding bird survey and BirdTrack application data.
- 1.2.5.3 The 2007 to 2011 data uses a 2 km square as lowest resolution, whereas the more recent (2019 to 2023) uses a 1 km resolution, therefore the BTO records provide an indication of species that could be present within the vicinity of the Transmission Assets. The BTO data provides complete spatial coverage of the survey area.

Fylde Bird Club data

- 1.2.5.4 Fylde Bird Club records were provided for a total of 26 tetrad squares¹ within or partly within the survey area. The Fylde Bird Club data contains complete spatial coverage of the survey area. Records were provided detailing a combination of individual species counts, dates and locations recorded across all months for ten years of data (2014 to 2023).
- 1.2.5.5 The Fylde Bird Club data records provide a wealth of valuable data, in particular providing evidence of a species presence within the survey area. However, as the records represent a collation of member records, they do not necessarily represent an accurate relative abundance of all species as no evidence that they were systematically collected (e.g., defined methodologies, survey effort per area, and survey boundaries) were provided with the data. Local records often include notable ornithological records of rarities but not necessarily regularly submitted records of common species within defined survey boundaries.
- 1.2.5.6 It must be noted that the presence of species during the breeding season does not necessarily mean the species is an active breeder within the survey area. The Fylde Bird Club data does not include breeding status for all

¹ A tetrad square is a group of four 1 km squares arranged into a 2 km by 2 km square.

records. The annual peak counts are presented to indicate the highest number of records held by the Fylde Bird Club in one of the latest five years, but these numbers are not absolute values, nor do they indicate the value of the site for any one species.

Processing the Fylde Bird Club data records

- 1.2.5.7 Individual records from the Fylde Bird Club dataset do not always include evidence of breeding status. Therefore, to consider which species may be both present and potentially breeding, the Fylde Bird Club data was split into records submitted within the breeding season, March to July, and those outside the breeding season, August to February. The August to February records were categorised as non-breeding and are analysed and presented separately in Volume 3, Annex 4.2: Wintering and migratory birds technical report of the ES and Volume 3 (document reference F3.4.2), Annex 4.3: Intertidal birds technical report of the ES (document reference F3.4.3).
- 1.2.5.8 As the data contained multiple sightings for multiple sites and years, a maximum count per species for each site per month per year was calculated. A maximum annual count was then calculated from the last five years (2019 to 2023). This peak count is considered to be the minimum abundance present, which on a precautionary basis could be considered the minimum annual breeding population recorded within the most recent five year period (2019 to 2023) of available Fylde Bird Club data, and is shown in **Table 1.9**.

Queensway development data

- 1.2.5.9 The Queensway development, which overlaps with a small section of the study area (**Figure 1.6**), includes a phased residential development as well as the creation of a Farmland Conservation Area and Nature Park to compensate for the loss of functionally linked land associated with the Ribble and Alt Estuaries SPA and Ramsar site. The ornithological surveys undertaken for this development have covered an area of the study area to the north east of Lytham St. Annes, close to Blackpool Airport. The development is now referred to as 'Richmond Point', however throughout this annex, it is referred to as 'the Queensway development'. A breeding bird survey was undertaken by The Environment Partnership for this residential development between May and July 2021. The findings and supporting data were presented in a report, as referred to in **Table 1.1** (Jenkins, 2021).

1.2.6 Designated sites

- 1.2.6.1 As noted in **section 1.2.1**, all internationally and nationally designated sites with qualifying breeding bird features and all locally designated sites within the study area were identified. The extent of the study area is standardised across all three annexes (Volume 3, Annex 4.2: Wintering and migratory birds technical report, Volume 3, Annex 4.3: Intertidal birds technical report). The 20 km distance set out is based on the farthest foraging distance of the assessed species, which is the winter foraging range of the pink-footed goose *Anser brachyrhynchus*, as stated in the Scottish Natural Heritage guidance document for assessing connectivity with SPAs (Scottish Natural

Heritage (now NatureScot), 2016). Citations for each designated site were reviewed to identify those with breeding bird features. As locally designated sites do not have published citations, details of specific ornithological features were difficult to identify. Therefore, on a precautionary basis, all LNRs within the study area have been included for further assessment at this stage. All BHSs with bird features have also been included.

1.2.7 Conservation status

- 1.2.7.1 For the breeding species considered likely to be present, consideration was also given to their conservation status, specifically whether the species were listed in Annex 1 of the Birds Directive or in Schedule 1 of the Wildlife and Countryside Act 1981.
- 1.2.7.2 Consideration was given to species listed as priority species by the Secretary of State under Section 41 of the Natural Environment and Rural Communities Act 2006 or species listed as either red or amber-listed species on the Birds of Conservation Concern 5 (BOCC5 UK) (Stanbury *et al.*, 2021). The BOCC5 UK is the latest assessment of the status of all the UK's 245 regularly occurring bird species.
- 1.2.7.3 Consideration was also given to those species listed as a Lancashire Biodiversity Action Plan species (Lancashire County Council, 2024).

1.3 Desk-based study – baseline characterisation

1.3.1 Designated sites

SPAs

- 1.3.1.1 There are four SPAs with qualifying breeding bird features within or partly within the study area: the Ribble and Alt Estuaries, Morecambe Bay and Duddon Estuary, Bowland Fells and Liverpool Bay/Bae Lerpwl (**Figure 1.1**).
- 1.3.1.2 Breeding designated features for each of the SPAs are listed in **Table 1.2** together with the individual SPA population size. A summary of the designated features is provided below, some species may be designated for both breeding and non-breeding seasons. Count and population data is quoted from site citations.
- The Ribble and Alt Estuaries SPA supports four listed breeding bird features. During the breeding season the area regularly supports an assemblage of seabirds in addition to the individually named species.
 - Morecambe Bay and Duddon Estuary SPA is designated for a total of five breeding features.
 - Bowland Fells SPA is designated for two breeding species and has a proposed new breeding interest: lesser black-backed gull *Larus fuscus*.
 - Liverpool Bay/Bae Lerpwl SPA is designated for two breeding features.

Table 1.2: Breeding bird qualifying features of the SPAs within or partly within the Onshore Order Limits and the Intertidal Infrastructure area (Source: JNCC (2022a))

SPA	Distance from Onshore Order Limits and Intertidal Infrastructure area (km)	Interest features	SPA population at designation
Ribble and Alt Estuaries UK90051 03	Partly within Onshore Order Limits	Ruff <i>Calidris pugnax</i>	One pair (late 1980s count)
		Lesser black-backed gull	1,800 pairs (count as at 1993)
		Common tern <i>Sterna hirundo</i>	182 pairs (count as at 1996)
		Breeding seabird assemblage	29,236 individuals (including black-headed gull <i>Chroicocephalus ridibundus</i> , lesser black-backed gull and common tern)
Liverpool Bay/Bae Lerpwl UK90202 94	0.70	Little tern	260 individuals (2010 to 2014, Seabird Monitoring Programme, pers.comm)
		Common tern	360 individuals (2011 to 2015, Seabird Monitoring Programme)
Morecambe Bay and Duddon Estuary UK90203 26	9.5	Herring gull <i>Larus argentatus</i>	20,000 individuals (Morecambe Bay SPA citation value 1991)
		Lesser black-backed gull	9,720 individuals (Seabird Monitoring Programme database, RSPB and Wildlife Cumbria Trust)
		Sandwich tern <i>Thalasseus sandvicensis</i>	1,608 individuals (summed data from original Morecambe Bay SPA and Duddon Estuary SPA citations)
		Little tern <i>Sternula albifrons</i>	84 individuals (2010 to 2014, RSPB data)
		Common tern	570 individuals (Morecambe Bay SPA citation value 1991)
Bowland Fells UK90051 51	17.6	Lesser black-backed gull (proposed interest feature)	4,575 pairs (2009 to 2012 count data)
		Hen harrier <i>Circus cyaneus</i>	12 pairs (1986 to 1990 count data)
		Merlin <i>Falco columbarius</i>	21 pairs (1986 to 1990 count data)

Ramsar sites

1.3.1.3 There are two Ramsar sites with qualifying breeding bird features within the study area: the Ribble and Alt Estuaries and Morecambe Bay (**Figure 1.1**). The designated breeding feature for the Ramsar sites are listed in **Table 1.3**, together with details of the individual Ramsar sites population sizes. A brief summary of the designated features is provided below, some species may be designated for both the breeding and non-breeding seasons.

- The Ribble and Alt Estuaries Ramsar site is designated for one species of breeding bird. The site is also noted as supporting a breeding wetland bird assemblage.
- Morecambe Bay Ramsar site is designated for three species of breeding bird.

Table 1.3: Breeding bird qualifying features of the Ramsar sites within, or partly within, the Onshore Order Limits and the Intertidal Infrastructure area (Source: JNCC (2022b))

Ramsar site	Distance from Onshore Order Limits and Intertidal Infrastructure area (km)	Breeding interest features	Ramsar population at designation
Ribble and Alt Estuaries	0.00	Lesser black-backed gull	4,108 nests (Mitchell <i>et al.</i> , 2004)
Morecambe Bay	9.5	Herring gull	10,431 (Mitchell <i>et al.</i> , 2004)
		Lesser black-backed gull	19,666 (Mitchell <i>et al.</i> , 2004)
		Sandwich tern	290 pairs (1992 to 1996 mean)

SSSIs

1.3.1.4 A total of ten SSSIs with breeding ornithological features are within or partly within the study area. The breeding features of these sites are provided in **Table 1.4**. A brief summary of the sites with breeding interest features is listed below; some species may be of interest in both breeding and non-breeding seasons.

- Lytham St. Annes Dunes has one ornithological feature of interest during the breeding season.
- Ribble Estuary has a total of ten breeding bird features. Listed within the citation are an additional two species that have been deemed as potential breeders at the site and are therefore included within this report. The site is noted as supporting assemblages of breeding birds on lowland damp grasslands and sand-dunes and saltmarshes.

- Newton Marsh has 15 breeding ornithological features listed as individual species or as part of a breeding bird assemblage within the site citation.
- Marton Mere, Blackpool has six species listed as breeding features within the site citation. The site is noted as supporting a breeding bird assemblage and an additional five species listed within the citation without a specific season noted are deemed as species with the potential to use the area for breeding.
- Red Scar and Tun Brook Woods has one species of breeding bird noted on the site citation.
- Martin Mere, Burscough has a total of four breeding bird features. The area also supports an assemblage of breeding birds on lowland damp grasslands.
- Rough Hey Wood has six breeding ornithological features.
- West Pennine Moors has 21 breeding ornithological features. The site also supports assemblages of breeding birds in woodland and breeding birds on upland moorland waterbodies and upland in-bye and allotment farmland.
- Lune Estuary has one breeding ornithological feature. Listed within the citation are an additional three species that are deemed as likely to use the site for breeding purposes.
- Bowland Fells has a total of 24 breeding ornithological features, The site also supports assemblages of breeding birds on mixed: upland moorland, grassland and woodland.

Table 1.4: Breeding bird qualifying features of the SSSIs within, or partly within, Onshore Order Limits and the Intertidal Infrastructure area

SSSI	Distance from Onshore Order Limits and Intertidal Infrastructure area (km)	Interest features
Lytham St. Annes Dunes	Partly within the Onshore Order Limits and/or Intertidal Infrastructure area	Stonechat <i>Saxicola rubicola</i>
Ribble Estuary	Partly within the Onshore Order Limits and/or Intertidal Infrastructure area	Shoveler <i>Spatula clypeata</i>
		Mallard <i>Anas platyrhynchos</i>
		Teal <i>Anas crecca</i>
		Lapwing <i>Vanellus vanellus</i>
		Ringed plover <i>Charadrius hiaticula</i>
		Curlew <i>Numenius arquata</i>
		Ruff
		Snipe <i>Gallinago gallinago</i>
		Redshank <i>Tringa totanus</i>
		Black-headed gull

SSSI	Distance from Onshore Order Limits and Intertidal Infrastructure area (km)	Interest features
		Common tern
		Skylark <i>Alauda arvensis</i>
Newton Marsh	0.02	Mute swan <i>Cygnus olor</i>
		Shelduck <i>Tadorna tadorna</i>
		Mallard
		Moorhen <i>Gallinula chloropus</i>
		Coot <i>Fulica atra</i>
		Little grebe <i>Tachybaptus ruficollis</i>
		Oystercatcher <i>Haematopus ostralegus</i>
		Lapwing
		Snipe
		Redshank
		Skylark
		Yellow wagtail <i>Motacilla flava</i>
		Meadow pipit <i>Anthus pratensis</i>
		Corn bunting <i>Emberiza calandra</i>
		Reed bunting <i>Emberiza schoeniclus</i>
Marton Mere, Blackpool	3.78	Shoveler
		Mallard
		Pochard <i>Aythya ferina</i>
		Tufted duck <i>Aythya fuligula</i>
		Coot
		Little grebe
		Great crested grebe <i>Podiceps cristatus</i>
		Oystercatcher
		Curlew
		Ruff
Red Scar and Tun Brook Woods	7.83	Redshank
		Hawfinch <i>Coccothraustes</i>

SSSI	Distance from Onshore Order Limits and Intertidal Infrastructure area (km)	Interest features
Martin Mere, Burscough	11.49	Greylag goose <i>Anser anser</i>
		Gadwall <i>Mareca strepera</i>
		Mallard
		Snipe
Rough Hey Wood	13.1	Grey heron <i>Ardea cinerea</i>
		Sparrowhawk <i>Accipiter nisus</i>
		Tawny owl <i>Strix aluco</i>
		Great spotted woodpecker <i>Dendrocopos major</i>
		Chiffchaff <i>Phylloscopus collybita</i>
		Blackcap <i>Sylvia atricapilla</i>
West Pennine Moors	13.7	Red grouse <i>Lagopus</i>
		Lapwing
		Golden plover <i>Pluvialis apricaria</i>
		Curlew
		Dunlin <i>Calidris alpina</i>
		Black-headed gull
		Mediterranean gull <i>Ichthyaetus melanocephalus</i>
		Grey heron
		Buzzard <i>Buteo</i>
		Short-eared owl <i>Asio flammeus</i>
		Merlin
		Peregrine <i>Falco peregrinus</i>
		Raven <i>Corvus corax</i>
		Willow tit <i>Poecile montanus</i>
		Wood warbler <i>Phylloscopus sibilatrix</i>
		Spotted flycatcher <i>Muscicapa striata</i>
		Pied flycatcher <i>Ficedula hypoleuca</i>
		Wheatear <i>Oenanthe oenanthe</i>

SSSI	Distance from Onshore Order Limits and Intertidal Infrastructure area (km)	Interest features
		Tree pipit <i>Anthus trivialis</i>
		Twite <i>Linaria flavirostris</i>
		Teal
Lune Estuary	16.7	Shelduck
		Wigeon <i>Mareca penelope</i>
		Mallard
		Common tern
Bowland Fells	17.6	Oystercatcher
		Lapwing
		Golden plover
		Curlew
		Woodcock <i>Scolopax rusticola</i>
		Snipe
		Common sandpiper <i>Actitis hypoleucos</i>
		Redshank
		Lesser black-backed gull
		Hen harrier
		Short-eared owl
		Kestrel <i>Falco tinnunculus</i>
		Merlin
		Peregrine
		Skylark
		Ring ouzel <i>Turdus torquatus</i>
		Spotted flycatcher
		Whinchat <i>Saxicola rubetra</i>
		Wheatear
		Dipper <i>Cinclus cinclus</i>
		Meadow pipit
		Grey wagtail <i>Motacilla cinerea</i>
		Redstart <i>Phoenicurus phoenicurus</i>

NNRs

- 1.3.1.5 Two NNRs with features relevant for breeding birds are within the study area. Details of these NNRs are provided in **Table 1.5**.

Table 1.5: NNRs within the study area with breeding features

NNR	Distance from Onshore Order Limits and Intertidal Infrastructure area (km)	Interest features
Ribble Estuary	0.68	<p>Lesser black-backed gull (season not specified).</p> <p>Saltmarsh - a seabird assemblage of international importance (season not specified).</p> <p>Saltmarsh - breeding birds Annex 1 species.</p> <p>Saltmarsh breeding birds of conservation concern and BAP species.</p> <p>Saltmarsh - nationally important breeding bird populations.</p>
Ainsdale Sand Dunes	15.6	Supralittoral sediment: Sand dune breeding birds.

LNRs

- 1.3.1.6 There are 17 LNRs within or partly within the study area. A list of the LNRs and their distance to the Onshore Order Limits and the Intertidal Infrastructure area is provided in **Table 1.6**.

Table 1.6: LNRs within, or partly within, the study area and their distance from the Transmission Assets Order Limits

LNR	Distance from Onshore Order Limits and Intertidal Infrastructure area (km)
Lytham St. Annes	Partly within the Onshore Order Limits and/or Intertidal Infrastructure area
Fishwick Bottoms	0.03
Longton Brickcroft	1.62
Haslam Park, Preston	2.02
Preston Junction	2.17
Marton Mere	3.78
Hills and Hollows	6.16
Grange Valley	6.63
Pope Land Open Space	7.39
Ainsdale and Birkdale Hills	10.88
Withnell Fold	10.96
Pleasington Old Hall Woods	13.50

LNR	Distance from Onshore Order Limits and Intertidal Infrastructure area (km)
Withnell Nature Reserve	13.54
Hic Bibi, Coppull	15.62
River Darwen Parkway	16.72
Sunnyhurst Woods	16.84
Arran Trail	19.19

BHS

1.3.1.7 There are 17 BHSs within, or partly within, the study area. A list of the BHSs and their distances to the Onshore Order Limits and the Intertidal Infrastructure area is provided in **Table 1.7**.

Table 1.7: BHSs within, or partly within, the study area and their distance from the Onshore Order Limits and/or Intertidal Infrastructure Area

BHS	Distance from Onshore Order Limits and Intertidal Infrastructure area (km)
Lytham Moss	Partly within the Onshore Order Limits and/or Intertidal Infrastructure area
River Ribble, Lower Tidal Section	Partly within the Onshore Order Limits and/or Intertidal Infrastructure area
Pippy Lane Banks	0.04
Willowmead Park Swap (Moss Side)	0.59
Lytham Moss Copses	0.72
Freckleton Naze	0.99
Lytham Hall Woods	0.99
LSCLA Lancaster Canal Whole Length in Lancashire Including Glasson Branch	1.49
Hesketh Old and New Marsh Fields	3.76
River Douglas Estuary	4.06
Marsh Farm Fields	5.37
Hesketh Old Marsh Embankment	5.57
Hesketh Bank Brickworks, North (Alty's)	6.30
Manor Farm Pastures	6.41
Martin Mere Mosslands	8.99
Halsall and Plex Mosses	16.10
King's Covert	16.52

1.3.2 Land use

- 1.3.2.1 In order to characterise land use with the survey area, the Corine Land Cover 2018 data set was downloaded and clipped to the survey area (Copernicus, 2020). The total area for each land use type was calculated in ArcGIS.
- 1.3.2.2 The survey area is characterised by predominantly pasture, which comprises over half of the survey area (54.3 %) (**Table 1.8, Figure 1.5**). Arable and urban are respectively the second (19.8 %) and third largest land use type (15.6 %) of the total land use type present within the survey area.
- 1.3.2.3 Estuarine, sport and leisure and sand dune represented only 5.2 % of the total land use type present. Blackpool Airport accounts for 4.5 % of the total land use type present within the survey area.

Table 1.8: The area and percentage of land use types present within the survey area

Land use type	Area of land use types (square kilometres (km ²))	Percentage of total land use type present (%)
Pasture	23.5	54.34
Arable	7.69	19.81
Urban	6.77	15.65
Airport	1.95	4.52
Sport and leisure	0.12	2.78
Sand dunes	0.60	1.39
Estuarine	0.47	1.10
Landfill	0.17	0.40
Total	41.27	N/A

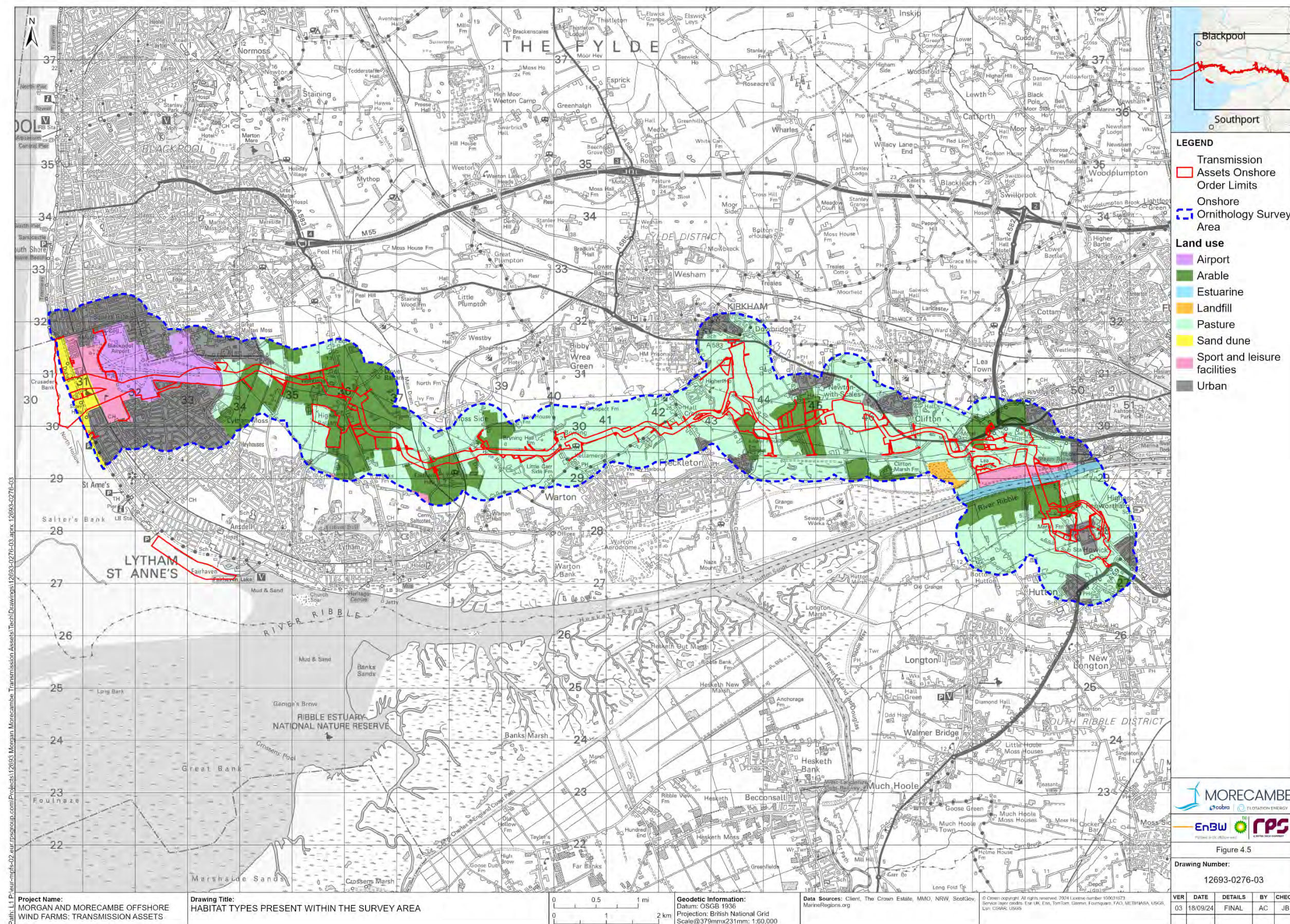


Figure 1.5: Land use within the onshore ornithology survey area

1.3.3 BTO records

BTO bird atlas 2007 to 2011

- 1.3.3.1 During the comprehensive survey (see **section 1.2.5.2**) 103 species were recorded during the breeding period within the 33 tetrads which overlap with the survey area. Of the 103 species, four are Annex 1 listed (avocet *Recurvirostra avosetta*, common tern, arctic tern *Sterna paradisaea* and kingfisher *Alcedo atthis*) and six are Schedule 1 listed (garganey *Anas querquedula*, quail *Coturnix*, avocet, little ringed plover *Charadrius dubius*, barn owl *Tyto alba* and kingfisher).
- 1.3.3.2 72 of the 103 species were recorded as 'confirmed breeders', whereas 18 are 'probable breeders' and 13 are 'possible breeders'. The definitions of breeding likelihood are set out below (BTO, no date).
- Confirmed breeders: distraction display or injury feigning observed, used nest or eggshells found, recently fledged young, adults entering or leaving nest-site indicating an occupied nest, adult carrying faecal sac or food for young, nest containing eggs or nest with young seen or heard.
 - Probable breeders: pair observed in suitable nesting habitat in the breeding season, permanent territory presumed through registration of territorial behaviour on at least two different days a week or more apart, courtship and display in or near potential breeding habitat, visiting a probable nest site, agitated behaviour or anxiety calls from adults, brood patch on adults examined in the hand, nest building or excavating nest-hole.
 - Possible breeders: species observed in breeding season in suitable habitat, singing male present in breeding season within suitable breeding habitat.
- 1.3.3.3 The BTO's report presents the 'site importance', which looks at the 10 km scale data and indicates if any species are present within the vicinity at more than 0.5 % of the UK's breeding population. The BTO data indicates that oystercatcher, avocet, black-tailed godwit *Limosa limosa* and dunlin all surpass this threshold. However, dunlin recorded in this location at this time of the year are thought to be migratory birds.

BTO bird data 2018 to 2022

- 1.3.3.4 During the BTO's Breeding Bird Survey and anecdotal evidence from the BTO's BirdTrack application, 64 species have been recorded within the 1 km squares which overlap the survey area. One Annex 1 species (golden plover) has been recorded within 1 km of the site, but no Schedule 1 species have been. However, within 2 km of the of the Onshore Order Limits and the Intertidal Infrastructure area, an additional 69 species have been recorded. Within these additional 69 species, there were 14 Annex 1 species and 19 Schedule 1 species.

1.3.4 Fylde Bird Club records

Summary of Fylde Bird Club data species records

- 1.3.4.1 A total of 203 species were recorded by Fylde Bird Club as present during the breeding season (March to July) during the last five years (2019 to 2023). However, whilst these records are of birds present during the breeding season, not all of these species will necessarily be breeding. The Fylde Bird Club data includes records of a number of seabird species recorded at the coast (e.g., puffin *Fratercula arctica*) which do not breed locally as no suitable breeding habitat is present, however, these birds may occasionally be seen flying over these coastal waters or resting offshore. The Fylde Bird Club data also includes a number of passage migrants, e.g., sanderling *Calidris alba*, which breed in the high arctic. The Fylde Bird Club data also includes records of vagrants, e.g., snow goose *Anser caerulescens* or Balearic shearwater *Puffinus mauretanicus*. The Fylde Bird Club data also includes records of species that may be escaped or deliberately released captive birds e.g., lanner falcon *Falco biarmicus* and Reeve's pheasant *Syrnaticus reevesii*. Species were categorised as potentially breeding or non-breeding with reference to the Bird Atlas (Balmer *et al.*, 2013).
- 1.3.4.2 A total of 118 of the 203 species recorded as present during the breeding season (March to July) from the Fylde Bird Club data records (2019 to 2023) have been categorised as potential breeding species. All 118 of these species are listed in **Table 1.9**. It is unlikely that all species characterised as potential breeding species breed within the survey area, some species may breed outside of the area, instead using the survey area for feeding only and some species may not breed within the survey area or surrounds at all.
- 1.3.4.3 Across the 118 species records, the most abundant taxonomic family group when looking at the sum of the five year mean of peak (rounded up to a whole number) were passerines (5,210 individuals) across 51 species, followed in order of abundance by: waders (4,487 individuals) across 12 species groups, geese, ducks and swans (1,420 individuals) across 15 species and gulls and terns (1,321) across seven species. An additional 1,110 individual birds were recorded across species from 13 other taxonomic groups including cuckoos, doves and pigeons, swallows, swifts and martins, herons, raptors, rails, crakes and coots, pheasants and partridges, grebes, owls, woodpeckers, parakeets, kingfishers and dippers.
- 1.3.4.4 A short summary of the species present and abundancies for each taxonomic family group is provided below.
- Geese, ducks and swans**
- 1.3.4.5 A total of 15 goose, duck and swan species were present within the survey area during the breeding season, which have been categorised as potential breeding species. Teal, Canada goose *Branta canadensis* and shelduck were the most abundant. Canada goose are a non-native species and were not considered for territory analysis.
- 1.3.4.6 Teal had a five year mean of peak of 378 compared to 314 for shelduck. The five-year peak for teal and shelduck were 473 and 481 respectively.

- 1.3.4.7 The next most abundant species were mallard when looking at the five year mean of peak. When assessing the five year peak, eider *Somateria mollissima* were more abundant than mallard. The five year mean of peak for mallard was 110, compared to 108 for eider. The five year peak for mallard was 168 compared to 224 for eider.

Pheasants and partridges

- 1.3.4.8 A total of four pheasant and partridge species which have been categorised as potentially breeding were present within the survey area during the breeding season: grey partridge *Perdix perdix*, pheasant *Phasianus colchicus*, red-legged partridge *Alectoris rufa* and quail.
- 1.3.4.9 Quail were recorded in two of the most recent five years, 2019 and 2021. All other pheasant and partridge species were recorded in all five years. The most abundant of these species were grey partridge with five year mean of peak of five, and pheasant with five. It is likely that not all observations of pheasant were recorded.

Cuckoos, doves and pigeons

- 1.3.4.10 Five species from the cuckoo, dove and pigeon groups that were categorised as potentially breeding were recorded within the survey area: cuckoo *Cumulus canorus*, woodpigeon *Columba palumbus*, stock dove *Columba oenas*, feral pigeon *Columba livia domestica* and collared dove *Streptopelia decaocto*. All four species were recorded in each of the five most recent years.
- 1.3.4.11 It should be noted that it is likely not all observations of species within this group were recorded. Annual recordings show a large degree of variation year on year.
- 1.3.4.12 The most abundant of these species were woodpigeon with a five year mean of peak of 304, followed by feral pigeon (100), stock dove (66) and collared dove (17).
- 1.3.4.13 Cuckoo were noted in all five years, with a five year mean of peak of two and a five-year peak of three.

Rails, crakes and coots

- 1.3.4.14 Three rail, crake and coot species were present within the survey area during the breeding season, which have been categorised as potential breeding species: coot, moorhen and water rail *Rallus aquaticus*.
- 1.3.4.15 The most abundant of these species were moorhen with a five year mean of peak of 15.
- 1.3.4.16 Coot were more abundant than water rail with a five year mean of peak of 12 compared to one for water rail.
- 1.3.4.17 Moorhen and coot were recorded in all five years while water rail were not recorded in 2022 but were noted in the other four years.

Grebes

- 1.3.4.18 A total of two grebe species were present within the survey area during the breeding season, which have been categorised as potential breeding species: great crested grebe and little grebe.
- 1.3.4.19 Great crested grebe were the more abundant of the two species, with a five year mean of peak of 10 compared to one for little grebe.
- 1.3.4.20 Little grebe were recorded in three of the most recent five years while great crested grebe were recorded in all five years.

Waders

- 1.3.4.21 A total of 12 wader species which have been categorised as potentially breeding were present within the study area during the breeding season.
- 1.3.4.22 When looking at the five-year mean of peak the most abundant species were black-tailed godwit. There is a known small population of the continental race of black-tailed godwit breeding in the survey area (at Newton Marsh). The five year mean of peak of 1,536 far exceeds the UK breeding population, so it is therefore likely that the majority of these birds are the non-breeding passage *Limosa limosa islandica* sub-species that breed in Iceland. The next most abundant species are dunlin and lapwing with five year mean of peaks of 1,393 and 584 respectively.
- 1.3.4.23 When looking at the five year peak between 2019 and 2023, the most abundant species were dunlin, as dunlin are extremely unlikely to breed locally (or at the very least in low numbers on the saltmarsh), these birds are most likely composed of *Calidris alpina alpina* sub-species or *Calidris alpina schinzii* on their way to breeding grounds further north, followed by black-tailed godwit and redshank. Indeed, it is likely that many of the individual birds from all three species were migratory birds on stopovers.

Gulls and terns

- 1.3.4.24 A total of eight gull and tern species were recorded as present within the survey area during the breeding season and which have been categorised as potential breeding species: black headed gull, herring gull, lesser black-backed gull, arctic tern, common tern, great black-backed gull *Larus marinus* and Mediterranean gull.
- 1.3.4.25 The most abundant of these species were black-headed gull with a five year mean of peak of 433. It was noted that recent years have shown an increase in black-headed gull numbers when looking at breeding season peaks with numbers increasing annually from 261 in 2019 to 772 in 2023.
- 1.3.4.26 Black-headed gull were followed by herring gull and then arctic tern as the most abundant species with a five year mean of peak of 333 and 202 respectively.
- 1.3.4.27 All six species were recorded in each of the five most recent years.
- 1.3.4.28 It is noted that common tern numbers have shown an annual decrease in numbers from 321 in 2019 to 75 in 2023.

Herons and storks

- 1.3.4.29 There were two heron species recorded as present within the survey area during the breeding season, which have been categorised as potential breeding species: little egret *Egretta garzetta*, and grey heron.
- 1.3.4.30 Little egret were the most abundant with a five year mean of peak of 91, the equivalent peak value for grey heron was 19.

Kingfishers and dippers

- 1.3.4.31 Small numbers of kingfisher and dipper, categorised as potential breeding species, were present within the survey area during the breeding season within the five most recent years of data.
- 1.3.4.32 Dipper were only recorded in one of the five most recent years, in 2022 where two individuals were noted.
- 1.3.4.33 Kingfisher were recorded in four of the five most recent years and had both a five year mean of peak of one and a sum of five year peak of two.

Raptors

- 1.3.4.34 A total of six potentially breeding raptor species were present within the survey area during the breeding season. This included common buzzard, kestrel, sparrowhawk, peregrine, marsh harrier *Circus aeruginosus* and hen harrier, although it is extremely unlikely that hen harrier breed in the area.
- 1.3.4.35 The most abundant of these species was common buzzard with a five year mean peak of 24, this is followed by kestrel with a five year mean of peak of 11.
- 1.3.4.36 All six species were recorded in each of the five most recent years on at least one occasion.

Owls

- 1.3.4.37 A total of four owl species were present within the study area during the breeding season, which have been categorised as potential breeding species: barn owl, little owl *Athene noctua*, tawny owl and short-eared owl.
- 1.3.4.38 The most abundant species were barn owl, with a five year mean of peak of three, followed by little owl with two.
- 1.3.4.39 Short-eared owl were only present in three of the five most recent years and are most likely composed of passage birds moving to/from their breeding sites. Tawny owl were present in four of the five years with barn owl and little owl present in all years.

Woodpeckers

- 1.3.4.40 One species of woodpecker deemed as a potential breeding species was recorded within the survey area: great spotted woodpecker.
- 1.3.4.41 The five year peak was seven and the five year mean of peak for this species was five. The species was present in each of the five years.

Parakeets

- 1.3.4.42 Ring-necked parakeet *Psittacula krameria* were recorded and categorised as likely to be breeding within the survey area. The five year mean of peak for this species was one This species was recorded in three of the five years.

Swifts

- 1.3.4.43 Swift *Apus* were recorded and categorised as likely to be breeding within the survey area, the species was recorded in each of the five years.
- 1.3.4.44 The five year mean of peak for this species was 99.

Swallows and martins

- 1.3.4.45 Three species of swallow and martin were recorded and categorised as likely to be breeding within the survey area: house martin *Delichon urbicum*, sand martin *Riparia riparia*, swallow *Hirundo rustica*
- 1.3.4.46 Annual breeding season peak counts for all three species show a large degree of variation. Therefore, it is possible that not all observations of these species were recorded in each year.
- 1.3.4.47 When considering the five year mean of peak for these species the most abundant were swallow (159), sand martin (69) and then house martin (62).

Passerines

- 1.3.4.48 A total of 50 passerine species, which have been categorised as potentially breeding, were present within the survey area during the breeding season.
- 1.3.4.49 In considering the abundance of passerine species, consideration was given to the five year peak rather than the five year mean of peak. This was due to the likelihood that not all observations of the more common species were made in each year.
- 1.3.4.50 The most abundant species were starling *Sturnus vulgaris*, linnet *Linaria cannabina*, meadow pipit and rook *Corvus frugilegus*.
- 1.3.4.51 Broad assemblages of farmland species were present, including: skylark, corn bunting and reed bunting.
- 1.3.4.52 Broad assemblages of woodland species were present and included common summer migrant warblers: common whitethroat *Curruca communis* and blackcap, as well as also less abundant migrants including black redstart *Phoenicurus ochruros*.

Summary of Fylde Bird Club data Schedule 1, Annex 1 and Section 41 listed species

- 1.3.4.53 A total of 12 Annex 1 listed species deemed as having potential to breed were recorded within tetrads overlapping with the survey area: arctic tern, avocet, barnacle goose *Branta leucopsis*, common tern, hen harrier, kingfisher, little egret, marsh harrier, Mediterranean gull, peregrine, ruff and short-eared owl.

- 1.3.4.54 A total of 13 Schedule 1 listed species deemed as having potential to breed were recorded within tetrads overlapping with the survey area: avocet, barn owl, black redstart, black-tailed godwit, garganey, hen harrier, kingfisher, little ringed plover, marsh harrier, Mediterranean gull, peregrine, quail and ruff.
- 1.3.4.55 A total of 22 Section 41 listed species deemed as having potential to breed were recorded within tetrads overlapping with the survey area: black-tailed godwit, bullfinch *Pyrrhula*, corn bunting, cuckoo, curlew, dunnock *Prunella modularis*, grasshopper warbler *Locustella naevia*, grey partridge, hen harrier, herring gull, house sparrow *Passer domesticus*, lapwing, lesser redpoll *Acanthis cabaret*, linnet, reed bunting, skylark, song thrush *Turdus philomelos*, spotted flycatcher, starling, tree sparrow *Passer montanus*, yellow wagtail and yellowhammer *Emberiza citrinella*.

Table 1.9: Five-year peak count of the Fylde Bird Club ornithological individual species records (2019 to 2023) recorded during the breeding season months (March to July)

Taxonomic group	Species	Minimum 5-year peak (2019 to 2023)	Maximum 5-year peak (2019 to 2023)	5-year mean of peak (2019 to 2023)
Geese, ducks and swans	Canada goose	97	889	368
	Barnacle goose	0	11	4
	Greylag goose	8	63	35
	Mute swan	5	33	20
	Shelduck	109	481	314
	Mandarin <i>Aix galericulata</i>	0	1	0
	Garganey	0	2	1
	Shoveler	29	52	41
	Gadwall	10	42	25
	Mallard	48	168	110
	Teal	314	473	378
	Pochard	0	1	0
	Tufted duck	1	4	3
	Eider	42	224	108
	Goosander <i>Mergus merganser</i>	2	25	12
Pheasants and partridges	Grey partridge	2	8	5
	Pheasant	2	9	5
	Quail	0	2	1
	Red-legged partridge	2	4	3

Taxonomic group	Species	Minimum 5-year peak (2019 to 2023)	Maximum 5-year peak (2019 to 2023)	5-year mean of peak (2019 to 2023)
Cuckoos, doves and pigeons	Cuckoo	1	3	2
	Feral pigeon	61	209	100
	Stock dove	20	114	66
	Woodpigeon	90	586	304
	Collared dove	6	28	17
Rails, crakes and coots	Moorhen	12	19	15
	Coot	8	22	12
	Water rail	0	2	1
Grebes	Great crested grebe	8	13	10
	Little grebe	0	2	1
Waders	Oystercatcher	43	349	166
	Avocet	69	176	106
	Lapwing	250	1,003	584
	Ringed plover	3	59	36
	Little ringed plover	5	9	8
	Curlew	44	156	104
	Black-tailed godwit	656	3,018	1536
	Ruff	2	16	7
	Dunlin	318	3,305	1393
	Snipe	6	112	34
	Common sandpiper	18	96	41
	Redshank	101	1,336	471
Gulls and terns	Black-headed gull	261	772	433
	Mediterranean gull	4	8	6
	Great black-backed gull	13	35	25
	Herring gull	230	488	333
	Lesser black-backed gull	90	238	168
	Common tern	75	321	156
	Arctic tern	89	355	202
Hérons and storks	Little egret	65	156	91
	Grey heron	11	26	19

Taxonomic group	Species	Minimum 5-year peak (2019 to 2023)	Maximum 5-year peak (2019 to 2023)	5-year mean of peak (2019 to 2023)
Raptors	Sparrowhawk	4	13	8
	Marsh harrier	2	4	3
	Buzzard	15	43	24
	Hen harrier	1	4	2
	Kestrel	7	16	11
	Peregrine	3	7	5
Owls	Barn owl	2	5	3
	Little owl	1	3	2
	Short-eared owl	0	2	1
	Tawny owl	0	3	1
Woodpeckers	Great spotted woodpecker	3	7	5
Kingfishers and dippers	Kingfisher	0	2	1
	Dipper	0	2	0
Parakeets	Ring-necked parakeet	0	2	1
Swifts	Swift	68	133	99
Swallows and martins	Sand martin	20	139	69
	Swallow	118	231	159
	House martin	27	114	62
Passerines	Jay <i>Garrulus glandarius</i>	4	14	9
	Magpie <i>Pica</i>	20	39	32
	Jackdaw <i>Coloeus monedula</i>	22	128	54
	Rook	183	866	614
	Carrion crow <i>Corvus corone</i>	29	91	62
	Raven	9	20	13
	Coal tit <i>Periparus ater</i>	3	13	6
	Blue tit <i>Cyanistes caeruleus</i>	14	52	25
	Great tit <i>Parus major</i>	11	49	24
	Skylark	31	68	49
	Cetti's warbler <i>Cettia cetti</i>	0	5	2
	Long-tailed tit <i>Aegithalos caudatus</i>	18	37	26
	Willow warbler <i>Phylloscopus trochilus</i>	7	43	20

Taxonomic group	Species	Minimum 5-year peak (2019 to 2023)	Maximum 5-year peak (2019 to 2023)	5-year mean of peak (2019 to 2023)
	Chiffchaff	29	44	36
	Sedge warbler <i>Acrocephalus schoenobaenus</i>	8	26	18
	Reed warbler <i>Acrocephalus scirpaceus</i>	1	4	3
	Grasshopper warbler	2	6	4
	Blackcap	14	39	28
	Garden warbler <i>Sylvia borin</i>	0	2	1
	Lesser whitethroat <i>Curruca curruca</i>	6	15	11
	Whitethroat	20	37	29
	Goldcrest <i>Regulus</i>	3	12	8
	Wren <i>Troglodytes</i>	15	36	23
	Nuthatch <i>Sitta europaea</i>	3	6	5
	Treecreeper <i>Certhia familiaris</i>	1	5	2
	Starling	271	5,016	2676
	Song thrush	8	20	11
	Mistle thrush <i>Turdus viscivorus</i>	6	11	9
	Blackbird <i>Turdus merula</i>	20	58	38
	Spotted Flycatcher	0	3	1
	Robin <i>Erithacus rubecula</i>	11	48	25
	Black redstart	0	2	0
	Stonechat	3	18	11
	Tree sparrow	12	23	18
	House sparrow	19	69	46
	Dunnock	4	35	15
	Yellow wagtail	2	9	5
	Grey wagtail	2	8	6
	Pied wagtail <i>Motacilla alba</i>	12	110	57
	Meadow pipit	262	1,112	657
	Chaffinch <i>Fringilla coelebs</i>	7	40	25
	Bullfinch	3	8	5
	Greenfinch <i>Chloris chloris</i>	18	45	29

Taxonomic group	Species	Minimum 5-year peak (2019 to 2023)	Maximum 5-year peak (2019 to 2023)	5-year mean of peak (2019 to 2023)
	Linnet	19	1,360	318
	Lesser redpoll	1	16	7
	Goldfinch <i>Carduelis</i>	52	137	78
	Siskin <i>Spinus</i>	3	19	9
	Corn bunting	7	42	21
	Yellowhammer	1	4	3
	Reed bunting	3	78	36

1.3.5 The Queensway development records

- 1.3.5.1 Breeding bird surveys were conducted in 2021 by The Environment Partnership Ltd who were commissioned to inform the planning application for the Queensway development. The project is a large, phased residential development located adjacent to Heyhouses Lane (B5261). The surveys covered an area of agricultural land within Lytham Moss (Jenkins, 2021).
- 1.3.5.2 The Queensway development breeding bird surveys covered a small portion of the survey area of approximately 3.5 km², the extent of which is shown in **Figure 1.6**.
- 1.3.5.3 Three surveys were conducted between May 2021 and July 2021, along a predetermined transect which covered the Nature Park and Farmland Conservation Area and undertaken adopting a modified Common Bird Census breeding bird survey technique.
- 1.3.5.4 The Queensway development breeding bird surveys targeted nine breeding farmland species listed within the Queensway Farmland Conservation Area Management Plan which were: barn owl, corn bunting, grasshopper warbler, grey partridge, lapwing, linnet, reed bunting, skylark and tree sparrow.
- 1.3.5.5 A total of 51 bird species were recorded during the 2021 breeding bird survey across all visits, including ten species confirmed as breeding within the Farmland Conservation Area and Nature Park. Results of the survey concluded that the site was of local importance for breeding birds due to the number of UK red or amber-listed birds in the BOCC5 UK (Stanbury *et al.*, 2021), including lapwing and meadow pipit. A further 20 species were assessed as probable breeders of which seven are also either red or amber listed in the BOCC5 UK: dunnoek, kestrel, linnet, mallard, reed bunting, skylark and song thrush.

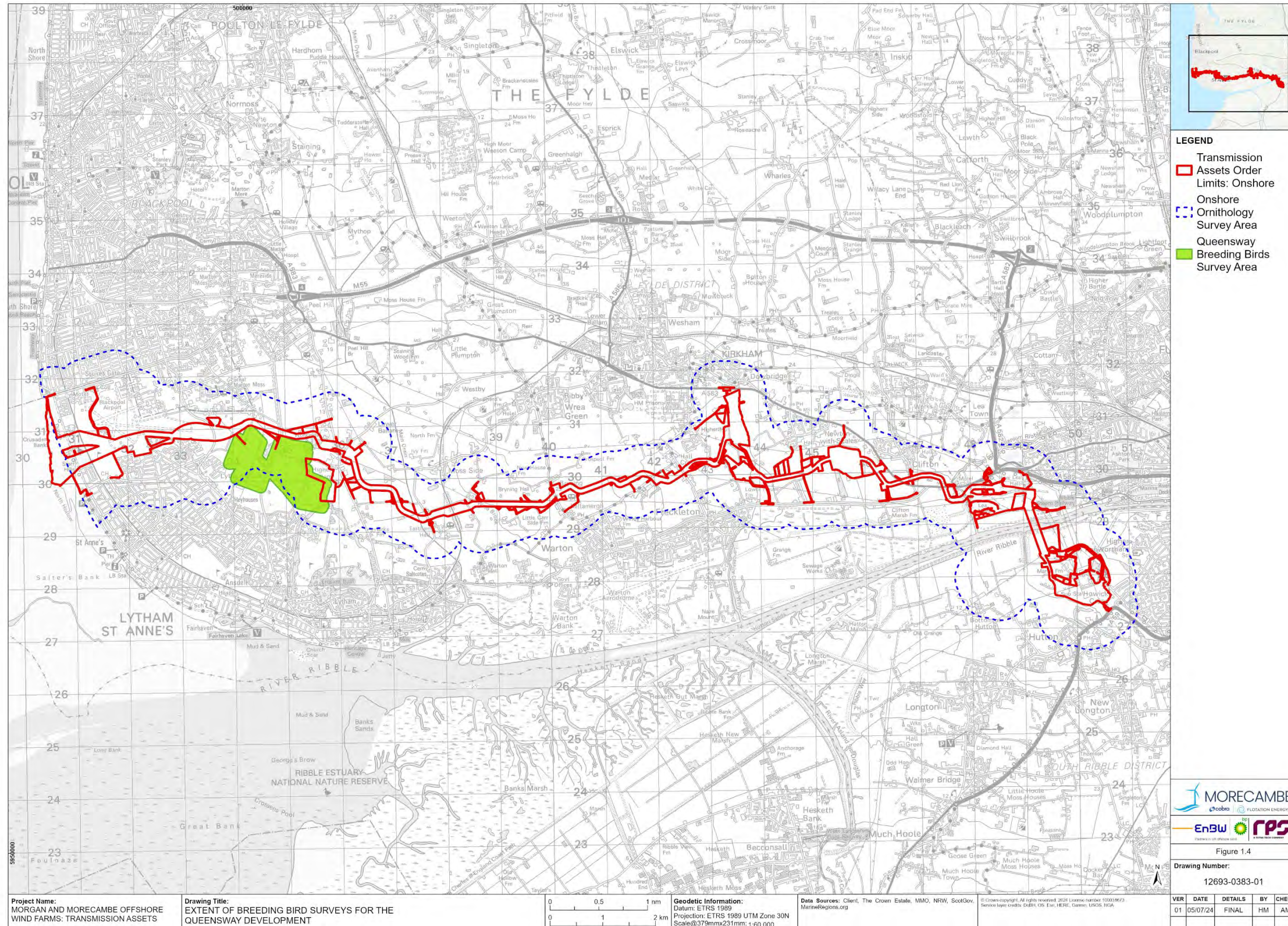


Figure 1.6: Extent of breeding bird surveys for the Queensway development

1.4 Site-specific surveys – baseline characterisation

1.4.1 Survey methodology

1.4.1.1 A total of nine site specific surveys were completed within the survey area between April 2022 and July 2022 and between March 2023 and July 2023. These surveys aimed to characterise the spatial and temporal assemblage of ornithological receptors and to afford the subsequent mapping of breeding territories.

Survey schedule

- 1.4.1.2 Four breeding bird surveys were undertaken during the 2022 breeding season between April 2022 and July 2022 (**Table 1.10**). Five breeding bird surveys were undertaken during the 2023 breeding season between March 2023 and July 2023. Surveys were completed once per month over several visits.
- 1.4.1.3 Each monthly survey comprised of multiple days (approx. 15 days per survey visit) of surveys to achieve coverage of the survey area.
- 1.4.1.4 Surveys were completed from a combination of Public Right of Way (PRoW) and private land access where access permissions were granted. Survey coverage is presented within **Figure 1.7** and further detail is provided within Volume 3, Annex 4.4: Onshore and intertidal ornithology survey methodologies.
- 1.4.1.5 All surveys were undertaken in favourable weather conditions, avoiding heavy rain and strong winds (Beaufort force >5), commenced within half an hour of sunrise and concluded by around mid-morning.

Table 1.10: Breeding bird survey dates

Visit	Dates between which each monthly survey was undertaken
2022 breeding season	
1	Undertaken between 18 April and 26 April
2	Undertaken between 10 May and 13 May
3	Undertaken between 20 June and 24 June
4	Undertaken between 11 July and 15 July
2023 breeding season	
1	Undertaken between 16 and 24 March
2	Undertaken between 04 and 28 April
3	Undertaken between 08 and 16 May
4	Undertaken between 05 and 12 June
5	Undertaken between 20 and 30 July

Spatial site-specific survey coverage

- 1.4.1.6 Site-specific survey coverage of the survey area was achieved using a combination of access from both PRoW and privately owned land parcels. Where access to privately owned land parcels was granted, surveyors walked as close to 100 m from all areas of habitat as possible. Where PRoW were used, nine monthly visits (transects) were completed, this can be seen in **Figure 1.7**. For the privately owned access parcels, the number of visits was dependent upon landowner requests which had to be made on a visit-by-visit basis.
- 1.4.1.7 Spatial coverage of the 2022 and 2023 surveys is shown in **Figure 1.7**. The combined coverage of the Survey Area across both years of data collection was 71.51 % (excluding urban areas and Blackpool Airport). This equates to 75.23 % of the Onshore Order Limits and the Intertidal Infrastructure area (excluding urban areas and Blackpool Airport) (see Table 2.3 in Volume 3, Annex 4.4: Onshore and intertidal ornithology survey methodologies). It must be noted that Blackpool Airport was not surveyed. As the airport is subject to an Airport Bird Hazard Management, the bird assemblage is not expected to be characteristic of the habitats present.

Survey technique

- 1.4.1.8 Surveys used a simple 'look and see' method whereby birds were detected and mapped using visual and aural cues. The survey method is based on a modified Common Bird Census survey method (Marchant et al., 1983; Gilbert et al. 1998; Bibby et al. 2000) and involves walking as close to all areas of habitat as possible in order to detect birds. A detailed methodology is provided in Volume 3, Annex 4.4: Onshore and intertidal ornithology survey methodologies (document reference F3.4.4).
- 1.4.1.9 For each survey the position of each bird was plotted onto a field map (using mobile data capture) and details of behaviour indicative of breeding, such as singing males, or birds carrying food were noted, using standard BTO behaviour notation. Results were then transferred onto Geographic Information System software and mapping from which territory analysis was completed.
- 1.4.1.10 A detailed survey methodology can be found in Volume 3, Annex 4.4: Onshore and intertidal ornithology survey methodologies (document reference F3.4.4).

Territory mapping

- 1.4.1.11 These data were analysed, and territories were assigned following the identification of clusters of registrations of birds of the same species displaying breeding characteristics (e.g., singing, alarm calling, nest building, mating) in the same general area over successive survey visits. A breeding territory is normally defined as at least two registrations conforming to breeding behaviour evidence recorded on separate survey visits. However, where fewer visits were carried out (i.e., on parcels of land where regular

access could not be arranged), one registration of breeding behaviour was regarded as the minimum to ascertain possible breeding.

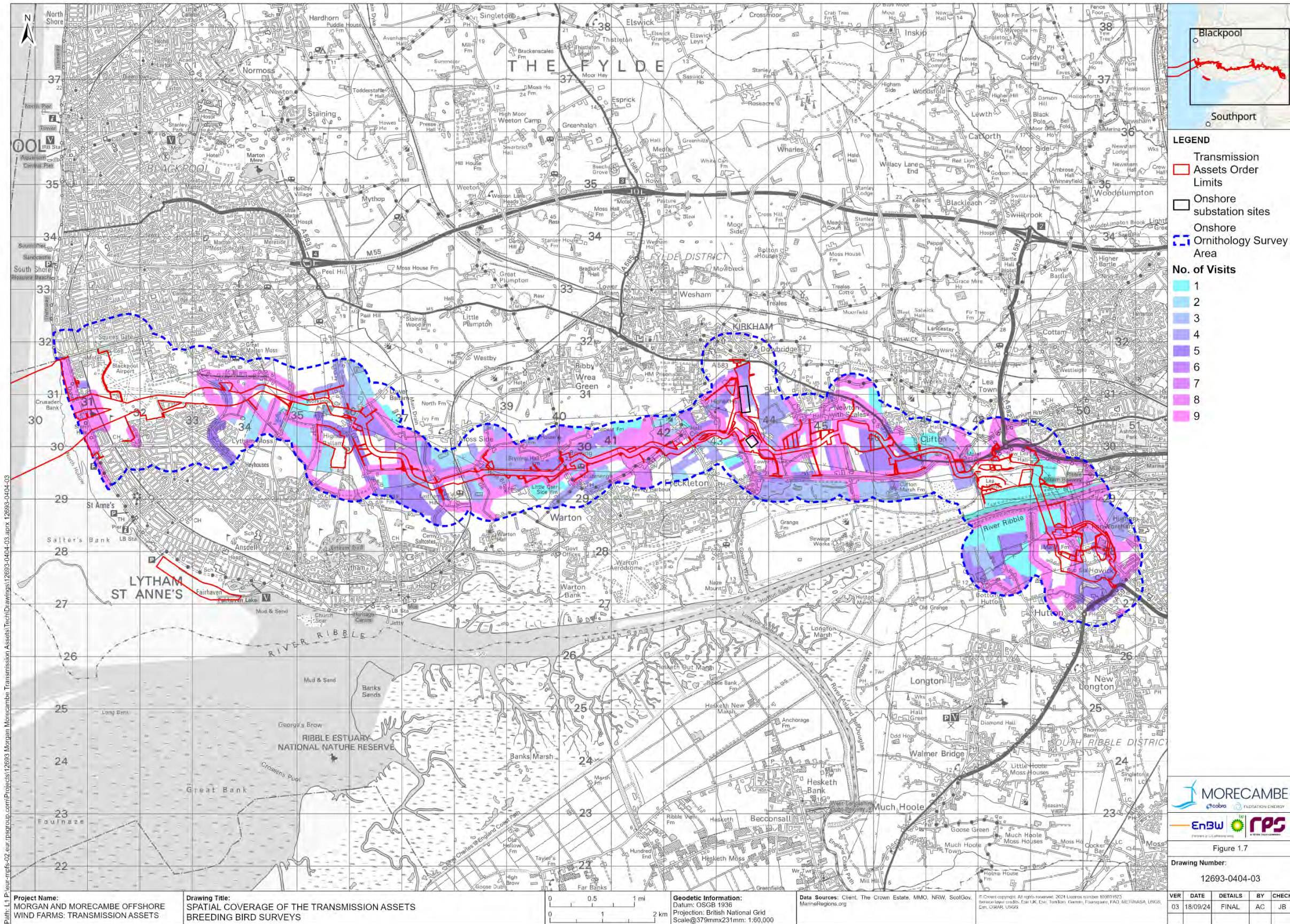


Figure 1.7: Coverage of the Transmission Assets breeding bird surveys

Species recorded

- 1.4.1.12 During the 2022 surveys, only species which are of conservation importance and belonging to one of the following criteria were recorded.
- A species listed within EU Birds Directive Annex 1.
 - A species listed within Schedule 1 of the Wildlife and Countryside Act 1981.
 - A Section 41 species of the Natural Environment and Rural Communities Act 2006.
 - A qualifying interest of a SPA or SSSI within the study area.
 - A red or amber-listed species in the BOCC5 UK (Stanbury *et al.*, 2021).
- 1.4.1.13 To focus field survey efforts and subsequent territory mapping on species of conservation importance, as described above, species of relatively low conservation concern and therefore not covered by the above criteria were not recorded, e.g., blackbird and robin.
- 1.4.1.14 Whilst only species of conservation concern were recorded in 2022, all species regardless of their conservation status or protection were recorded in 2023. This was to account for the possibility of the conservation status changing in future (i.e., birds updated to higher conservation status).

1.4.2 Territory mapping results

Species summary

- 1.4.2.1 During the 2022 breeding season, a total of 40 species were found likely to be holding territory or displaying territorial behaviour within the survey area. A wide range of species were recorded and identified as likely to be breeding, including three species of ducks, three species of waders, two owl species, two raptor species and 25 passerine species comprised of species associated with farmland, scrub and woodland habitats.
- 1.4.2.2 Species from five other taxonomic groups were also identified during the 2022 breeding season, these were doves and pigeons, herons, partridges, swifts, swallows and martins.
- 1.4.2.3 During the breeding bird surveys completed in 2023, a total of 66 species were found to be holding territory or displaying territorial behaviour within the survey area. A wide range of species was recorded and identified as potentially holding breeding territories within the survey area, including six species from the geese, ducks and swans group, six species of waders, three owl species, three raptor species and 43 passerine species comprising of species associated with farmland, scrub and woodland habitats.
- 1.4.2.4 Species from eight other taxonomic groups were also identified during the 2023 breeding season, these were doves and pigeons, herons, kingfishers, partridges, rails, swifts, swallows and martins, and woodpeckers.
- 1.4.2.5 Combining the results of the breeding bird surveys conducted across both of the 2022 and 2023 breeding seasons, a total of 72 species were identified as

likely to be holding breeding territories within the survey area. A list of these species is presented in taxonomic order and then sorted by abundance within the taxonomic group (**Table 1.11**). The distribution of the identified territories following both the 2022 and 2023 breeding seasons can be seen in **Figure 1.8** to **Figure 1.79**.

- 1.4.2.6 Peak monthly counts of individuals can be found in **Table 1.12** and **Table 1.13** in **Appendix A**. Although not all of these birds were identified as possibly breeding within the onshore survey area (e.g., flocks of gulls and waders), and these numbers do not reflect the territories that were assigned, these raw count data have been used to inform Volume 4. Chapter 3: Onshore and Intertidal Ornithology of the Environmental Statement (document reference: F3.4.3) and the Habitats Regulations Assessment Stage 2 Information to Support an Appropriate Assessment – Part 3: Special Protection Areas and Ramsar site assessments (document reference E2.3C), so are provided here for transparency.

Schedule 1 and Annex 1 listed species

- 1.4.2.7 Barn owl were the only likely breeding species present within the survey area during the 2022 breeding bird surveys listed in Schedule 1 of the Wildlife and Countryside Act 1981, which makes it illegal ‘to intentionally or recklessly disturb these species at, or near an active nest’. A total of two breeding territories were identified for barn owl (**Figure 1.31**).
- 1.4.2.8 Little egret were the only likely breeding species present during the 2022 breeding bird surveys which is listed as an Annex 1 species of the Birds Directive. A single breeding territory was identified for little egret in 2022 (**Figure 1.26**).
- 1.4.2.9 During the 2023 breeding bird surveys, two Annex 1 listed species were identified as likely to be holding breeding territories. These were avocet and kingfisher. A total of five avocet breeding territories were noted (**Figure 1.19**), all located within Newton Marsh. Two kingfisher territories were noted (**Figure 1.27**). Both kingfisher and avocet are also listed as Schedule 1 species.
- 1.4.2.10 Six Schedule 1 species were also identified as likely to be breeding within the survey area following the 2023 breeding surveys. These were avocet (**Figure 1.19**), barn owl, black-tailed godwit (**Figure 1.23**), little ringed plover (**Figure 1.21**), kingfisher (**Figure 1.27**) and Cetti’s warbler (**Figure 1.44**).
- 1.4.2.11 A total of five breeding territories were identified for barn owl. Two of these breeding territories were noted to be in the same location as those recorded in 2022, one to the south and one to the north of Bryning Hall Lane. One territory is located to the south of the River Ribble, within farmland to the east of Howick Cross Lane. The two remaining territories are both north of the Ribble, one on farmland to the west of Kirkham Road and to the north of Freckleton, the other within the Farmland Conservation Area at Lytham Moss, to the west of Moss Hall Lane.
- 1.4.2.12 There were five territories identified for avocet, and one territory each identified for little ringed plover and black-tailed godwit, these territories were all located within Newton Marsh SSSI which is partially included in the survey

area but well outside of the Onshore Infrastructure Area. The little ringed plover site was a confirmed breeding location. Breeding bird surveys of the area did not provide conclusive evidence of black-tailed godwit successfully breeding, however, there were reported sightings of eggs and young black-tailed godwit in 2022 and 2023.

Section 41 species

- 1.4.2.13 A total of 16 species recorded during the 2022 surveys are listed under Section 41 of the Natural Environment and Rural Communities Act 2006, which lists priority species considered to be principal importance for the purpose of conserving biodiversity in England.
- 1.4.2.14 Section 41 species recorded during the surveys included two species of wader: curlew (**Figure 1.22**) and lapwing (**Figure 1.20**), seven farmland species: skylark (**Figure 1.43**), reed bunting (**Figure 1.79**), linnet (**Figure 1.75**), yellowhammer (**Figure 1.78**), corn bunting (**Figure 1.77**), yellow wagtail (**Figure 1.68**) and grey partridge (**Figure 1.14**). A further seven species more commonly associated with woodland, hedgerow or urban habitats were recorded: starling (**Figure 1.57**), song thrush (**Figure 1.58**), tree sparrow (**Figure 1.65**), house sparrow (**Figure 1.66**), grasshopper warbler (**Figure 1.50**), dunnoek (**Figure 1.67**) and bullfinch (**Figure 1.73**) were also recorded.
- 1.4.2.15 During the 2023 breeding bird surveys, a total of 15 species listed under Section 41 were recorded as likely to be breeding within the survey area. This included two wader species, lapwing and black-tailed godwit, six farmland species: corn bunting, grey partridge, linnet, reed bunting, skylark and yellowhammer. A further seven species more commonly associated with woodland, hedgerow or urban habitats were recorded: starling, song thrush, tree sparrow, house sparrow, grasshopper warbler, dunnoek and bullfinch were also recorded.

BOCC5 UK red and amber listed species

- 1.4.2.16 A total of 16 species identified within the survey area were found to be red listed in the BOCC5 UK following the 2022 breeding bird surveys. The most abundant were starling with 89 likely breeding territories identified and skylark with 54 likely breeding territories identified.
- 1.4.2.17 A total of 21 species are found to be amber listed in the BOCC5 UK following the 2022 breeding bird surveys. The most abundant were common whitethroat (**Figure 1.53**) with 39 likely breeding territories identified and mallard (**Figure 1.12**) with 36 likely breeding territories identified.
- 1.4.2.18 A total of 14 species identified within the survey area during the 2023 breeding bird surveys were red listed in the BOCC5 UK. The most abundant of these species were skylark with 74 likely breeding territories and lapwing with 33 likely breeding territories.
- 1.4.2.19 A total of 23 species identified within the survey area during the 2023 breeding bird surveys were amber listed in the BOCC5 UK. The most

abundant of these species were song thrush with 57 likely breeding territories and sedge warbler (**Figure 1.48**) with 55 likely breeding territories.

Summary of species abundance and distribution by taxonomic group

Geese, ducks and swans

2022

- 1.4.2.20 Three duck species were identified as likely to be holding breeding territories within the survey area: mallard, shelduck (**Figure 1.9**) and teal (**Figure 1.13**). No goose or swan species were identified as having breeding territories.
- 1.4.2.21 For duck species, mallard held the highest number of breeding territories, with a total of 36 breeding territories identified. Mallard breeding territories were identified throughout the survey area in areas of pasture, with a concentration of territories approximately 1 km north of Warton.
- 1.4.2.22 Shelduck breeding territories, of which 23 were identified, were predominantly identified in two areas. Eight shelduck breeding territories were located along the River Ribble at the east of the survey area and a further nine territories in a more central area of the survey area, approximately within a 1 km area north east of Freckleton. The remaining breeding territories for shelduck were found more widely distributed through the west of the survey area.
- 1.4.2.23 A single breeding territory of teal was identified within the survey area to the east of the Onshore Order Limits and the Intertidal Infrastructure area along the River Ribble.

2023

- 1.4.2.24 A total of six species from the geese, ducks and swans group were identified as holding likely breeding territories within the survey area: Canada goose (**Figure 1.8**), gadwall (**Figure 1.11**), mallard, shelduck, shoveler (**Figure 1.10**) and teal.
- 1.4.2.25 Canada goose were identified as likely to be holding seven breeding territories. Canada goose are an introduced species, also known as an exotic species, i.e., a species that has been moved intentionally or unintentionally by humans into a new geographic location where it is not naturally found.
- 1.4.2.26 Of the probable breeding duck species, shelduck were the most abundant in 2023 with a total of 14 territories. These territories were primarily located north of the River Ribble, with only one territory located to the south of the river, approximately 185 m east of Skip Lane on farmland. Those territories to the north of the River Ribble were distributed along the route from an area to the south of Peg's Lane to the wet fields located between the A583 and the A584.
- 1.4.2.27 Mallard were the second most abundant duck species with seven identified territories. These territories were mainly located in two locations, in fields used as pasture to the north of Hillock Lane and within the wetland at Newton Marsh, to the south of the A584.

- 1.4.2.28 A total of four shoveler territories were identified. All four of these territories were located within Newton Marsh SSSI which is to the south of the Onshore Infrastructure Area.
- 1.4.2.29 One teal and one gadwall territory were also recorded in 2023. Both of these territories were also situated within Newton Marsh SSSI.

Waders

2022

- 1.4.2.30 Lapwing, oystercatcher (**Figure 1.18**) and curlew were identified as having breeding territories within the survey area.
- 1.4.2.31 Lapwing were the most abundant wader species with 25 breeding territories identified, which were relatively widely distributed throughout the survey area in areas of pasture, albeit there were concentrations approximately 1 km north east of Lytham St. Annes and also south of the River Ribble, north of Howick Cross.
- 1.4.2.32 A total of 14 oystercatcher breeding territories were identified, which were similarly distributed to lapwing and the greatest concentration of territories again found just south of the River Ribble, north of Howick Cross.
- 1.4.2.33 Two curlew breeding territories were identified which were located within a few hundred metres of each other in areas of pasture approximately 300 m south of the village of Bryning in the central part of the survey area. In reality these birds were likely to have been passage birds, but as the area only had one visit, and based upon anecdotal evidence from a local, these territories were assigned on a precautionary basis.

2023

- 1.4.2.34 Six species of wader were identified as likely to be breeding within the survey area following the 2023 breeding bird surveys. These were avocet, black-tailed godwit, lapwing, little ringed plover, oystercatcher and redshank (**Figure 1.24**).
- 1.4.2.35 The most numerous of these species were lapwing, with a total of 33 territories identified. These territories are distributed across the survey area with concentrations of territories at Newton Marsh SSSI and within arable fields to the west of Mill Brook on the southern side of the River Ribble.
- 1.4.2.36 A total of 18 oystercatcher territories were identified. These territories were primarily distributed along the survey area to the north of the River Ribble, with only one territory noted to the south of the River Ribble. These territories were mainly located on land used as pasture.
- 1.4.2.37 All other wader breeding territories were located within Newton Marsh SSSI. This included five avocet territories, four redshank territories and one territory each of black-tailed godwit and little ringed plover.
- 1.4.2.38 The possible breeding curlew from the previous year were not located.

Raptors

2022

- 1.4.2.39 A total of nine kestrel breeding territories were identified within the survey area. These territories were widely distributed across the survey area and individually separated by at least 1 km or more from each other (**Figure 1.30**). Kestrel territories were found adjacent to a variety of habitats, including coastal saltmarsh, arable, pasture and in proximity to urban areas.
- 1.4.2.40 A single sparrowhawk breeding territory was identified within the survey area and was located approximately 1 km north of Warton located centrally within the survey area (**Figure 1.28**).

2023

- 1.4.2.41 Three raptor species were identified as likely breeders within the survey area following the 2023 breeding bird surveys. These were buzzard (**Figure 1.29**), kestrel and sparrowhawk.
- 1.4.2.42 The most abundant species were kestrel, with nine likely territories identified. These territories were distributed across the survey area from Lytham St. Annes Dunes to the area south of the River Ribble.
- 1.4.2.43 Three likely breeding sparrowhawk territories were identified, all north of the River Ribble. One territory was located to the south of Hillock Lane, one north of the A584 close to Dow Brook and the third to the north of the A583 within woodland to the east of Savick Brook.
- 1.4.2.44 Buzzard were identified as likely to be holding two breeding territories within the survey area. Both sites were north of the river Ribble, one within farmland to the east of Huck Lane and the second within farmland to the south of the A583 and to the east of Lea Marsh.

Owls

2022

- 1.4.2.45 Two barn owl breeding territories were identified within the survey area. Both territories are relatively central within the survey area, with a breeding territory near Moss Side and a breeding territory at New House Farm, located on Bryning Hall Lane, to the west of Bryning.
- 1.4.2.46 A single tawny owl breeding territory was identified within the survey area. The territory was identified towards the east end of the survey area, in a tree line approximately 500 m north of Marsh Farm, located to the north west of Howick Cross (**Figure 1.33**), and surrounded by arable land.

2023

- 1.4.2.47 Three owl species were identified as likely to be holding breeding territories within the survey area following the 2023 breeding bird surveys. These species were barn owl, tawny owl and little owl (**Figure 1.32**).

- 1.4.2.48 As discussed in **paragraph 1.4.2.11** five barn owl territories were located across the survey area.
- 1.4.2.49 One likely tawny owl territory was identified within the survey area. This was located within an area of woodland approximately 120 m north of the A583 and 195 m east of Savick Brook.
- 1.4.2.50 One likely little owl territory was also identified within the survey area. This was located at the edge of the survey area near the village of Moss Side.

Passerines

2022

- 1.4.2.51 A wide range of passerine species were identified as breeding within the survey area, including relatively common farmland, hedgerow and woodland species, e.g., linnet (15 territories), yellowhammer (seven territories), song thrush (29 territories), common whitethroat (37 territories), sedge warbler (10 territories) and willow warbler (nine territories, **Figure 1.46**). A total of 25 passerine species were identified.
- 1.4.2.52 The most abundant passerine species were skylark (51 territories), common whitethroat (37 territories) and rook (two rookeries supporting at least 36 pairs, **Figure 1.39**). Skylark were widely distributed throughout the survey area, albeit with higher concentrations of breeding territories identified in arable and pasture habitat within approximately 1 km north of Lytham St. Annes. Common whitethroat were widely distributed and associated with hedgerows and small areas of scrub within wider areas of arable and pasture.
- 1.4.2.53 Other BOCC5 UK red listed species were recorded in low abundance, including corn bunting (three territories), yellow wagtail (two territories, **Figure 1.68**) and grasshopper warbler (one territory).

2023

- 1.4.2.54 A wide range of passerine species were also identified as likely to be holding breeding territories within the survey area following the 2023 breeding bird surveys. The total of 40 passerine species included relatively common farmland, hedgerow and woodland species, e.g., reed bunting (54 territories), greenfinch (28 territories, **Figure 1.74**), song thrush (57 territories), common whitethroat (45 territories), sedge warbler (55 territories) and wren (49 territories, **Figure 1.54**).
- 1.4.2.55 The most abundant passerine species were skylark (74 territories), chiffchaff (72 territories, **Figure 1.47**), blackbird (70 territories, **Figure 1.60**) and robin (69 territories, **Figure 1.61**). Skylark territories were widely dispersed across the survey area, with the species spread from Lytham St. Anne's Dunes SSSI across the area to the north of the River Ribble and territories also found to the south of the River Ribble. Skylark territories were predominantly found within pasture and arable fields. Chiffchaff were also widely dispersed across the survey area and were mainly associated with hedgerows, small stands of trees and scrub areas.

Other taxonomic groups

2022

- 1.4.2.56 A total of four swift breeding territories were identified within the survey area. These territories were widely distributed across the survey area and individually separated by approximately 2 km or more from each other (**Figure 1.35**).
- 1.4.2.57 A total of three likely stock dove breeding territories were identified within the survey area (**Figure 1.15**). These territories were dispersed across the survey area with three located north of the Ribble within areas of arable land, and one to the south in similar habitat.
- 1.4.2.58 One species of heron, little egret, was determined as likely to be breeding within the survey area during the 2022 breeding bird surveys. One territory was identified, located to the north of the Ribble, close to Lea Marsh.
- 1.4.2.59 One species of partridge, grey partridge, was determined as likely to be breeding within the survey area during the 2022 breeding bird surveys. A total of three territories were identified. One territory was south of the Ribble, within arable land to the west of Howick Cross Lane. Two further territories were identified to the north of the River Ribble, across arable land between Lower Land and Kirkham Road.
- 1.4.2.60 Migratory hirundines were identified as likely breeding with five house martin territories located (**Figure 1.37**). All five territories were located to the north of the Ribble across areas of arable and pasture land.

2023

- 1.4.2.61 One likely stock dove breeding territory was identified during the 2023 breeding bird surveys. The sight was located south of the River Ribble and to the east of the Onshore Order Limits and the Intertidal Infrastructure area within an area of woodland approximately 350 m west of Muirfield and Crow Hills Road.
- 1.4.2.62 One heron species, grey heron was determined likely to be holding breeding territories within the survey area (**Figure 1.25**). A total of seven territories were identified in a heronry within woodland approximately 95 m north of the A583 and 45 m east of Savick Brook.
- 1.4.2.63 A total of three likely kingfisher territories were determined to be present within the survey area following the 2023 breeding bird surveys. One territory was located to the south of the Ribble along Mill Brook. Two territories were located north of the Ribble, one on Savick Brook and one within the drainage system connected to Liggard Beck and Main Drain between Ballam Road and Saltcotes Road.
- 1.4.2.64 One partridge species, grey partridge, was determined likely to be holding a breeding territory within the survey area. One territory was identified, located south of the River Ribble within arable land approximately 215 m west of Howick Cross Lane.

- 1.4.2.65 Two species from the rails, crakes and coots group were identified as likely to be breeding within the survey area, coot and moorhen. One coot territory was identified within Newton Marsh (**Figure 1.17**). Three moorhen territories were identified across the survey area, all three were located within land used for pasture and containing ponds and ditches to the north of Hillock Lane (**Figure 1.16**).
- 1.4.2.66 Migratory hirundines were identified as likely breeding within the survey area, with two species identified, house martin and swallow (**Figure 1.36**). Four house martin territories were identified following the 2023 breeding bird surveys. Three territories were distributed to the north of the River Ribble and one to the south. The four territories were associated with areas of arable and pasture land. A total of 14 swallow territories were identified. These territories were dispersed across the survey area, five territories to the south of the River Ribble and the remaining nine located between Newton with Scales and Moss Hall Lane at Lytham Moss. As with house martin, these territories were associated with area of arable and pasture land.
- 1.4.2.67 One species of woodpecker, great spotted woodpecker, was identified as likely to be holding breeding territories within the survey area (**Figure 1.34**). Five territories were identified, all located towards the eastern end of the survey area, three sites to the south of the River Ribble and two to the north. All five territories are located in woodland patches.

Mapped results

- 1.4.2.68 Mapped locations of the breeding territories for all recorded species identified as likely to be breeding and listed in taxonomic order in **Table 1.11** are shown in **Figure 1.8** to **Figure 1.79**, with the individual species maps grouped and presented in the same order as the species abundance presented in **Table 1.11**.
- 1.4.2.69 Marked registrations of territories on each map indicate the putative territory centre and not the location of a nest. Territories are indicative of a possible breeding attempt and do not confirm successful nesting.

Table 1.11: Number of breeding territories identified within the survey area during the 2022 and 2023 breeding bird surveys and details of their conservation and legal protection status

Taxonomic order	Species	Number of territories 2022	Number of territories 2023	Maximum number of territories	UK BOCC5 status	Annex 1 listed	Schedule 1 listed	Section 41 listed
Geese, ducks and swans	Canada goose	-	7	7	Not assessed	no	no	no
	Shelduck	23	14	23	Amber	no	no	no
	Shoveler	0	4	4	Amber	no	no	no
	Gadwall	0	1	1	Amber	no	no	no
	Mallard	36	7	36	Amber	no	no	no
	Teal	1	1	1	Amber	no	no	no
Pheasants and partridges	Grey partridge	3	1	3	Red	no	no	yes
Cuckoos, doves and pigeons	Stock dove	3	1	3	Amber	no	no	no
Rails, crakes and coots	Moorhen	0	3	3	Amber	no	no	no
	Coot	0	1	1	Green	no	no	no
Waders	Oystercatcher	14	18	18	Amber	no	no	no
	Avocet	0	5	5	Amber	yes	yes	no
	Lapwing	25	33	33	Red	no	no	yes
	Little ringed plover	0	1	1	Green	no	yes	no
	Curlew	2	0	2	Red	no	no	yes
	Black-tailed godwit	0	1	1	Red	no	yes	yes

Taxonomic order	Species	Number of territories 2022	Number of territories 2023	Maximum number of territories	UK BOCC5 status	Annex 1 listed	Schedule 1 listed	Section 41 listed
	Redshank	0	4	4	Amber	no	no	no
Heron	Grey heron	0	7	7	Green	no	no	no
	Little egret	1	0	1	Green	yes	no	no
Kingfishers	Kingfisher	0	3	3	Green	yes	yes	no
Raptors	Sparrowhawk	1	3	3	Amber	no	no	no
	Buzzard	0	2	2	Green	no	no	no
	Kestrel	9	9	9	Amber	no	no	no
Owls	Barn owl	2	5	5	Green	no	yes	no
	Little owl	0	1	1	Not assessed	no	no	no
	Tawny owl	1	1	1	Amber	no	no	no
Woodpeckers	Great spotted woodpecker	0	5	5	Green	no	no	no
Swifts	Swift	4	0	4	Red	no	no	no
Swallows and martins	Swallow	0	14	14	Green	no	no	no
	House martin	5	4	5	Red	no	no	no
Passerines	Jay	-	3	3	Green	no	no	no
	Rook	2	2	2	Amber	no	no	no
	Coal tit	-	3	3	Green	no	no	no
	Blue tit	-	30	30	Green	no	no	no
	Great tit	-	33	33	Green	no	no	no

Taxonomic order	Species	Number of territories 2022	Number of territories 2023	Maximum number of territories	UK BOCC5 status	Annex 1 listed	Schedule 1 listed	Section 41 listed
	Skylark	51	74	74	Red	no	no	yes
	Cetti's warbler	0	3	3	Green	no	yes	no
	Long-tailed tit	-	8	8	Green	no	no	no
	Willow warbler	9	21	21	Amber	no	no	no
	Chiffchaff	-	72	72	Green	no	no	no
	Sedge warbler	10	55	55	Amber	no	no	no
	Reed warbler	-	11	11	Green	no	no	no
	Grasshopper warbler	1	4	4	Red	no	no	yes
	Blackcap	-	32	32	Green	no	no	no
	Lesser whitethroat	-	8	8	Green	no	no	no
	Common whitethroat	37	45	45	Amber	no	no	no
	Wren	8	49	49	Amber	no	no	no
	Nuthatch	-	8	8	Green	no	no	no
	Treecreeper	-	9	9	Green	no	no	no
	Starling	9	10	10	Red	no	no	yes
	Song thrush	29	57	57	Amber	no	no	yes
	Mistle thrush	2	7	7	Red	no	no	no
	Blackbird	-	70	70	Green	no	no	no
	Robin	-	69	69	Green	no	no	no

Taxonomic order	Species	Number of territories 2022	Number of territories 2023	Maximum number of territories	UK BOCC5 status	Annex 1 listed	Schedule 1 listed	Section 41 listed
	Redstart	1	0	1	Amber	no	no	no
	Stonechat	1	6	6	Green	no	no	no
	Wheatear	2	0	2	Amber	no	no	no
	Tree sparrow	18	10	18	Red	no	no	yes
	House sparrow	14	1	14	Red	no	no	yes
	Duncock	6	33	33	Amber	no	no	yes
	Yellow wagtail	2	0	2	Red	no	no	yes
	Grey wagtail	2	1	2	Amber	no	no	no
	Pied wagtail	-	10	10	Green	no	no	no
	Meadow pipit	11	7	11	Amber	no	no	no
	Chaffinch	-	41	41	Green	no	no	no
	Bullfinch	1	5	5	Amber	no	no	yes
	Greenfinch	23	28	28	Red	no	no	no
	Linnet	15	13	15	Red	no	no	yes
	Goldfinch	-	9	9	Green	no	no	no
	Corn bunting	3	9	9	Red	no	no	yes
	Yellowhammer	7	4	7	Red	no	no	yes
	Reed bunting	27	54	54	Amber	no	no	yes

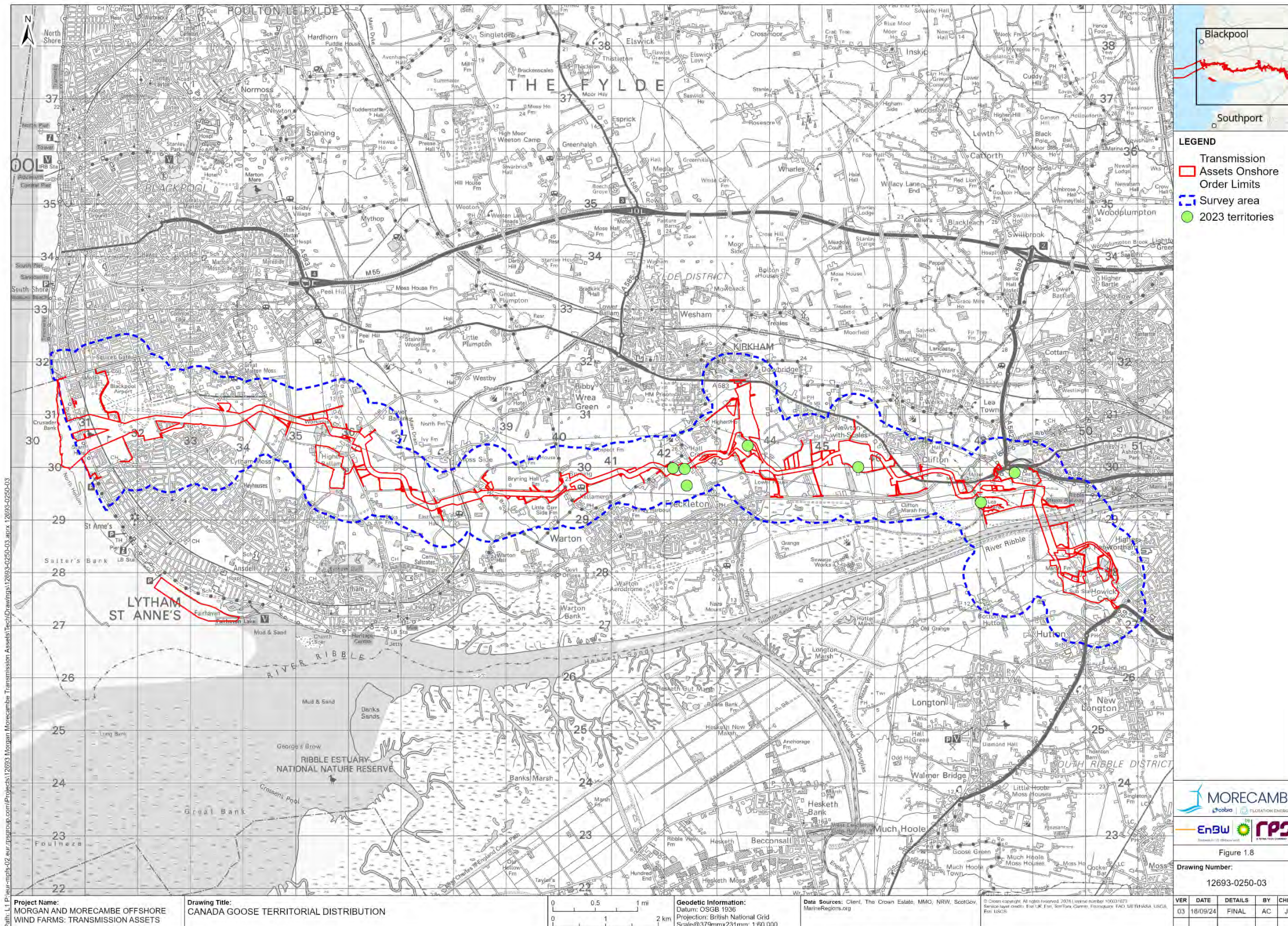


Figure 1.8: Canada goose territorial distribution

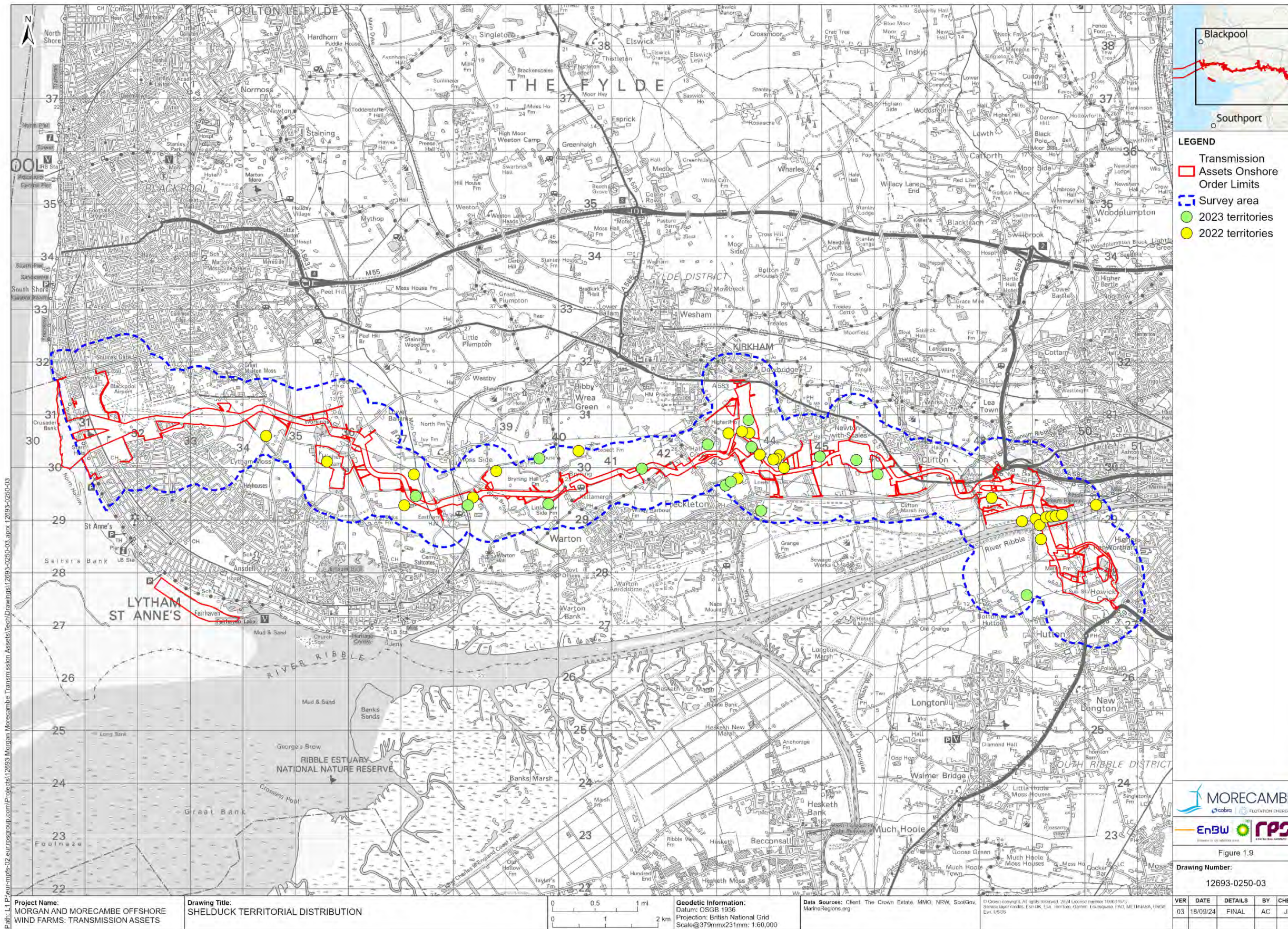


Figure 1.9: Shelduck territorial distribution

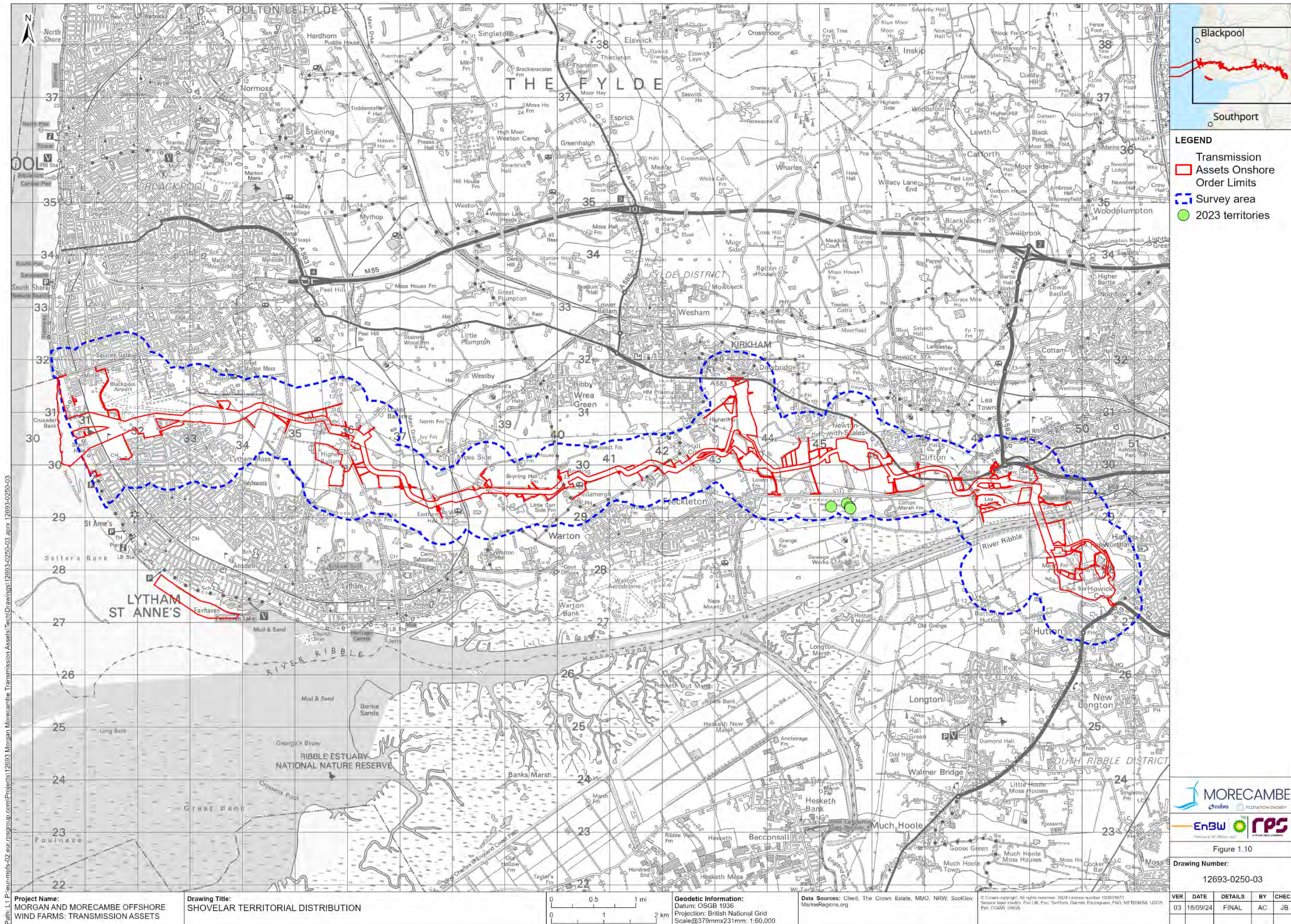


Figure 1.10: Shovelar territorial distribution

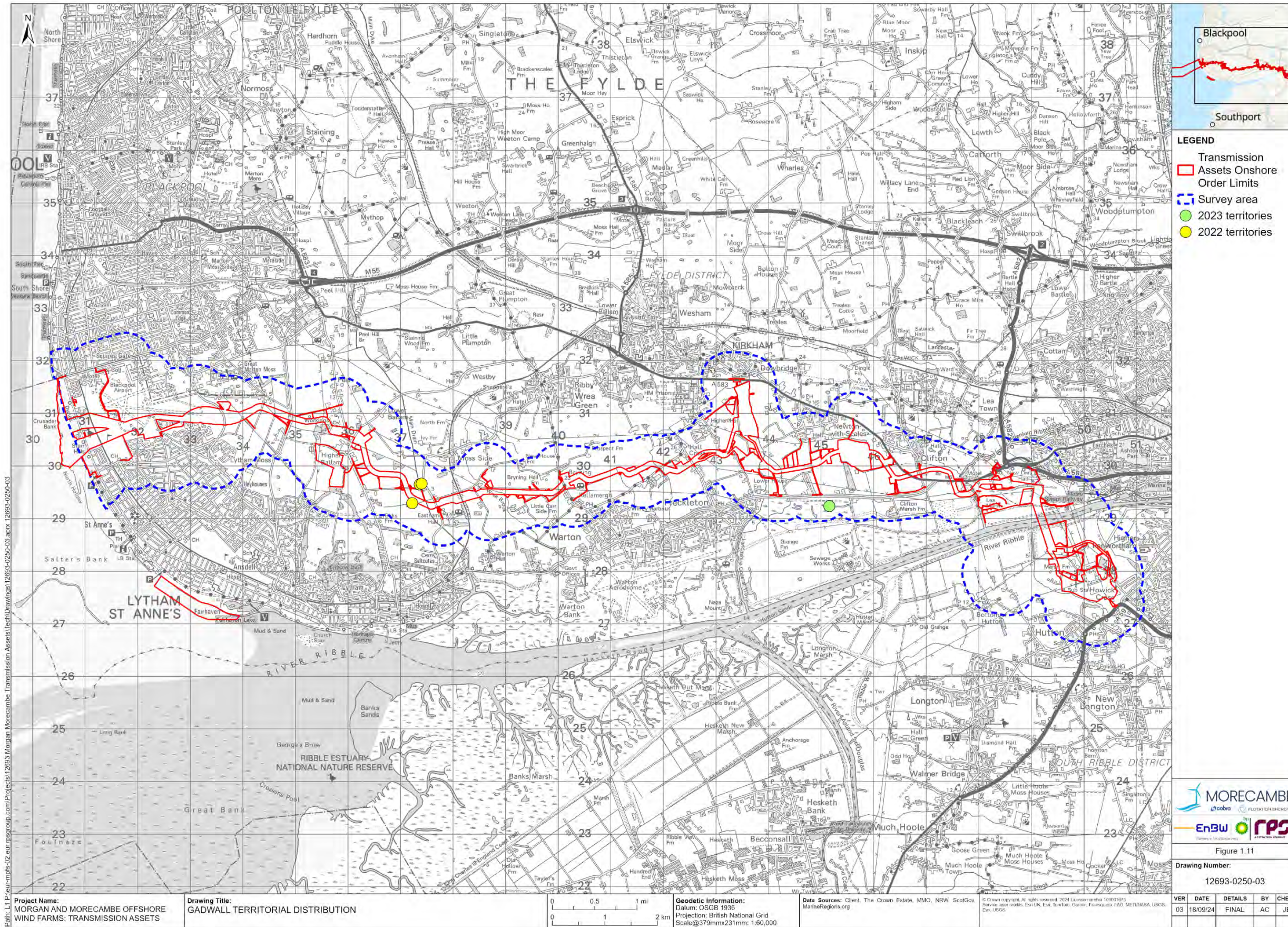


Figure 1.11: Gadwall territorial distribution

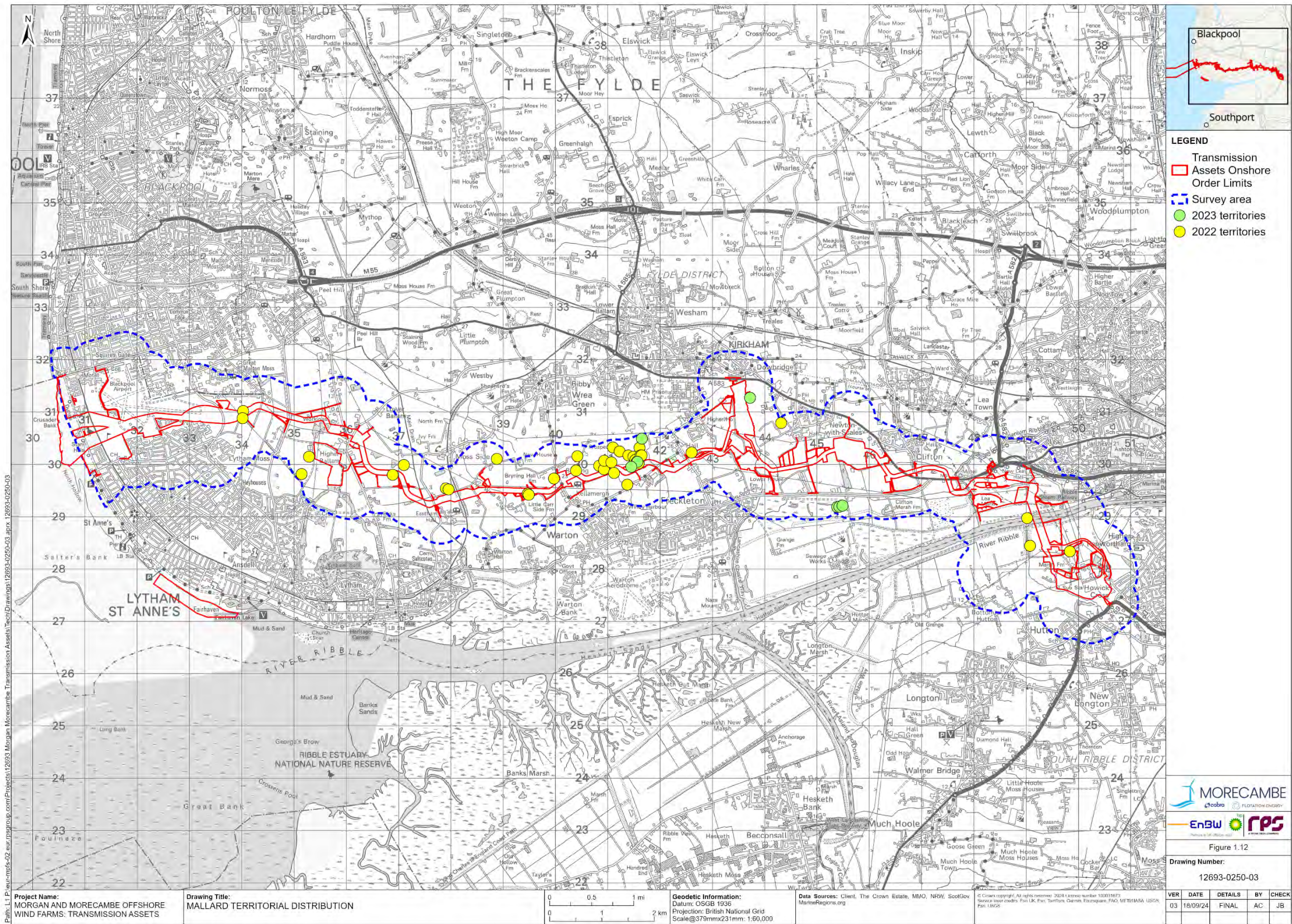


Figure 1.12: Mallard territorial distribution

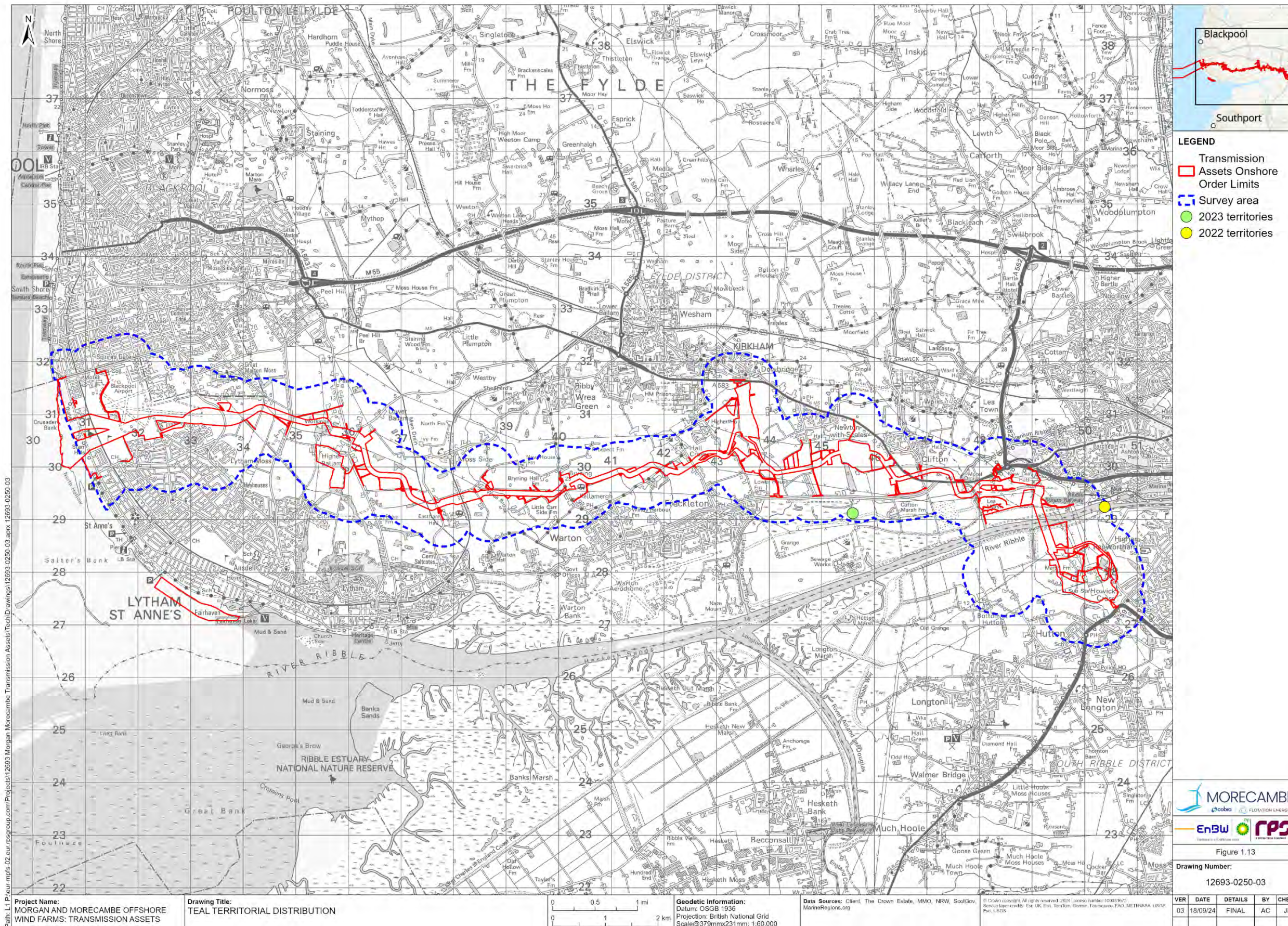


Figure 1.13: Teal territorial distribution



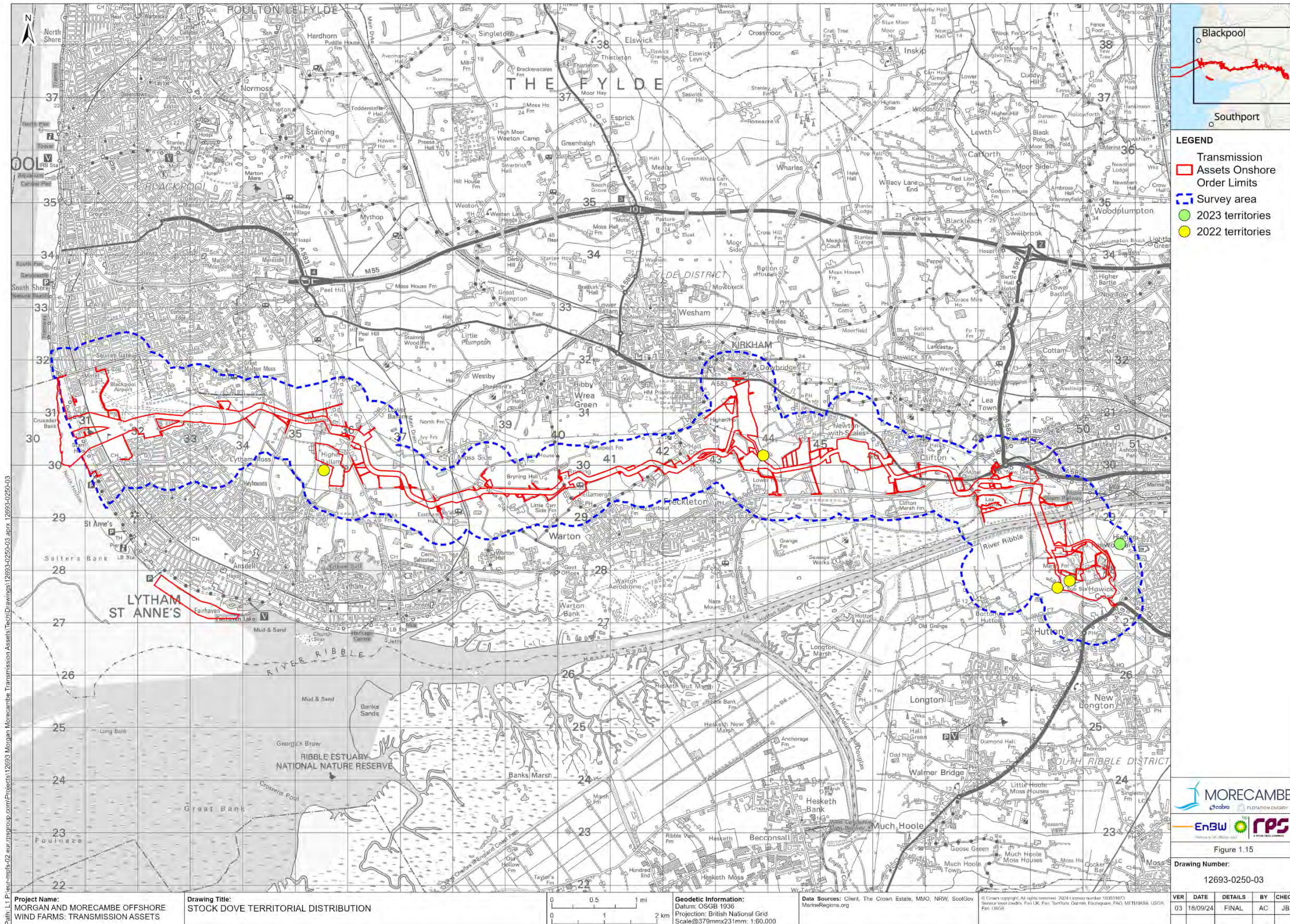


Figure 1.15: Stock dove territorial distribution

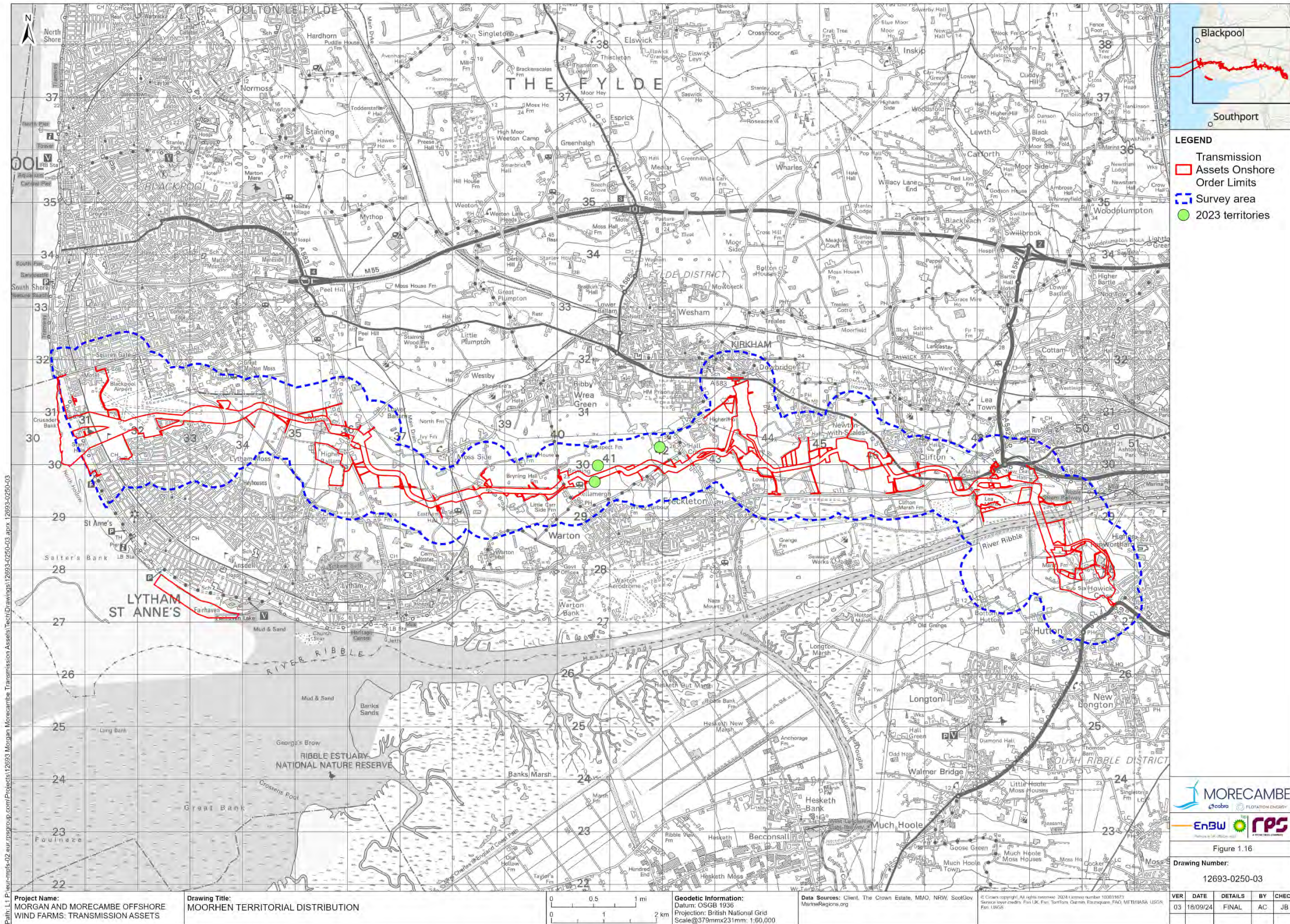


Figure 1.16: Moorhen territorial distribution

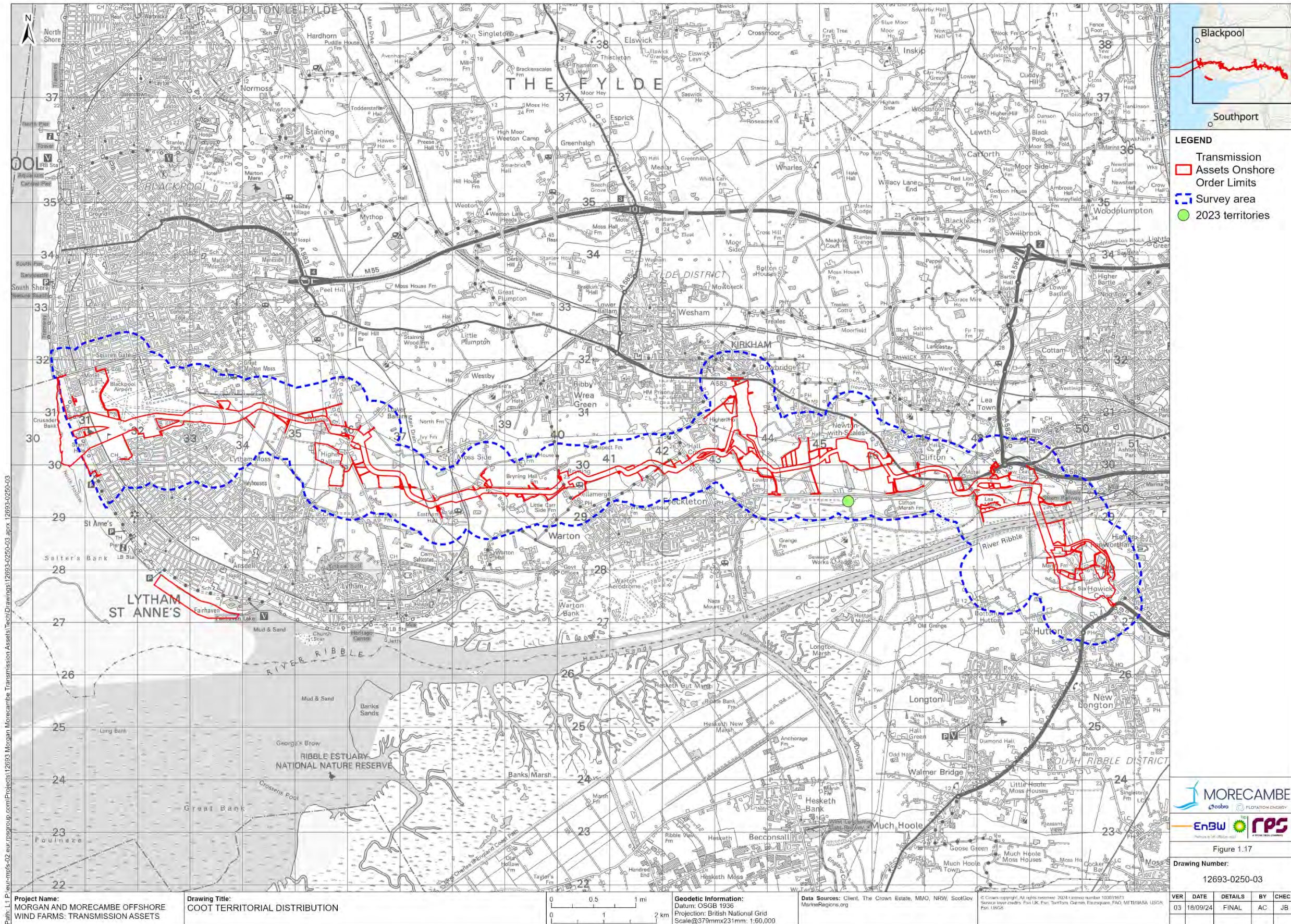


Figure 1.17: Coot territorial distribution

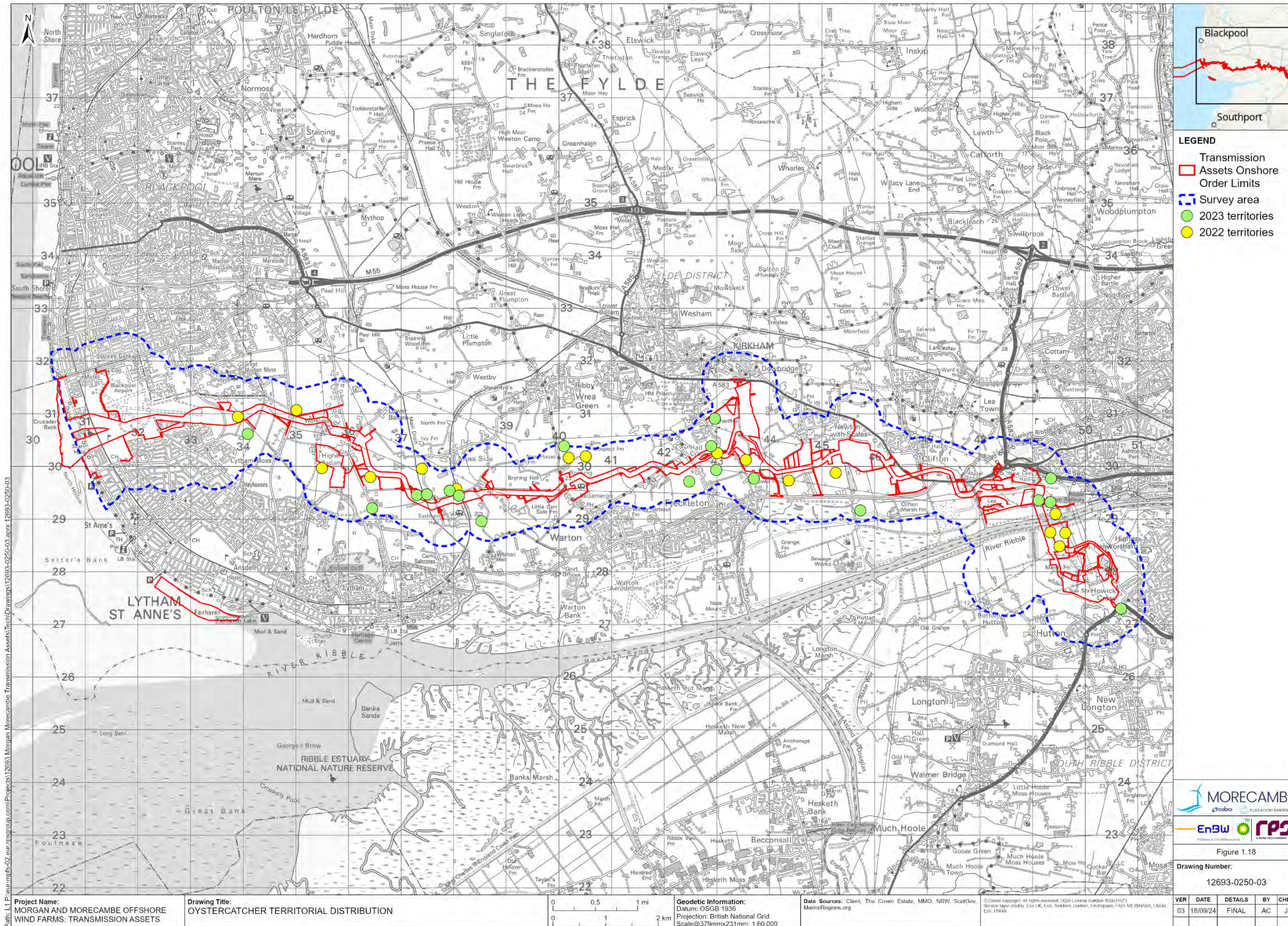


Figure 1.18: Oystercatcher territorial distribution

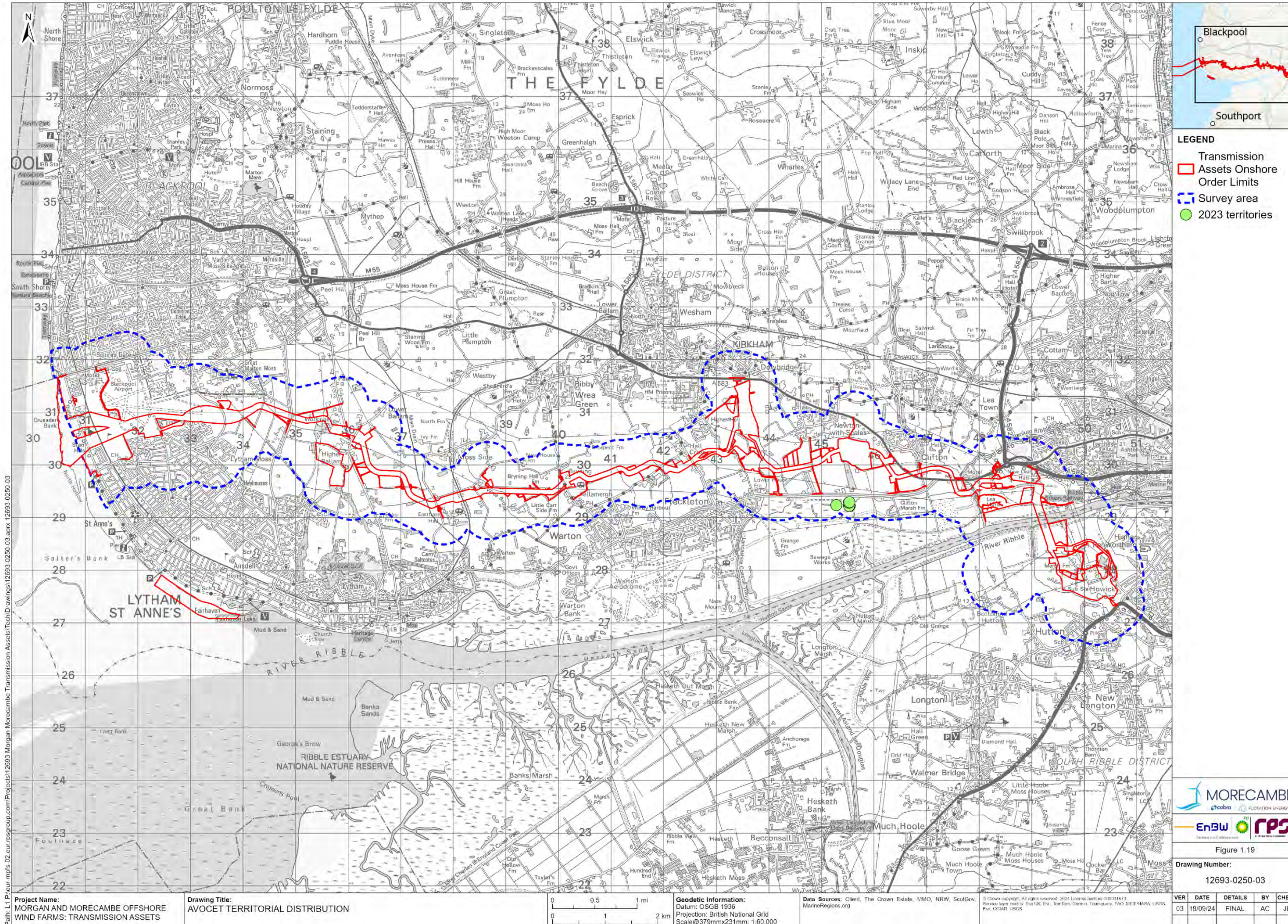


Figure 1.19: Avocet territorial distribution

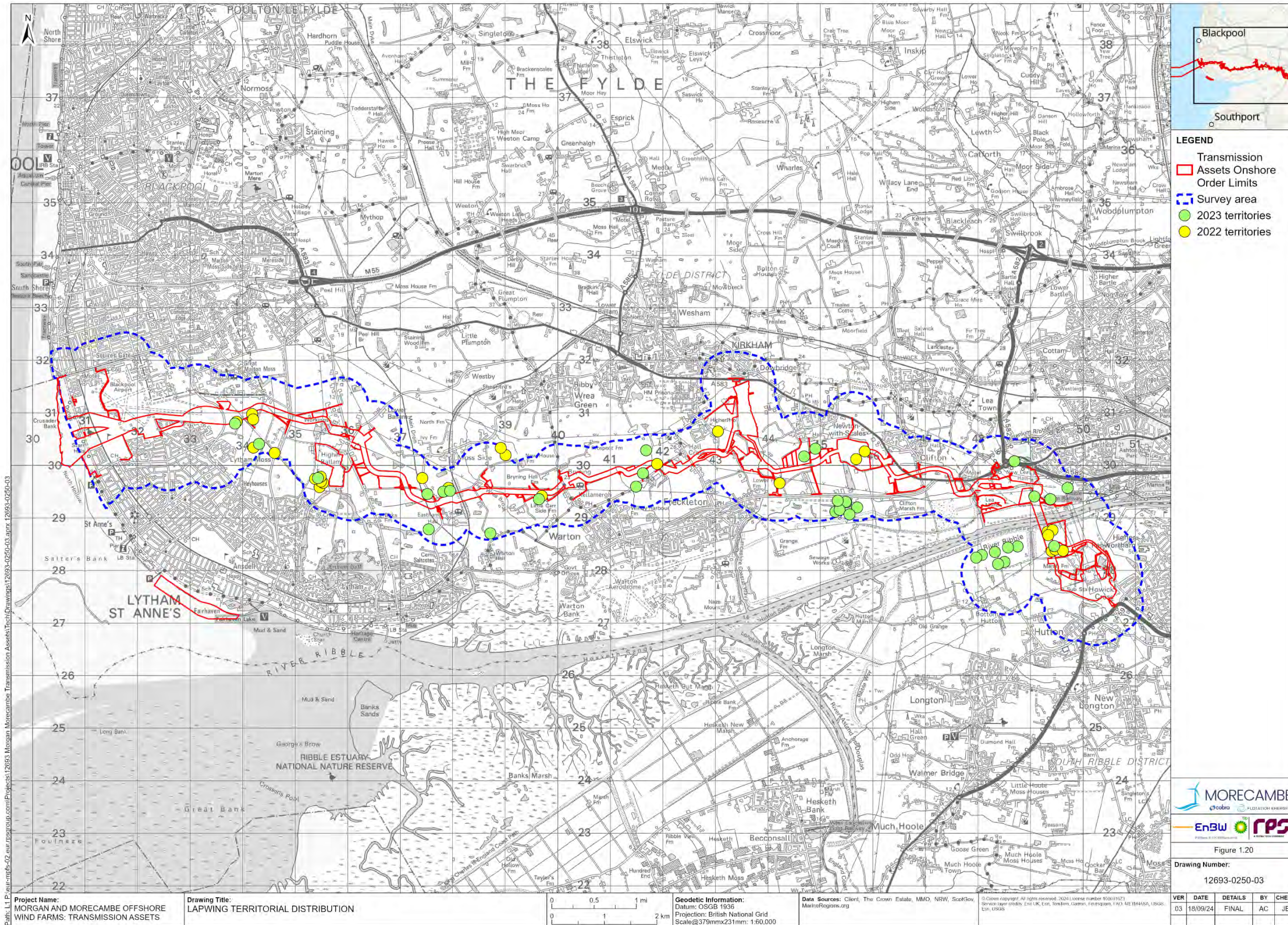


Figure 1.20: Lapwing territorial distribution

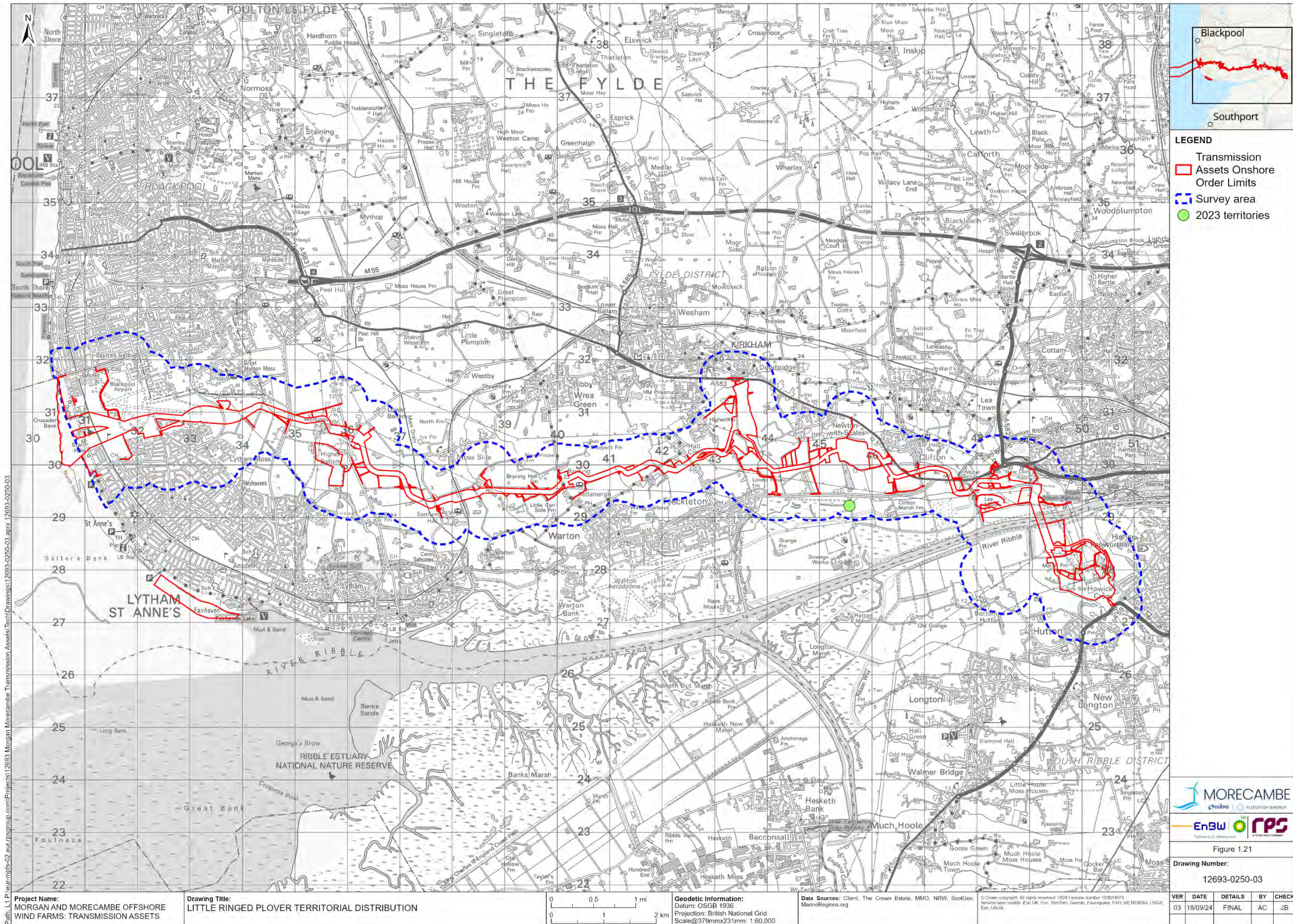


Figure 1.21: Little ringed plover territorial distribution

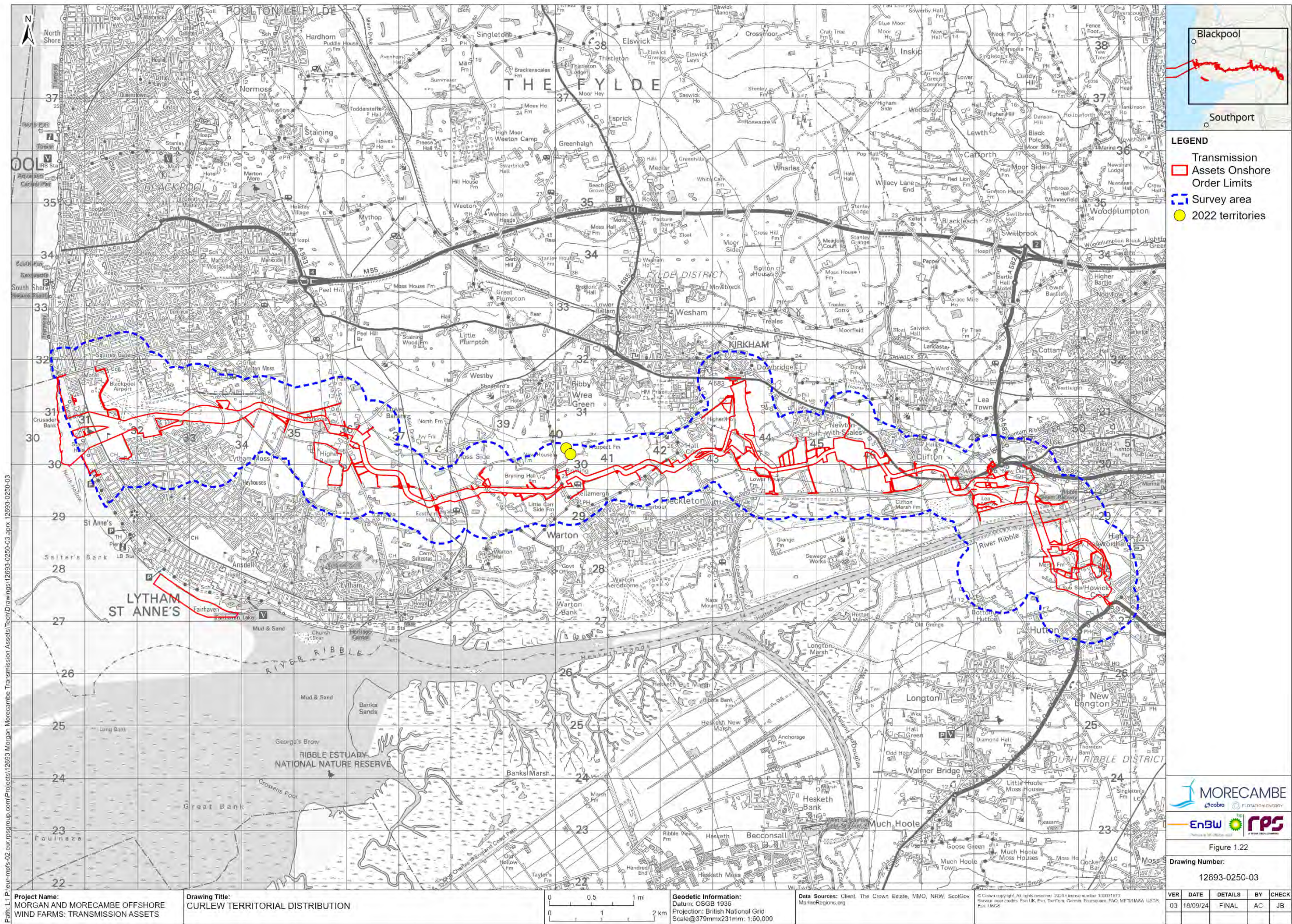


Figure 1.22: Curlew territorial distribution

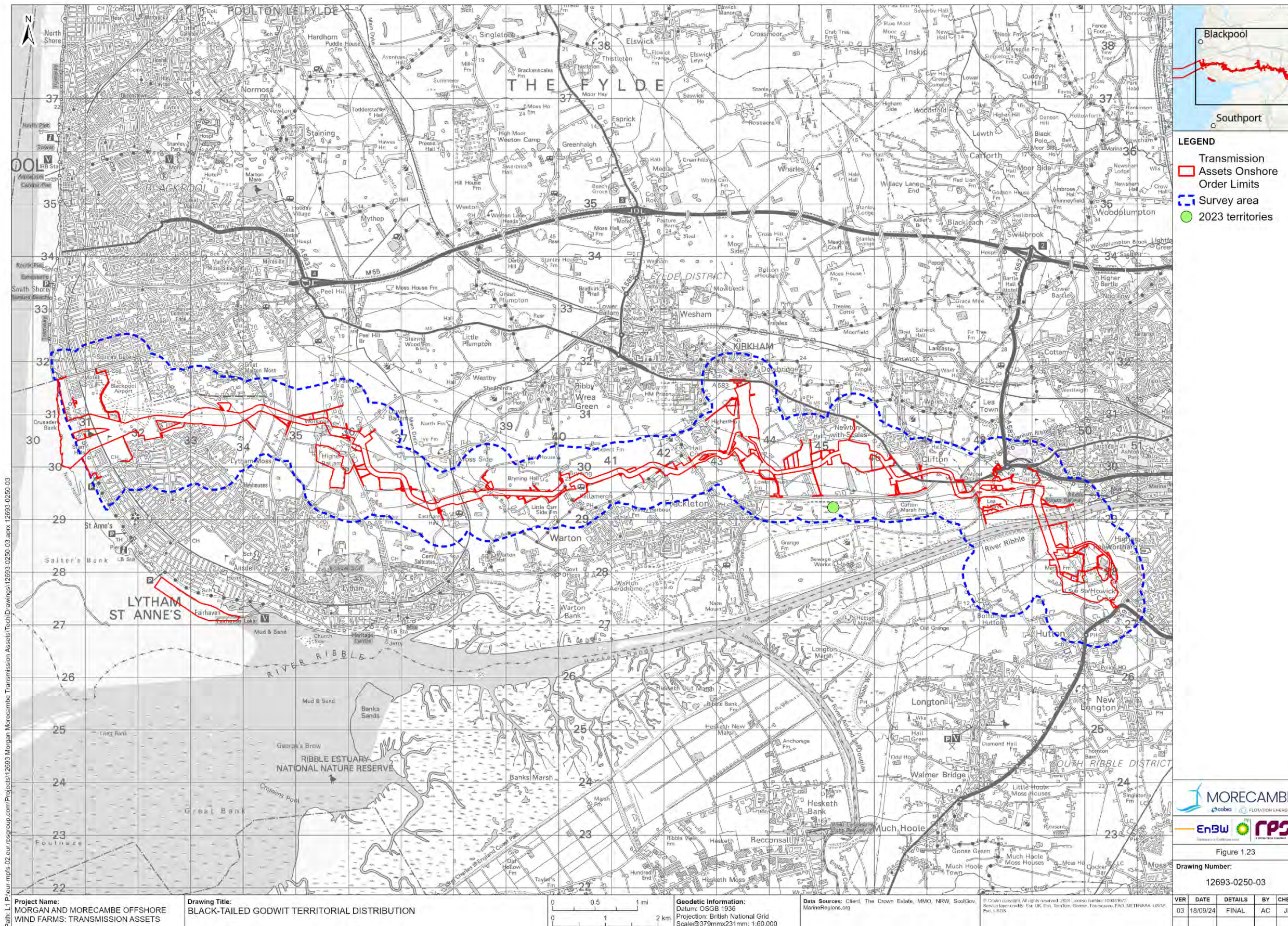


Figure 1.23: Black-tailed godwit territorial distribution

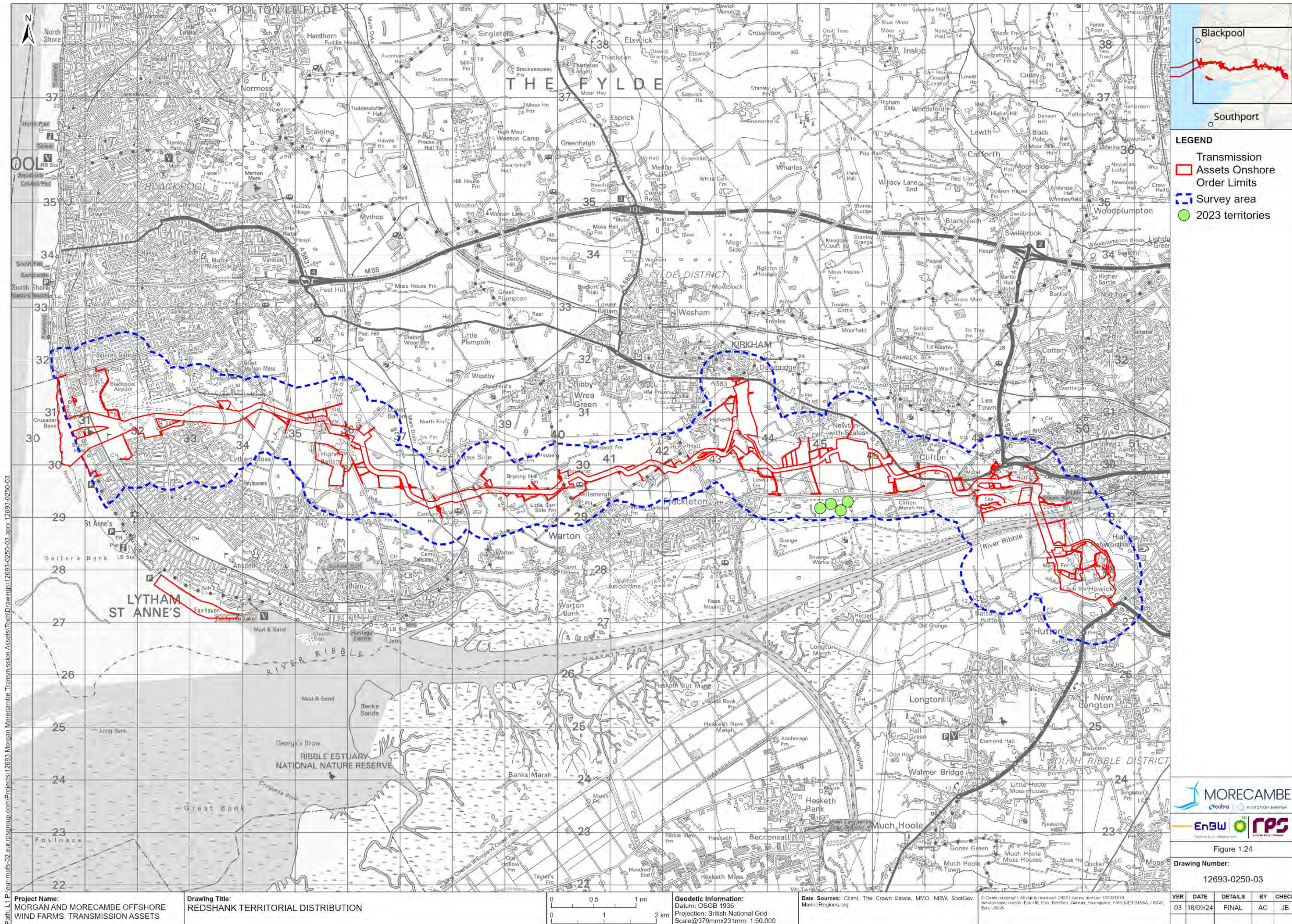


Figure 1.24: Redshank territorial distribution

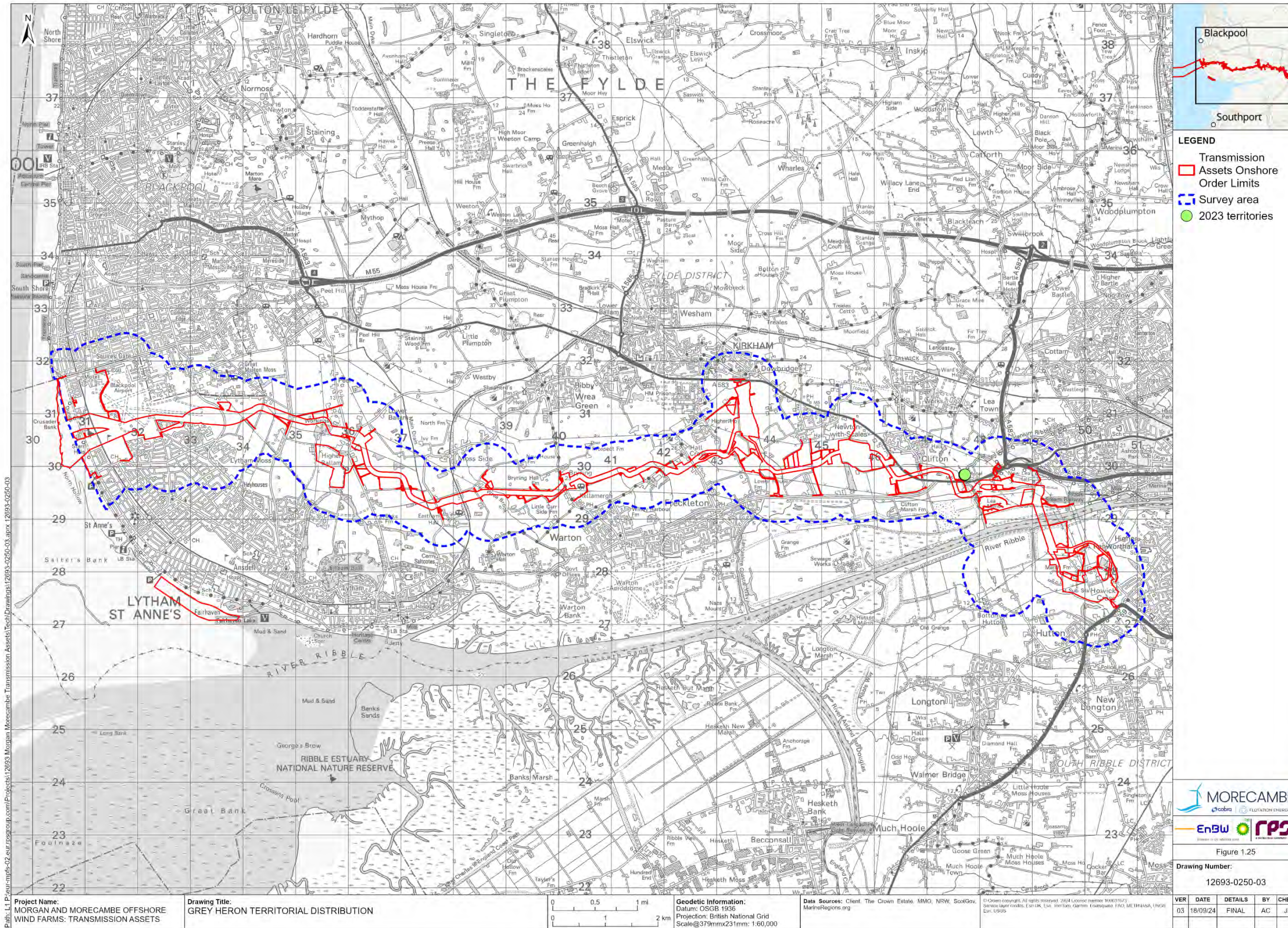


Figure 1.25: Grey heron territorial distribution

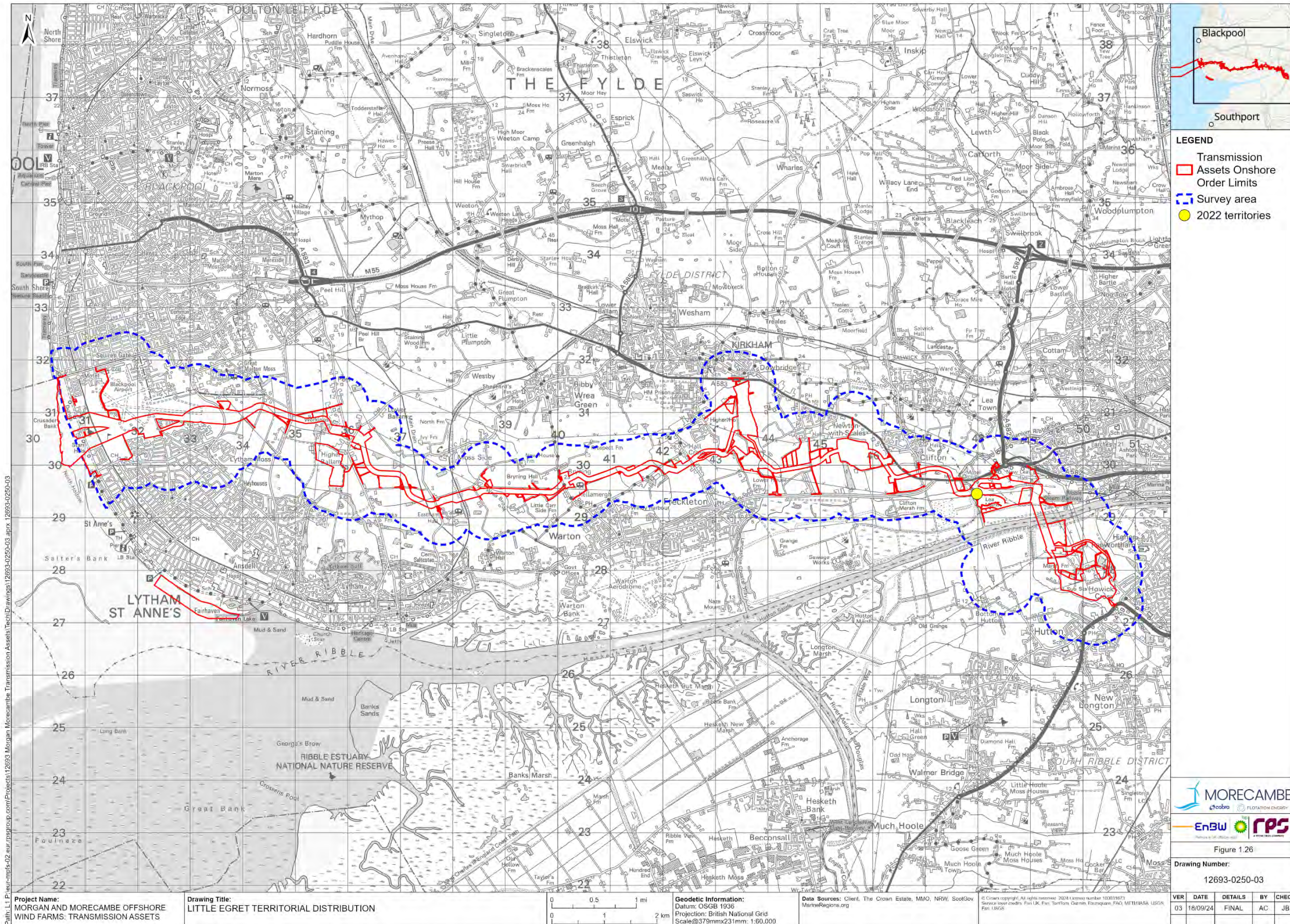


Figure 1.26: Little egret territorial distribution

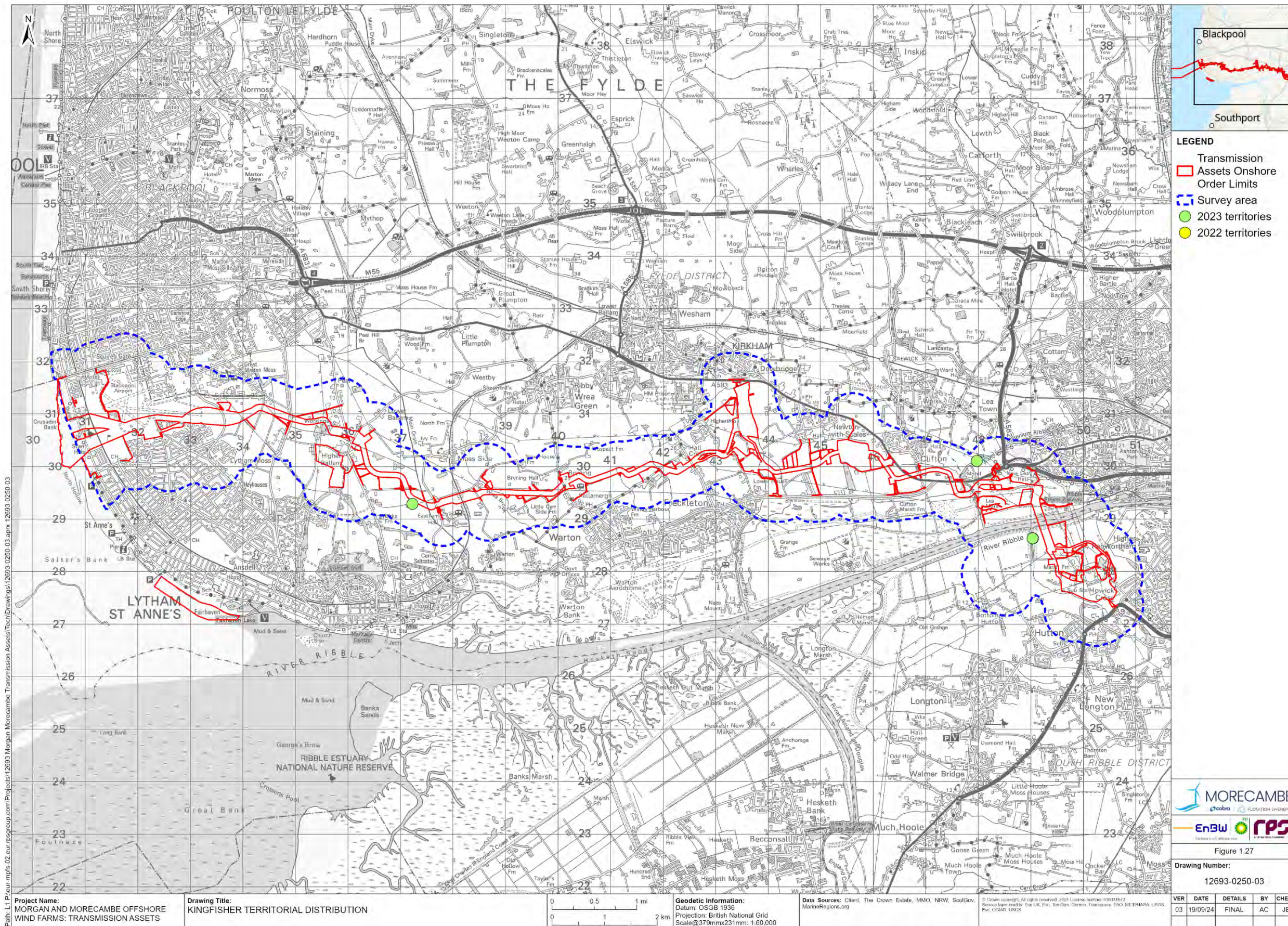


Figure 1.27: Kingfisher territorial distribution

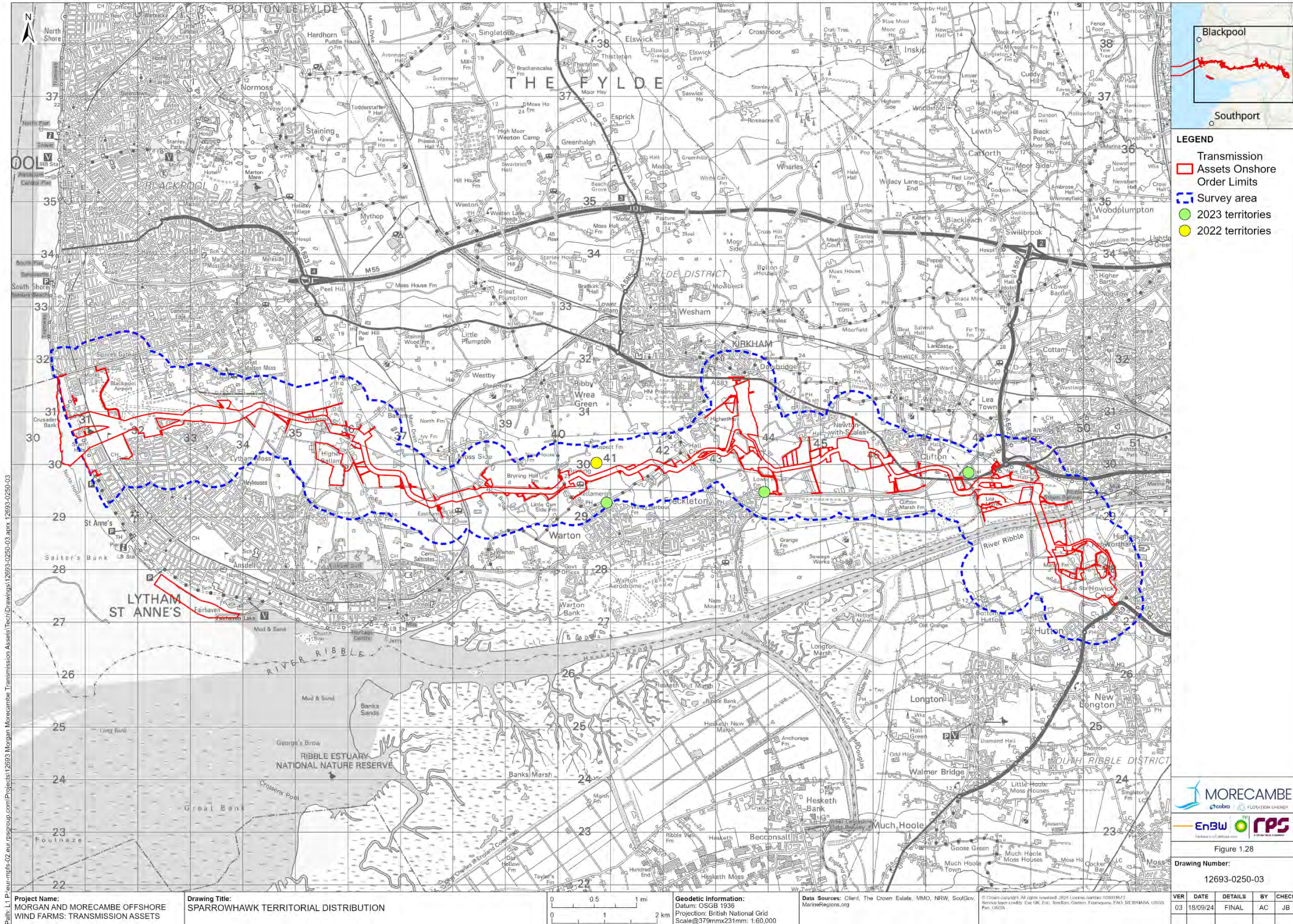


Figure 1.28: Sparrowhawk territorial distribution

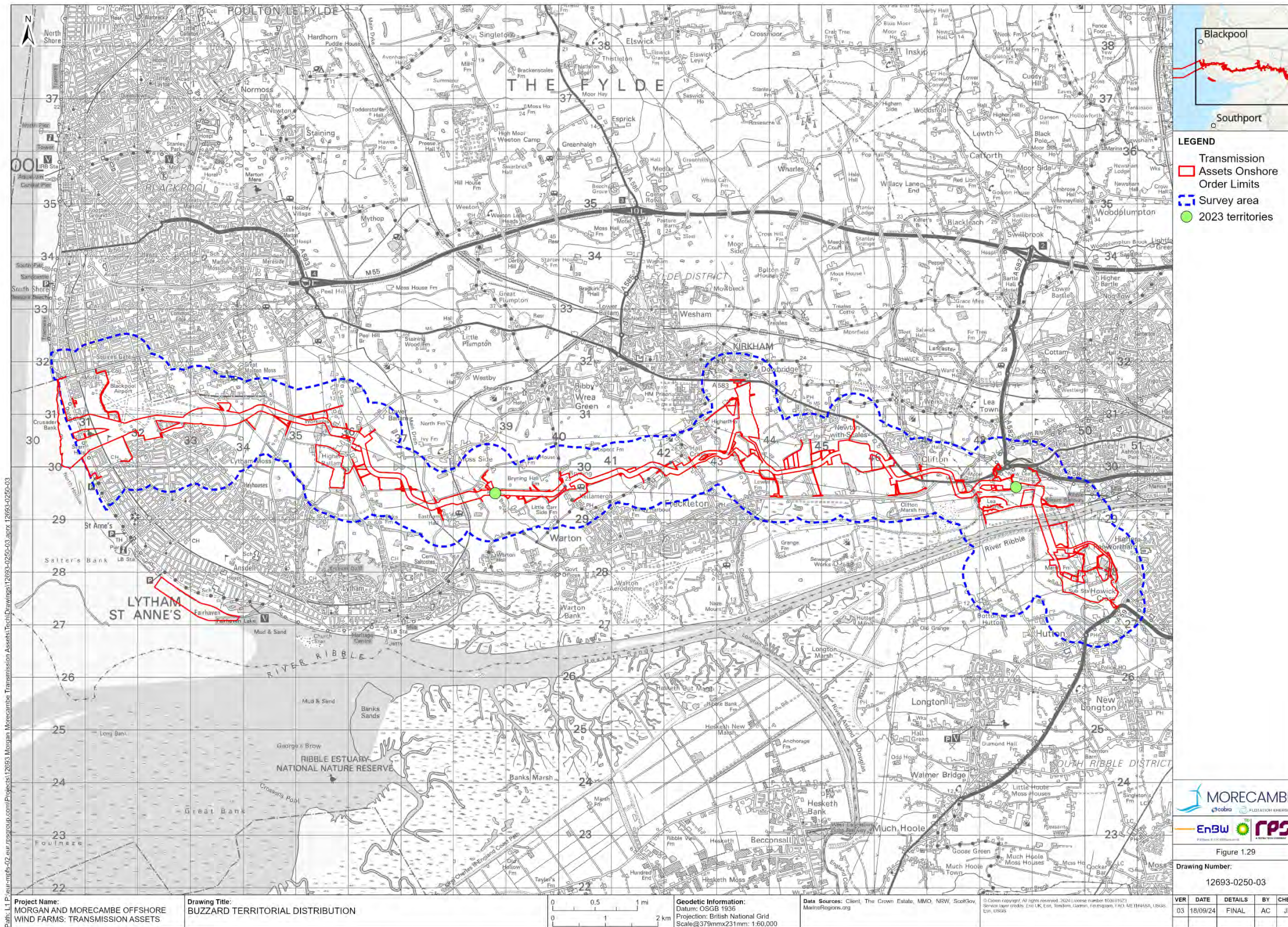


Figure 1.29: Buzzard territorial distribution

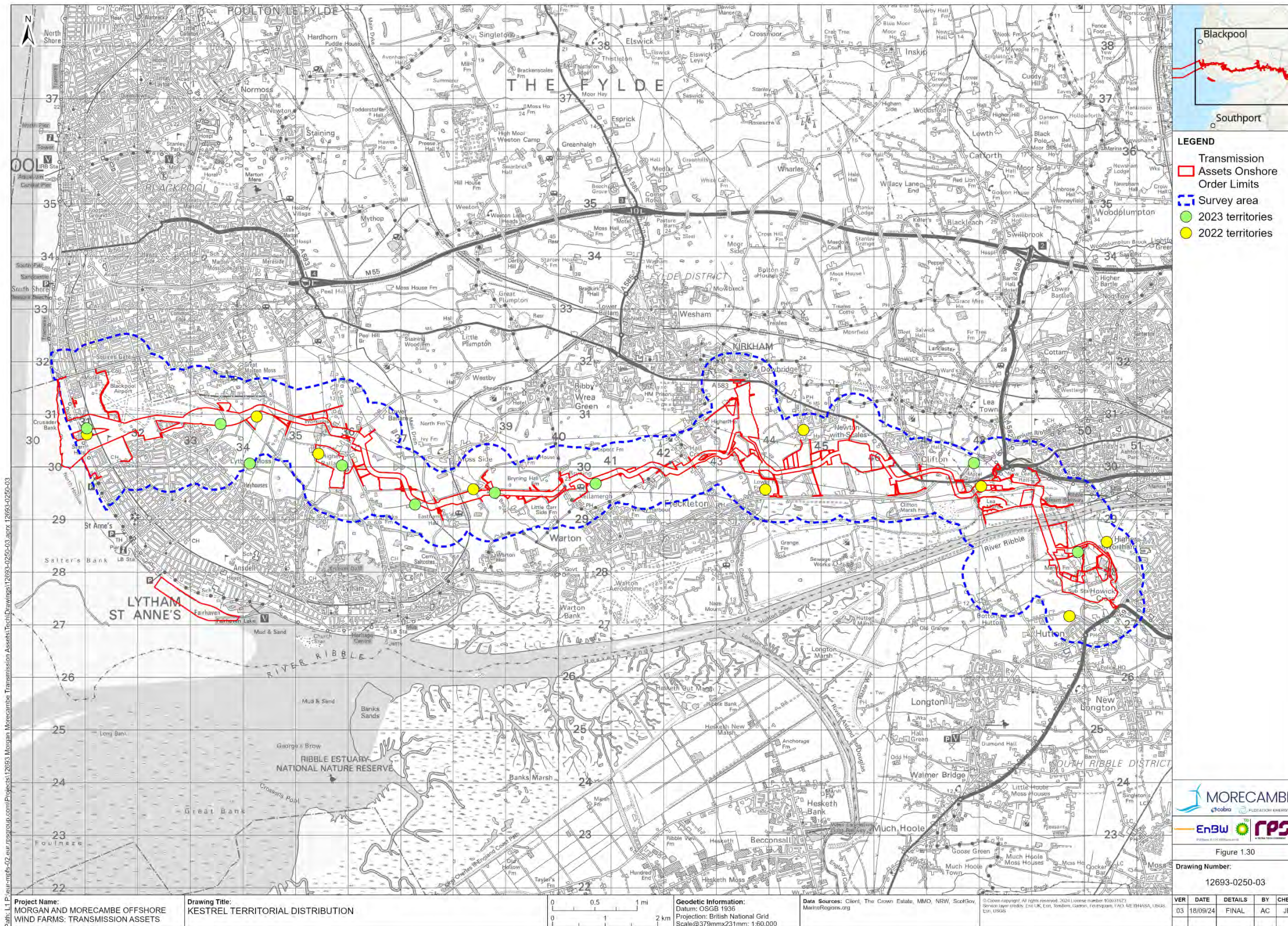


Figure 1.30: Kestrel territorial distribution

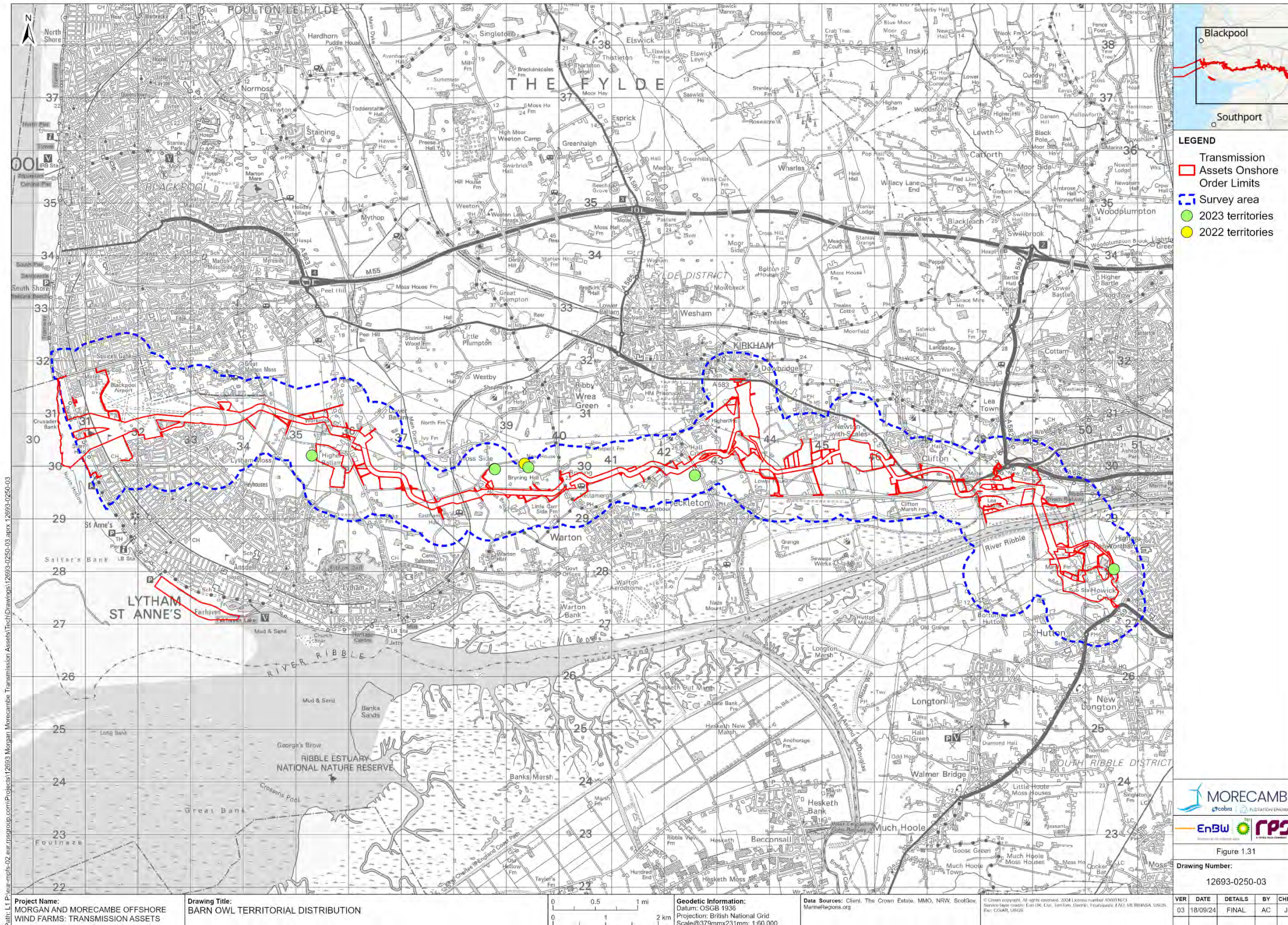


Figure 1.31: Barn owl territorial distribution

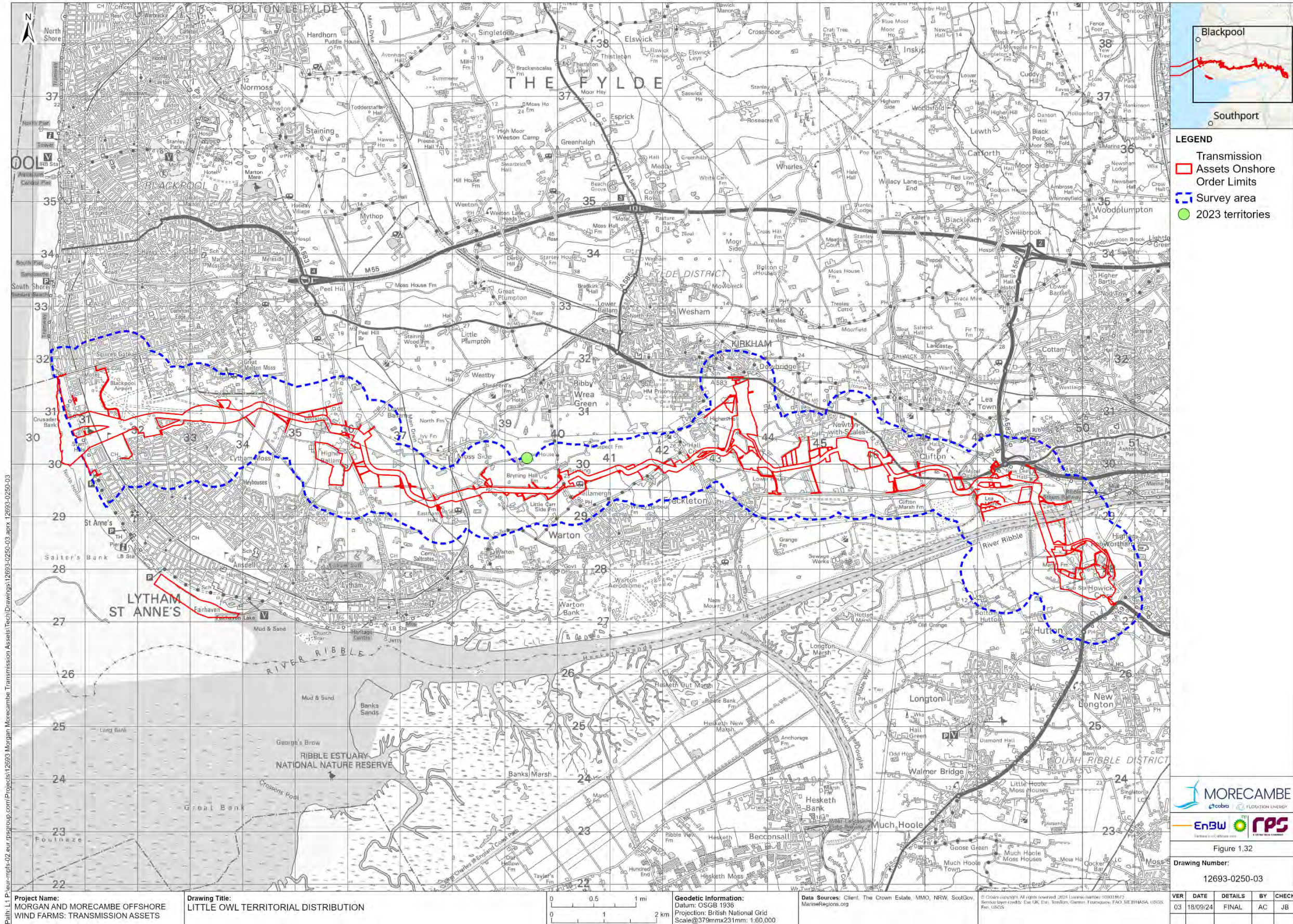


Figure 1.32: Little owl territorial distribution

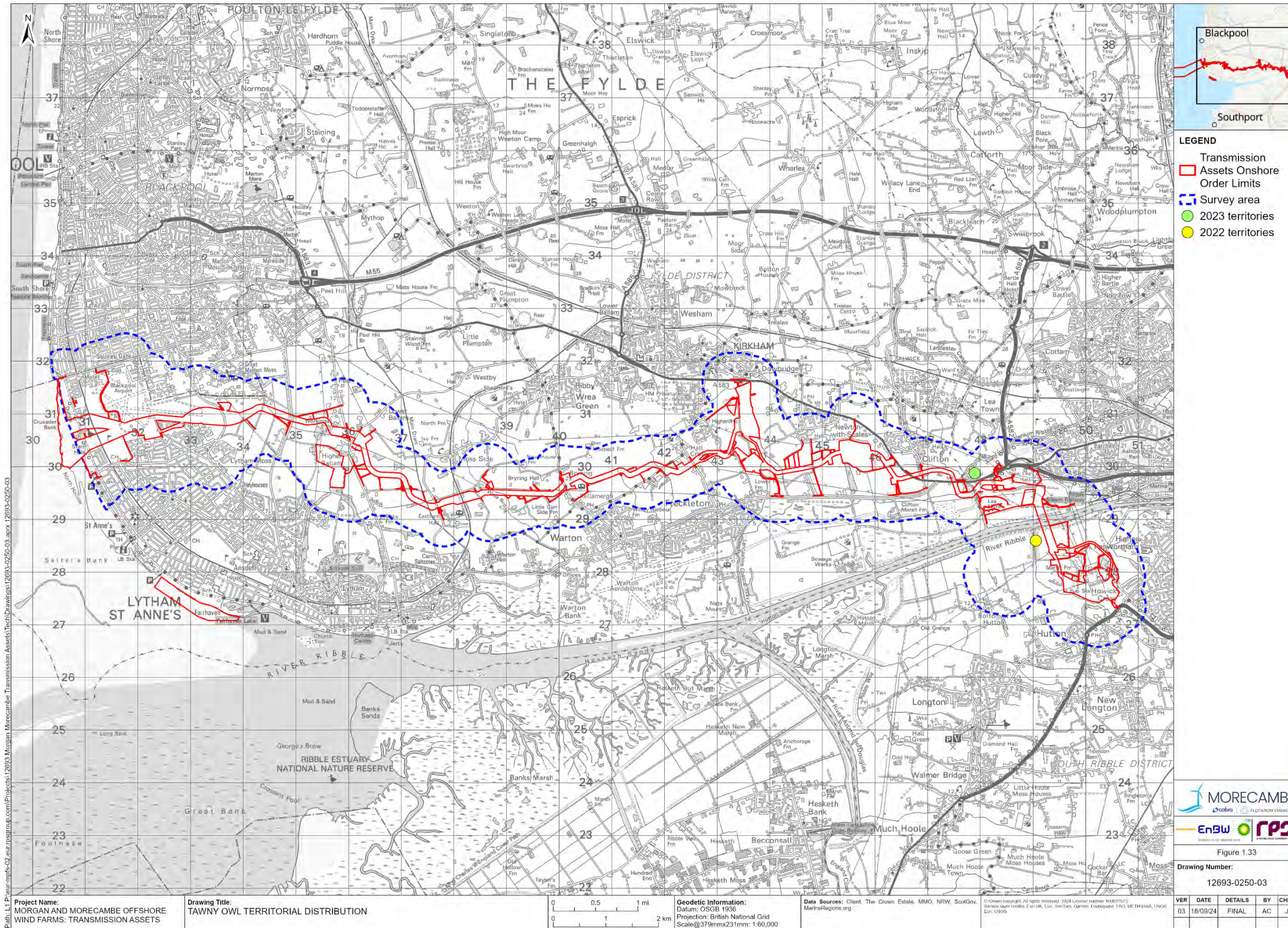


Figure 1.33: Tawny owl territorial distribution

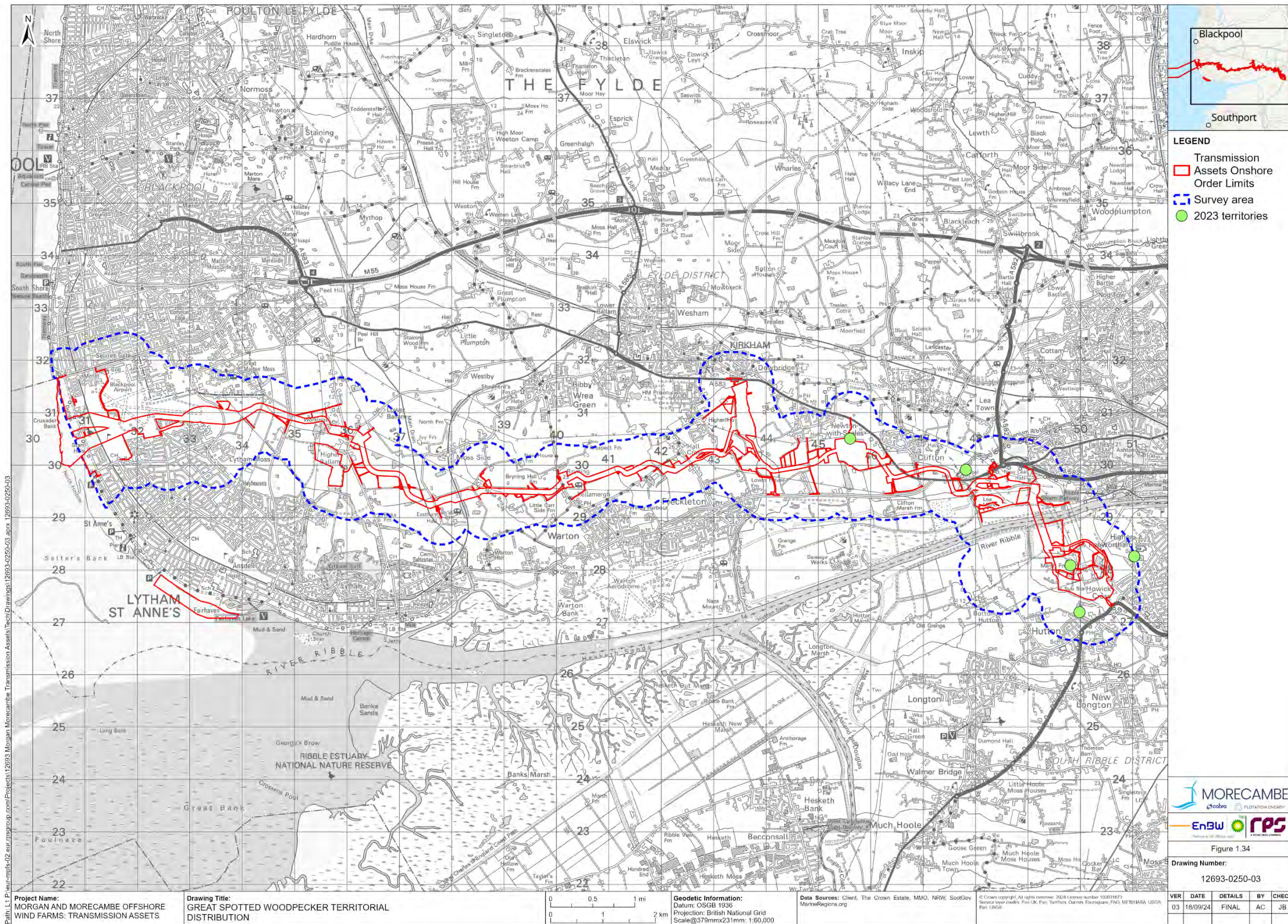


Figure 1.34: Great spotted woodpecker territorial distribution

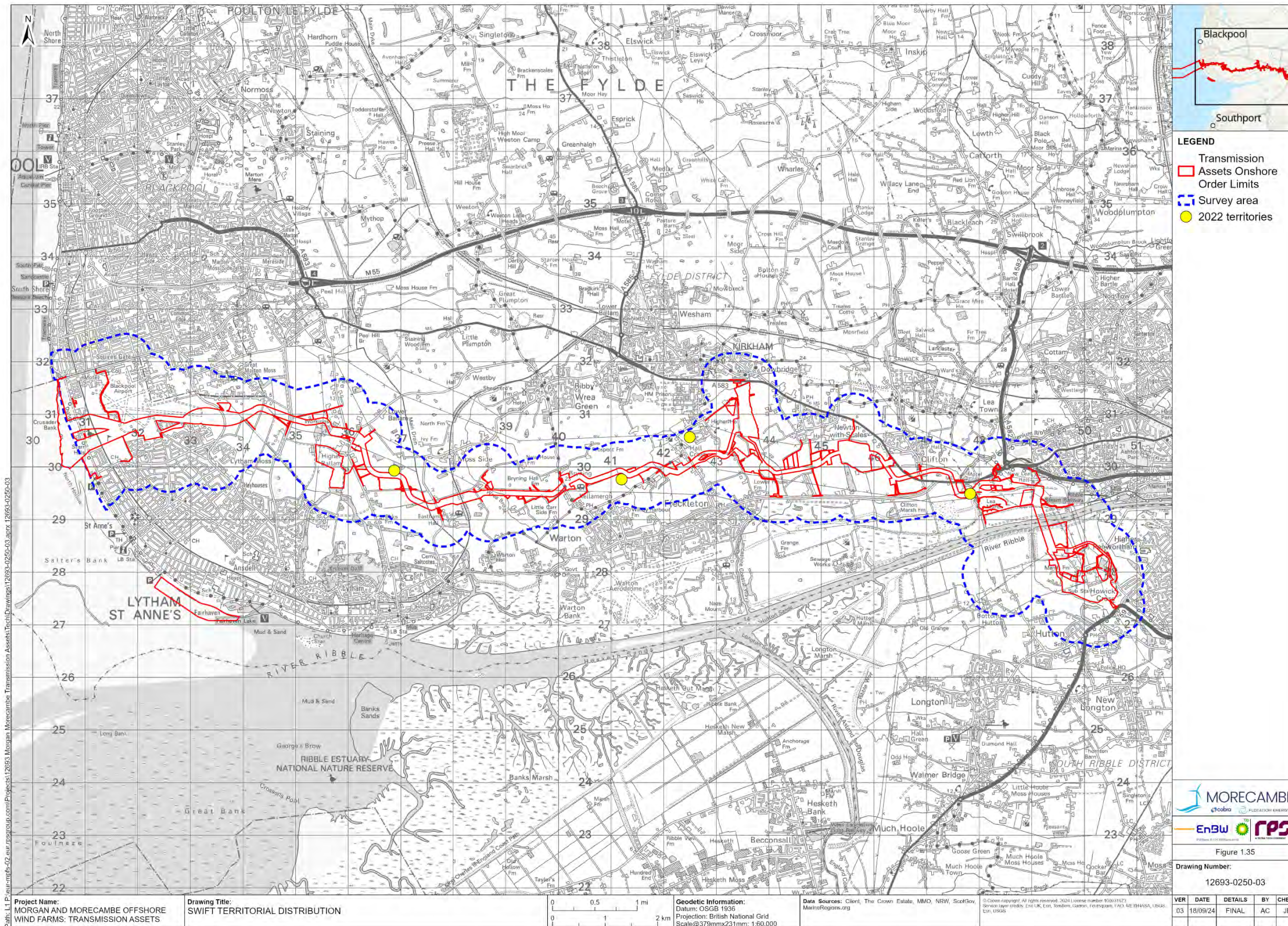


Figure 1.35: Swift territorial distribution

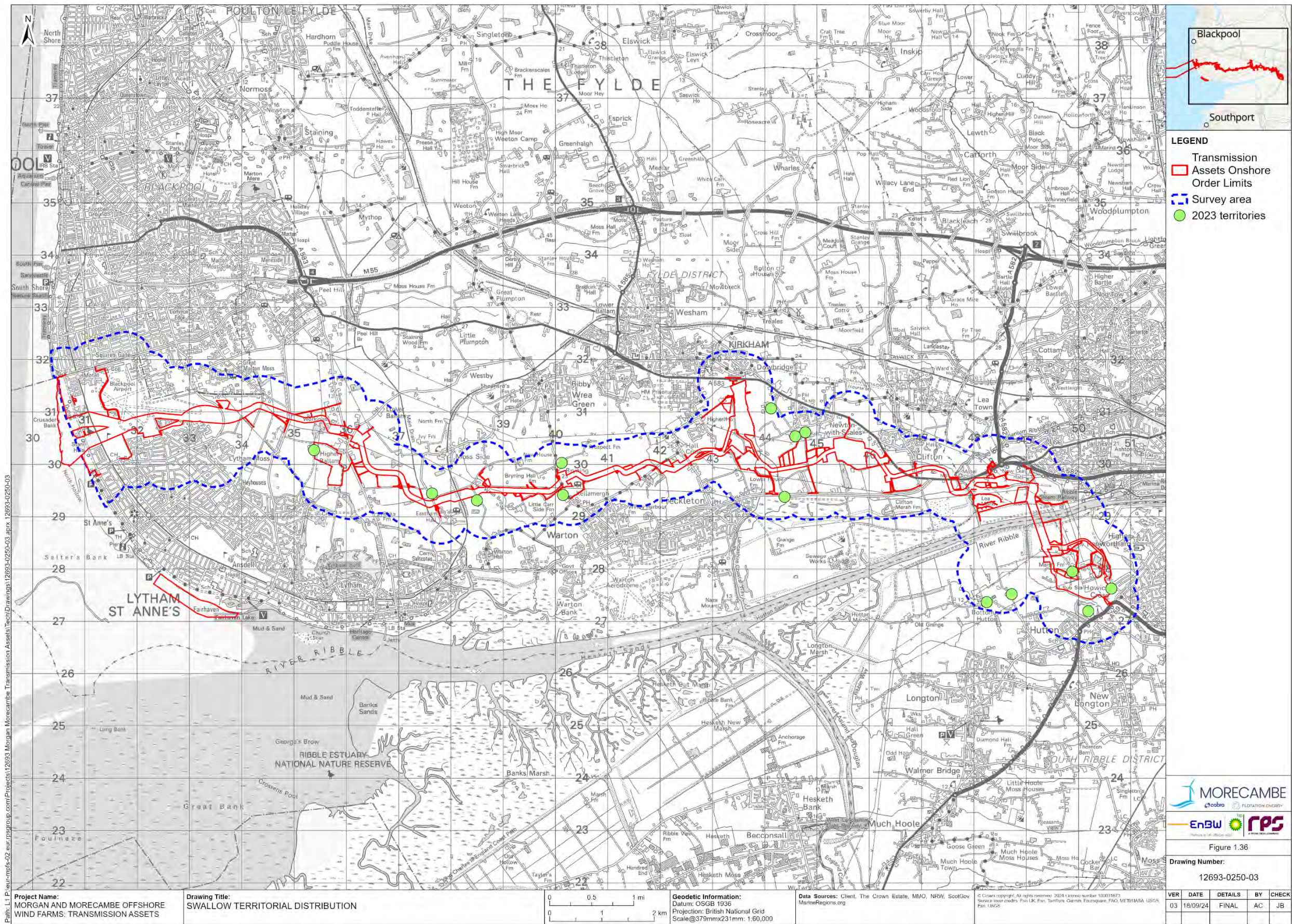


Figure 1.36: Swallow territorial distribution

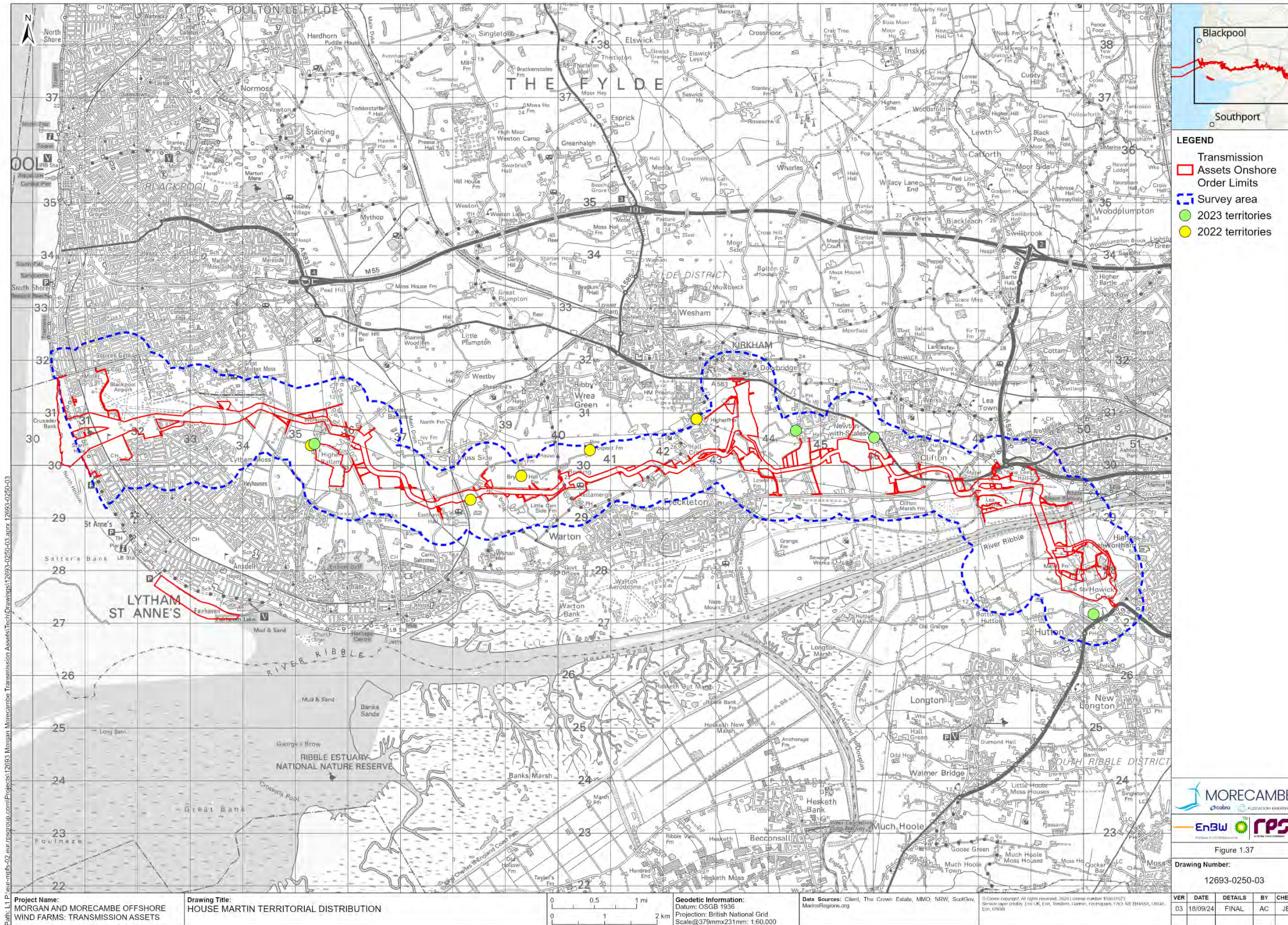


Figure 1.37: House martin territorial distribution

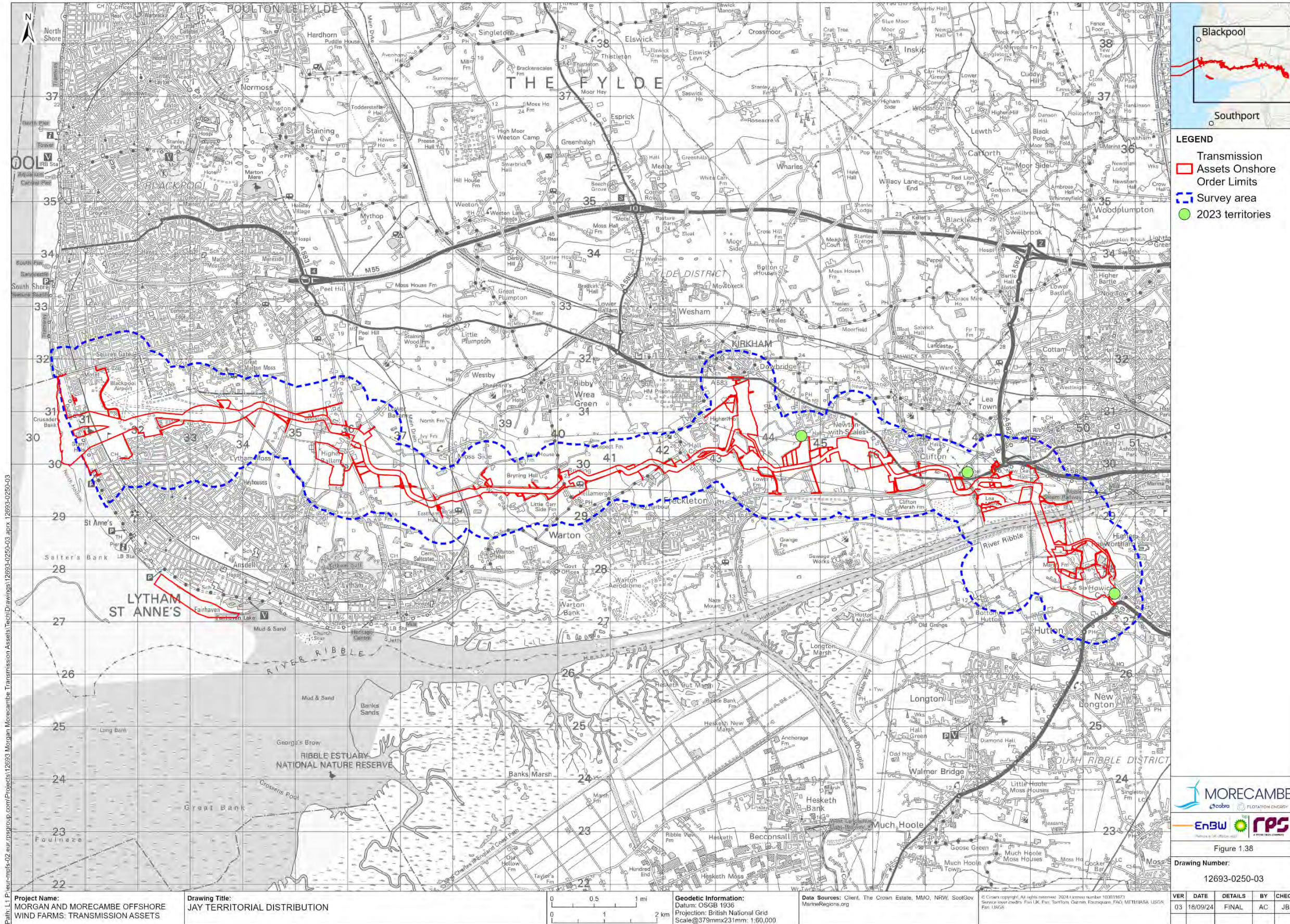


Figure 1.38: Jay territorial distribution

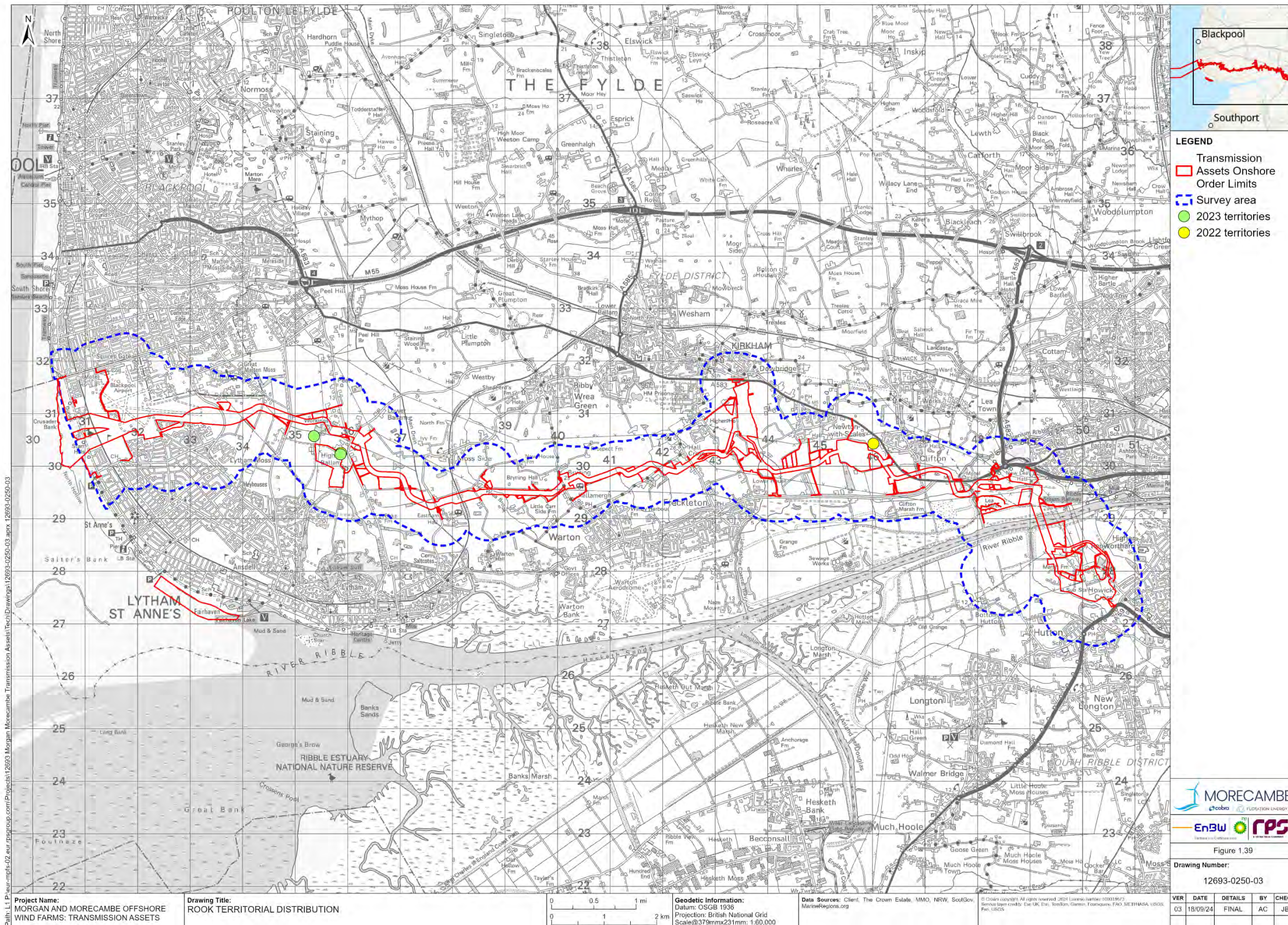


Figure 1.39: Rook territorial distribution

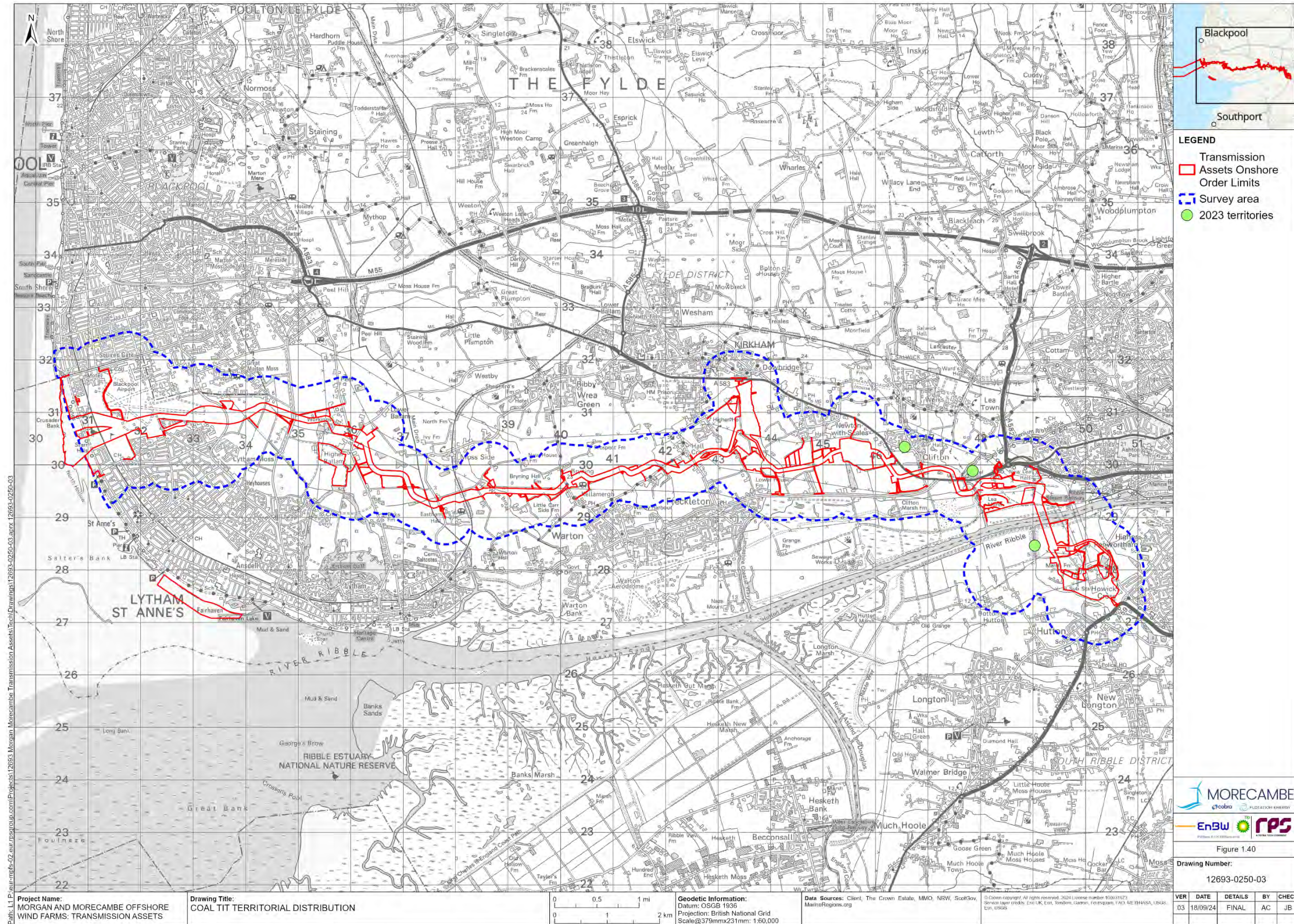


Figure 1.40: Coal tit territorial distribution

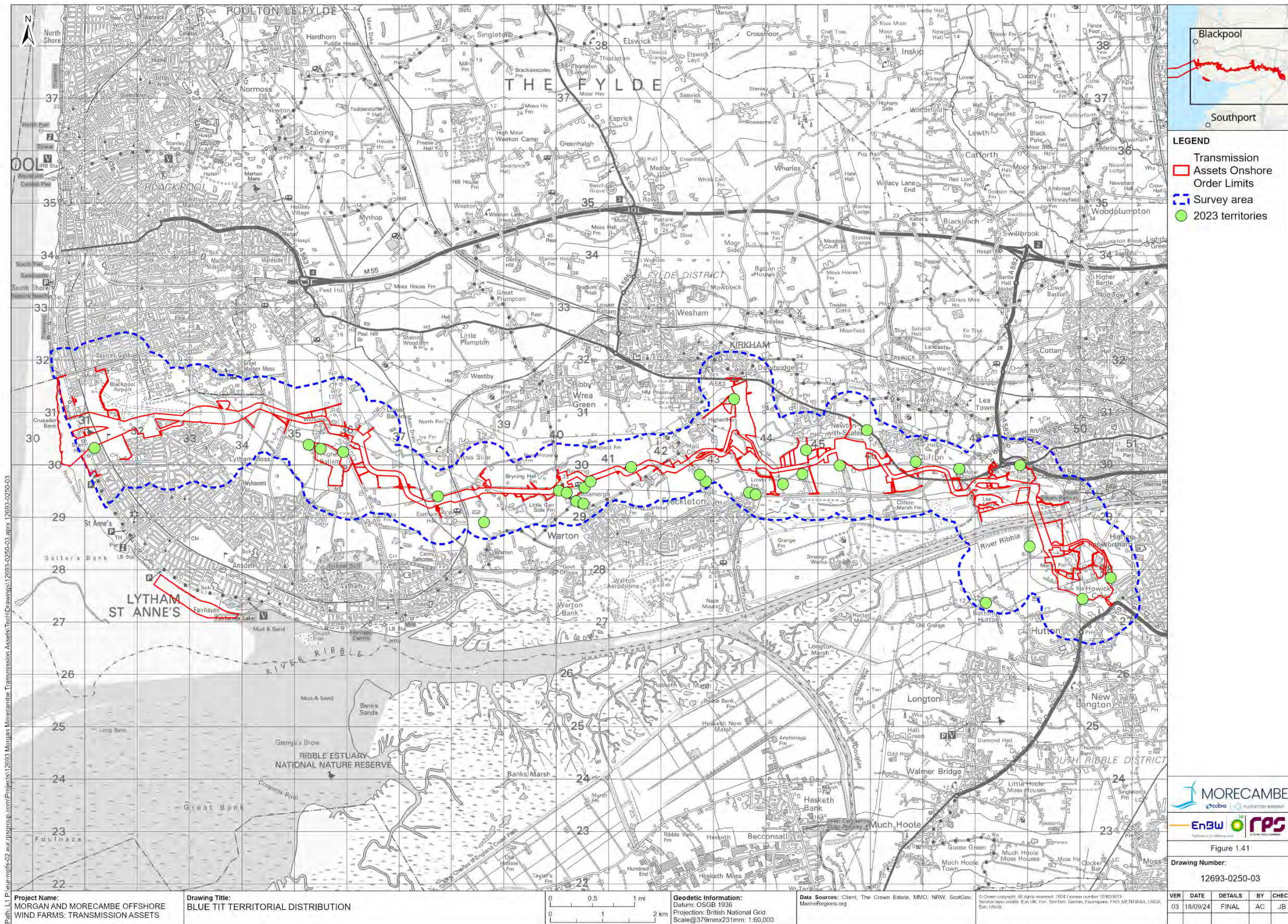


Figure 1.41: Blue tit territorial distribution

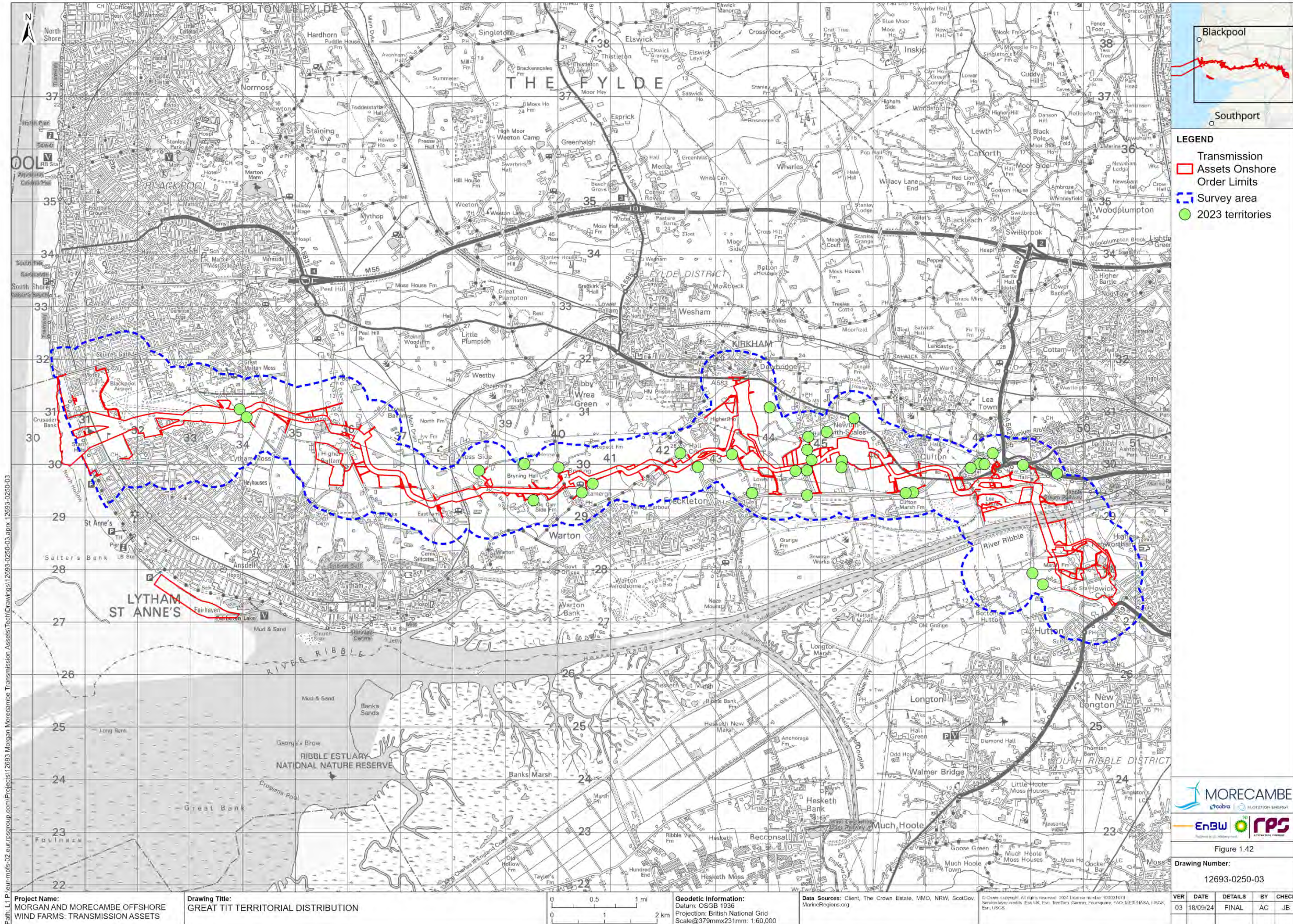


Figure 1.42: Great tit territorial distribution

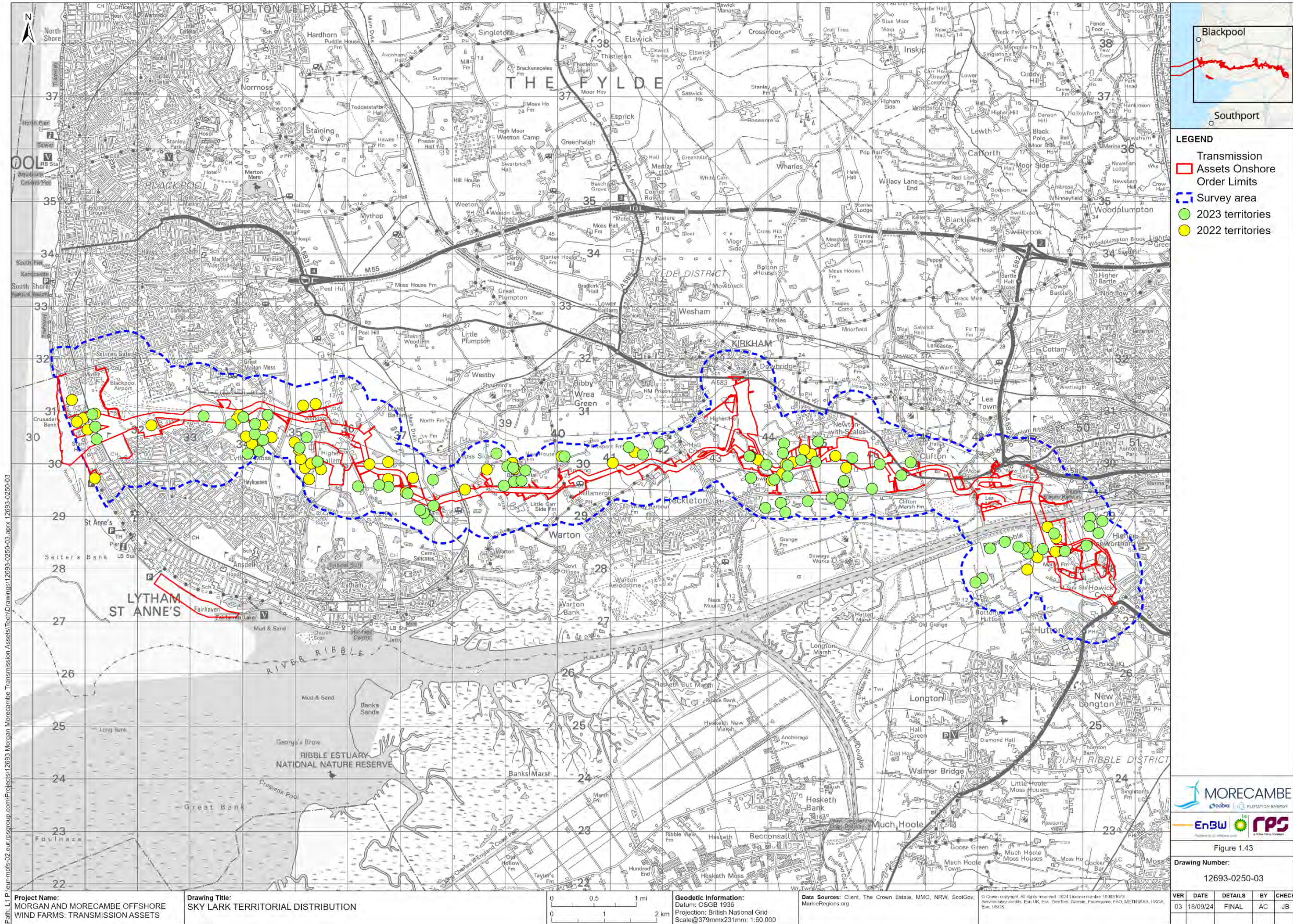


Figure 1.43: Skylark territorial distribution

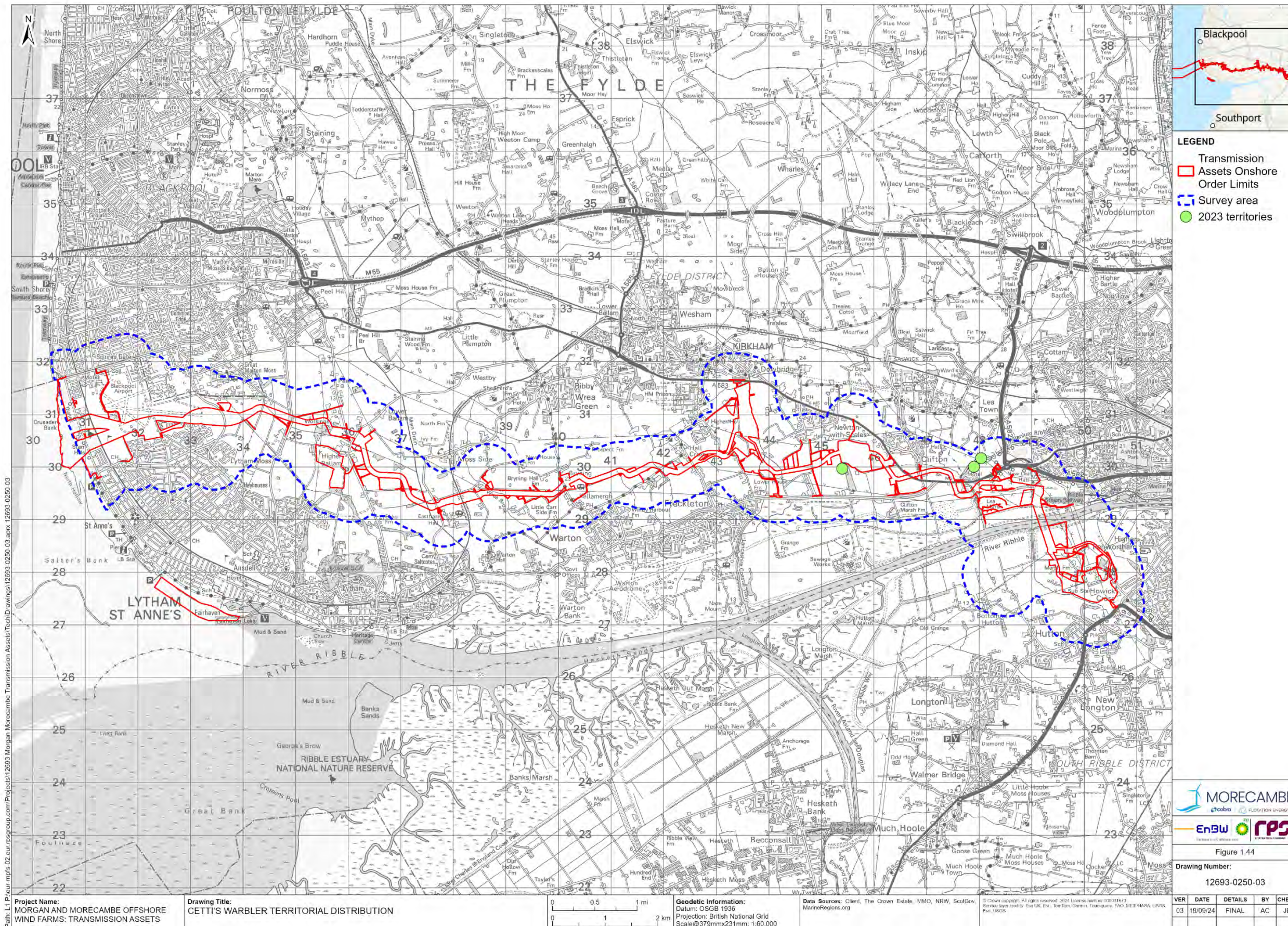


Figure 1.44: Cetti's warbler territorial distribution

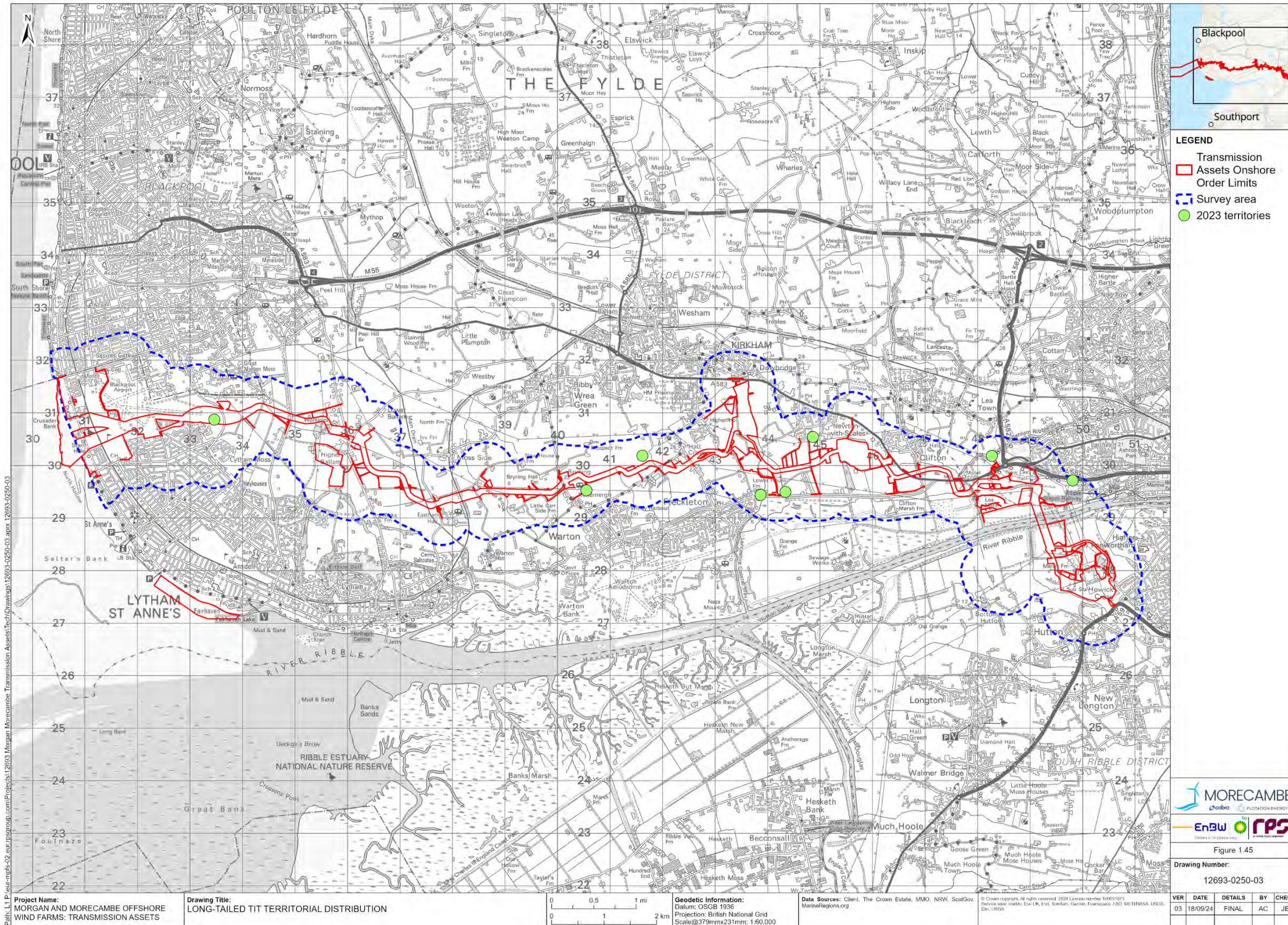


Figure 1.45: Long-tailed tit territorial distribution

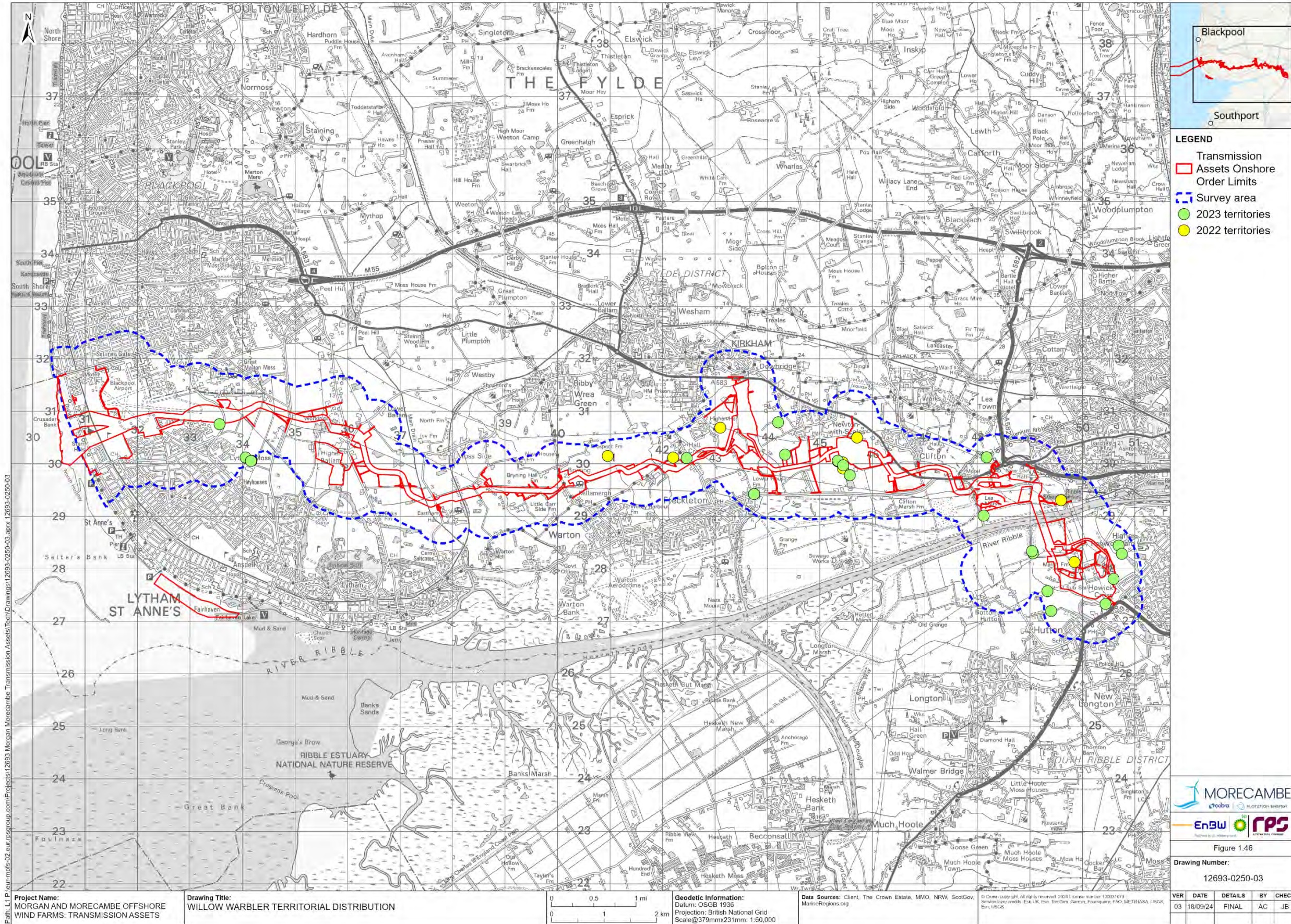


Figure 1.46: Willow warbler territorial distribution

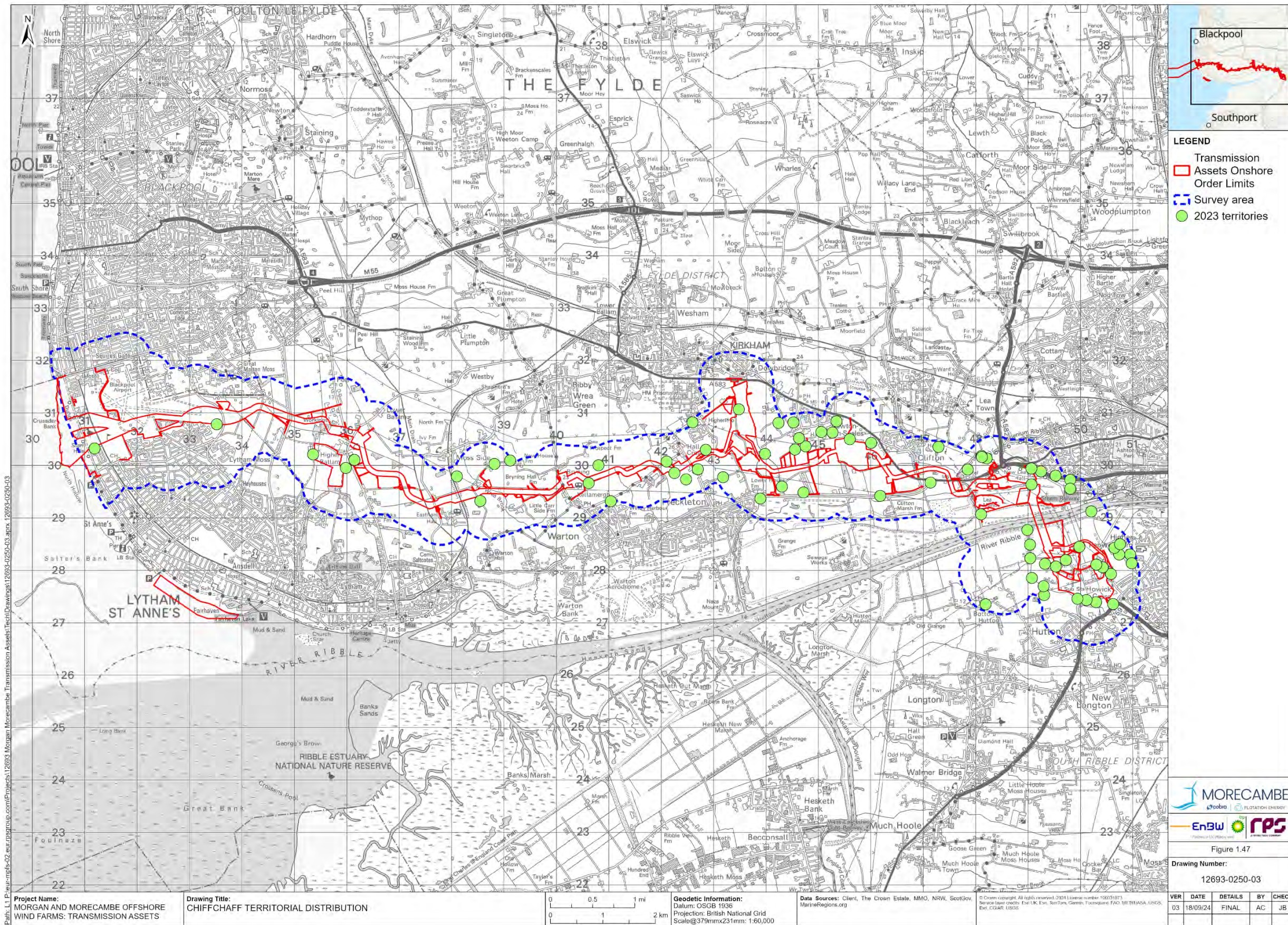


Figure 1.47: Chiffchaff territorial distribution

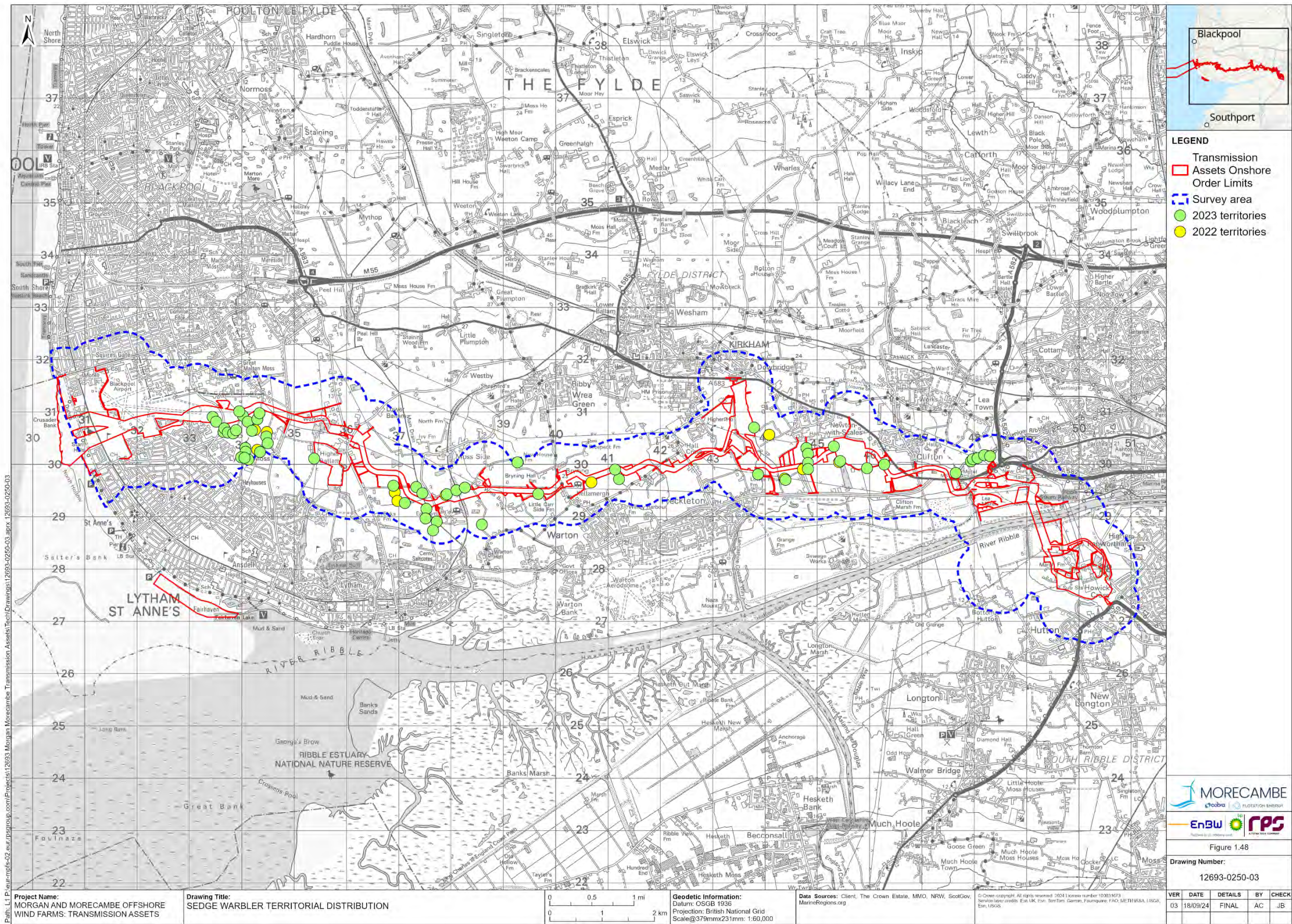


Figure 1.48: Sedge warbler territorial distribution

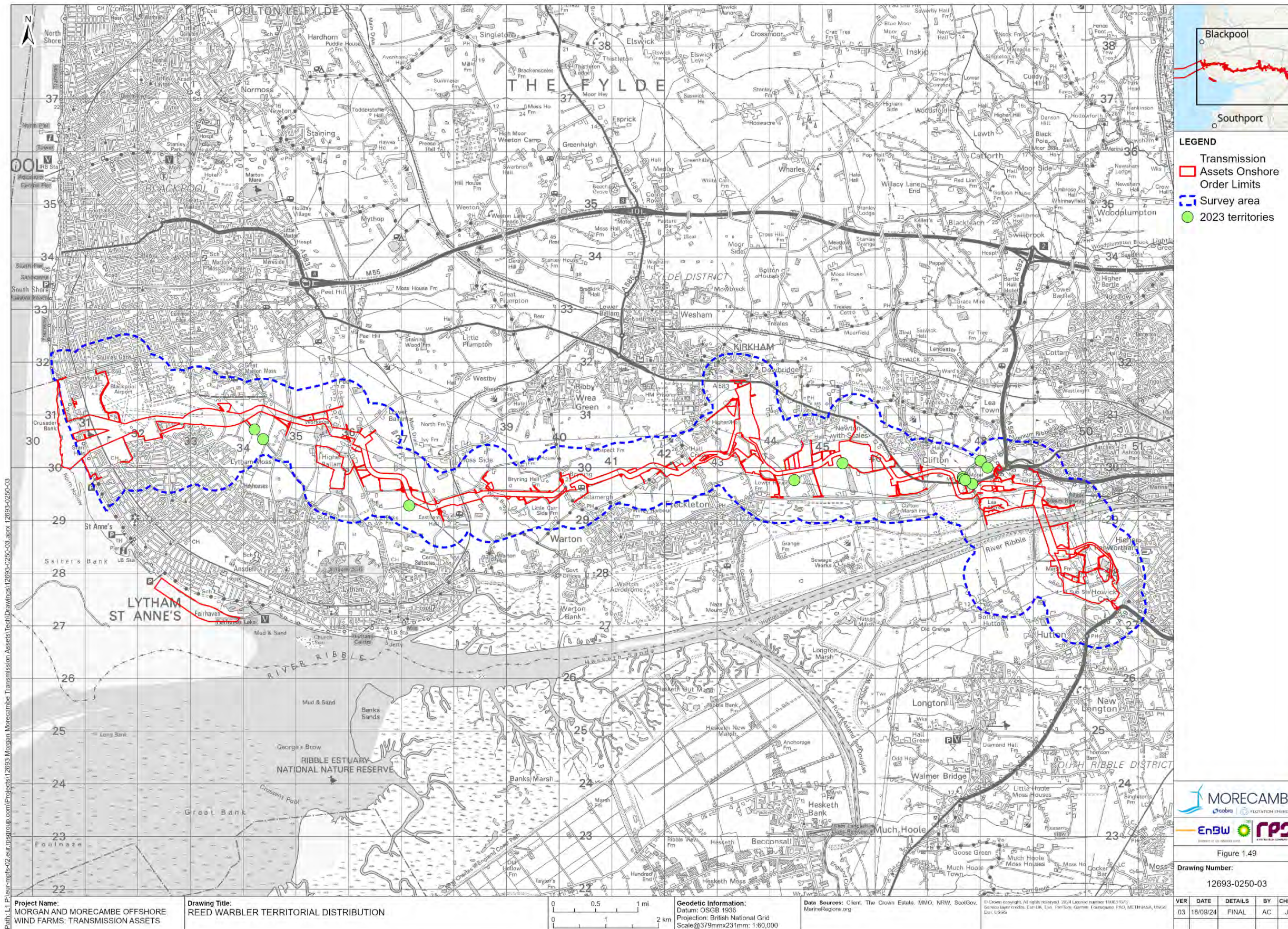


Figure 1.49: Reed warbler territorial distribution

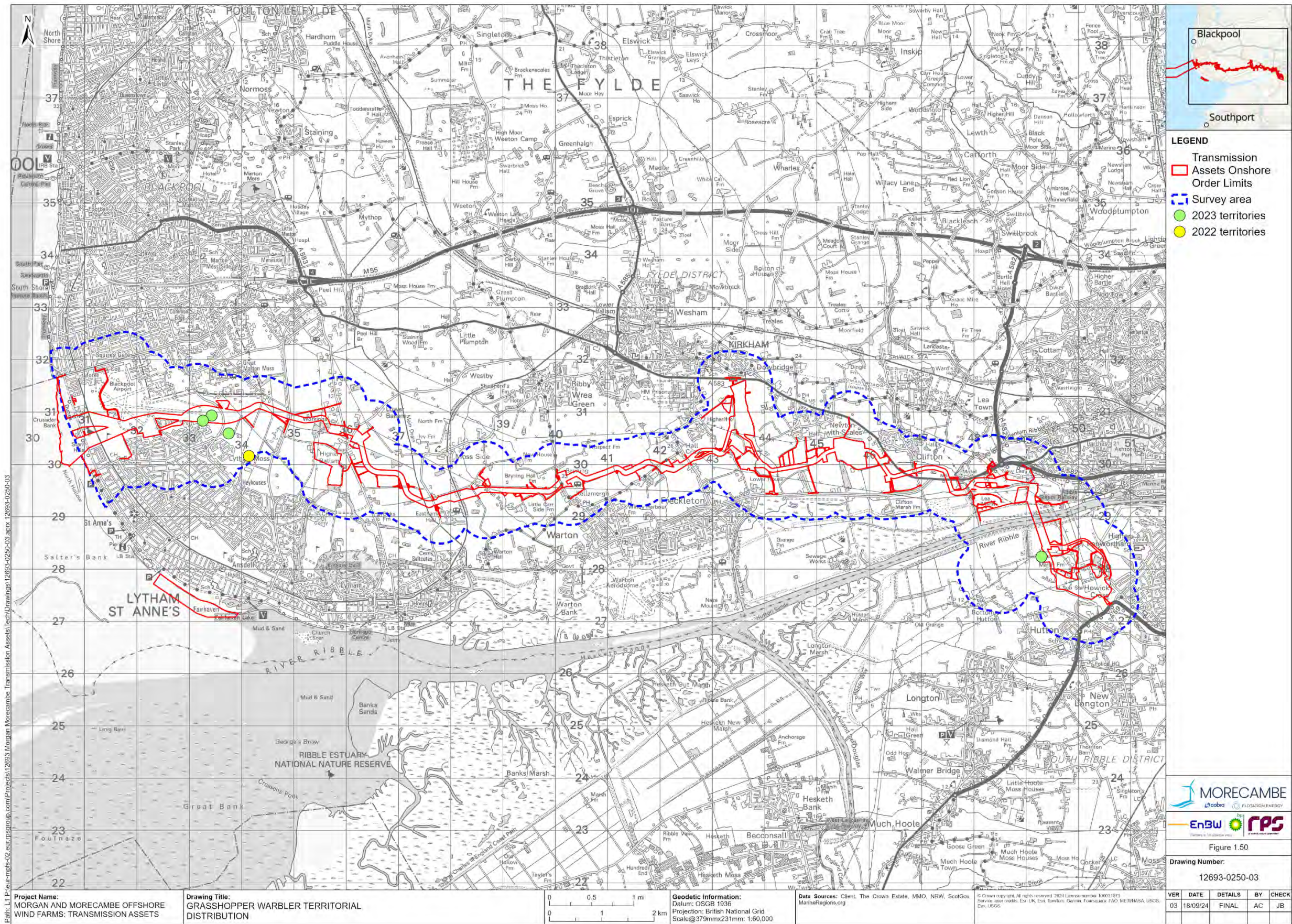


Figure 1.50: Grasshopper warbler territorial distribution

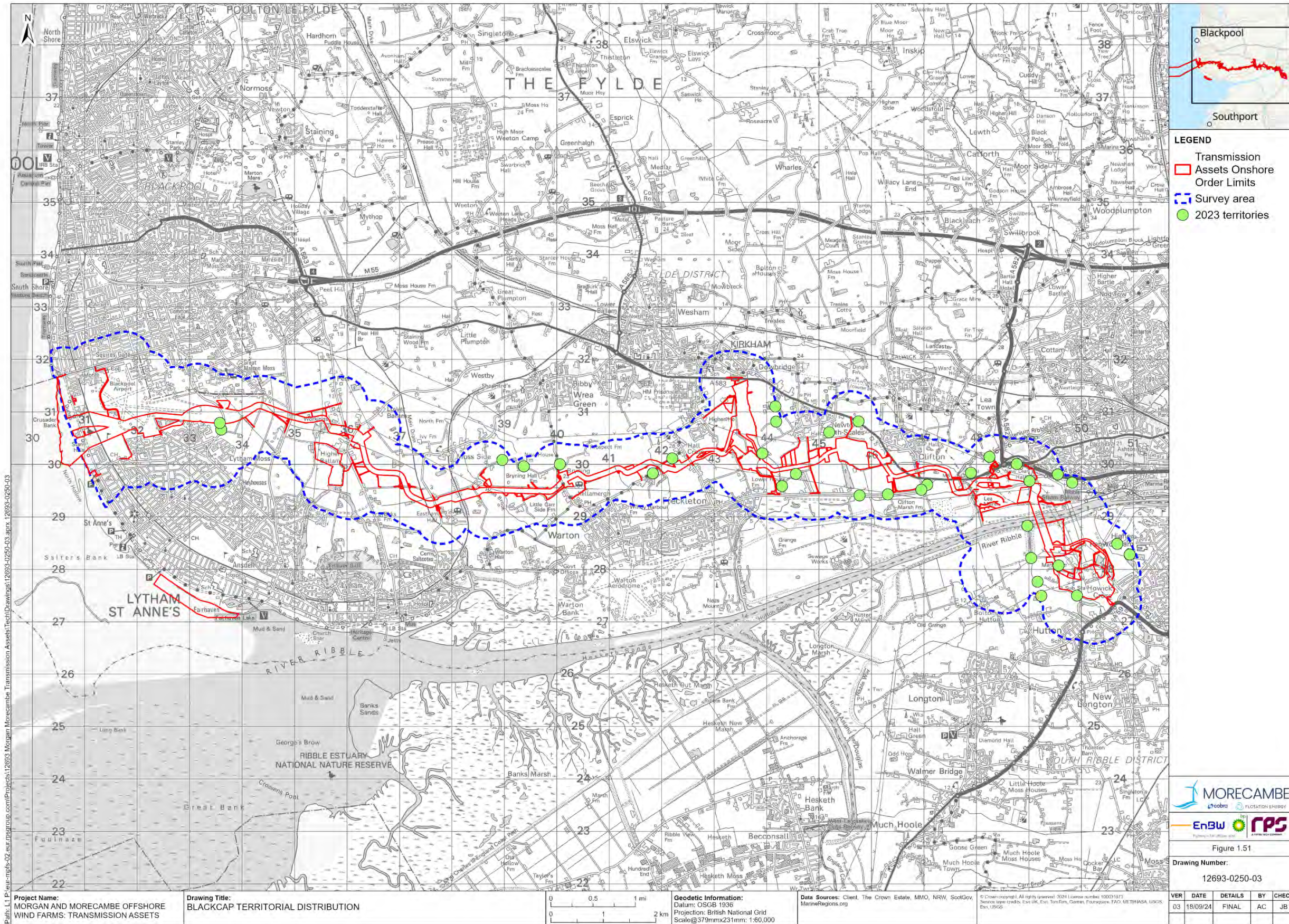


Figure 1.51: Blackcap territorial distribution

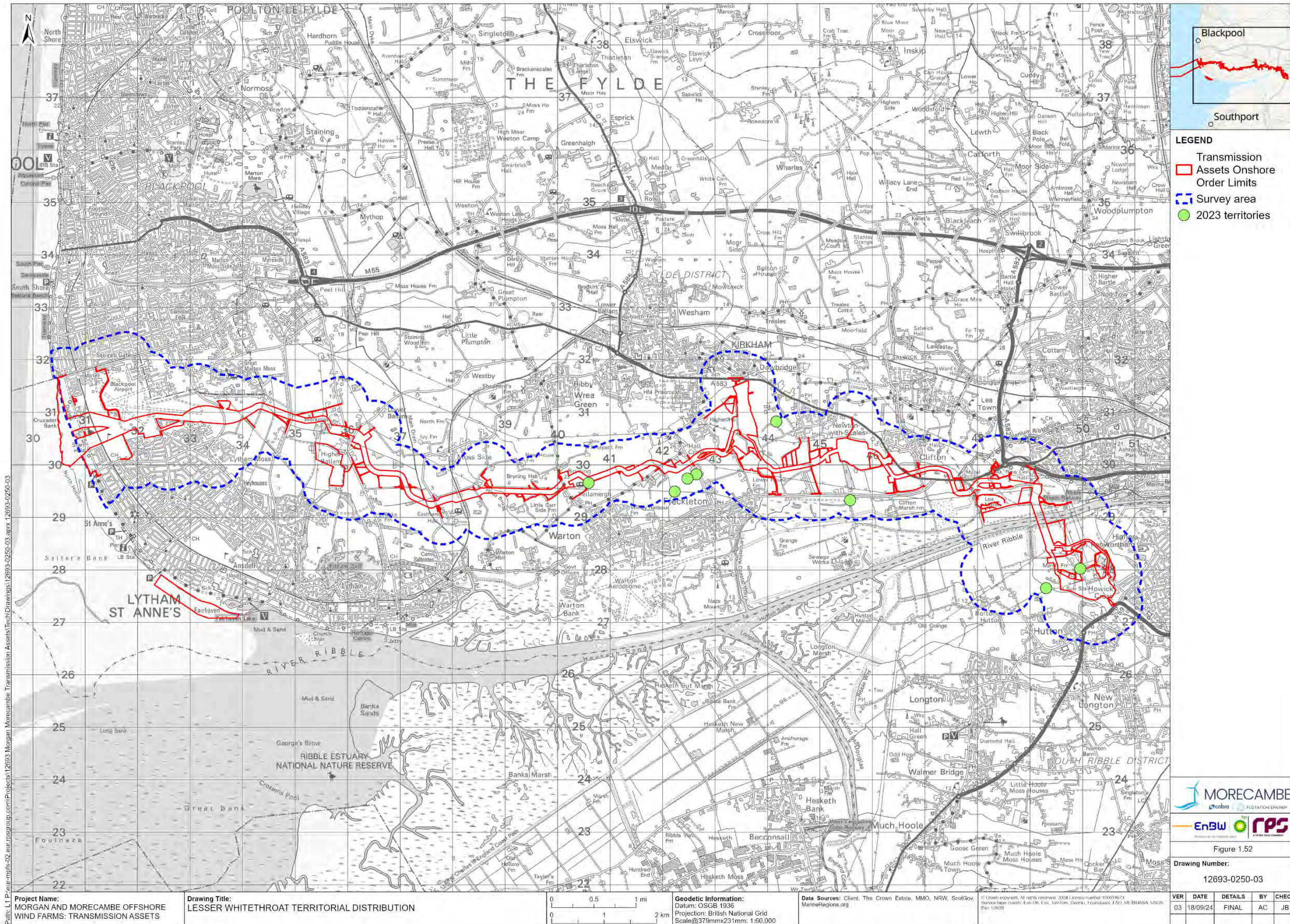


Figure 1.52: Lesser whitethroat territorial distribution

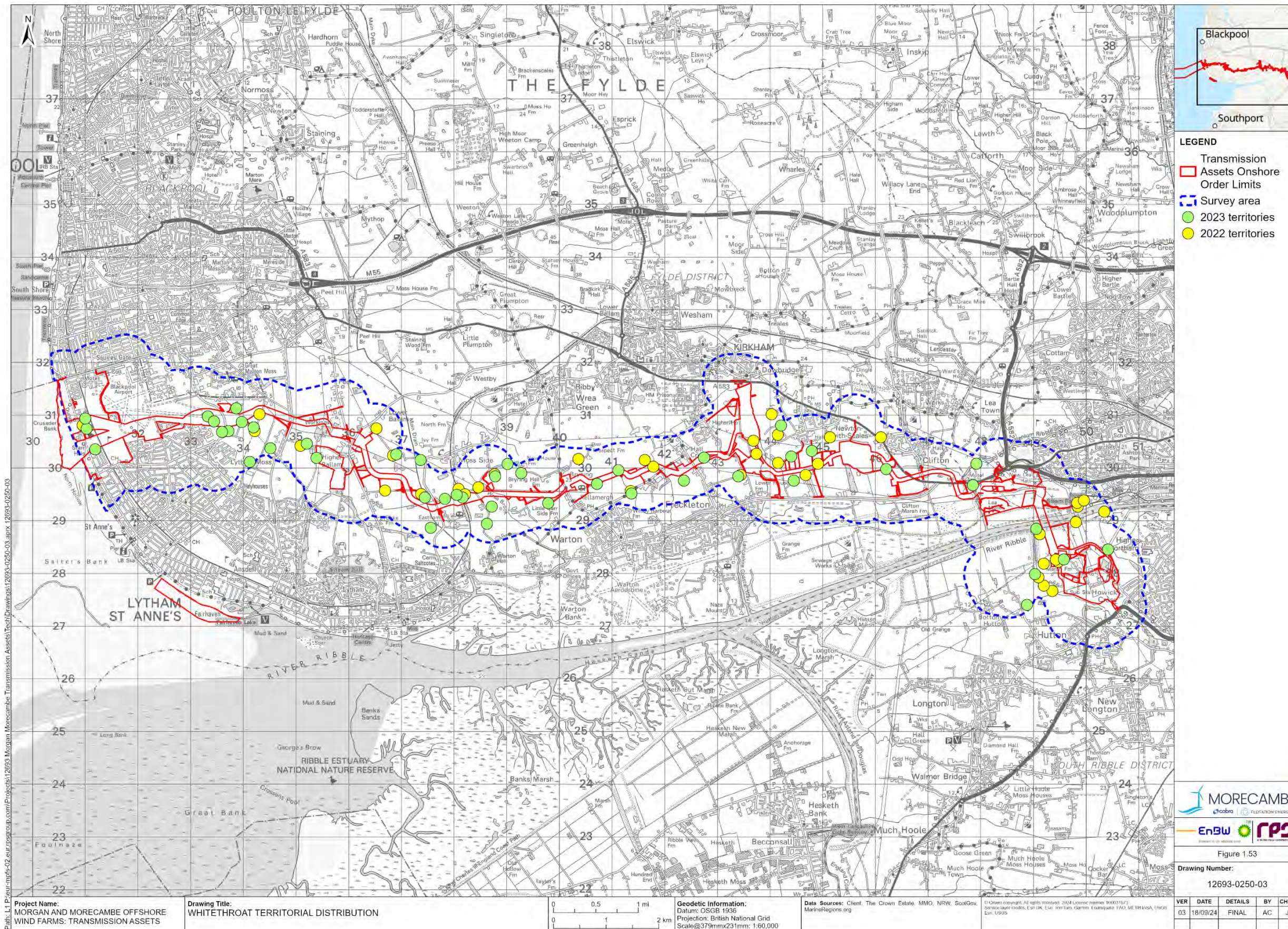


Figure 1.53: Whitethroat territorial distribution

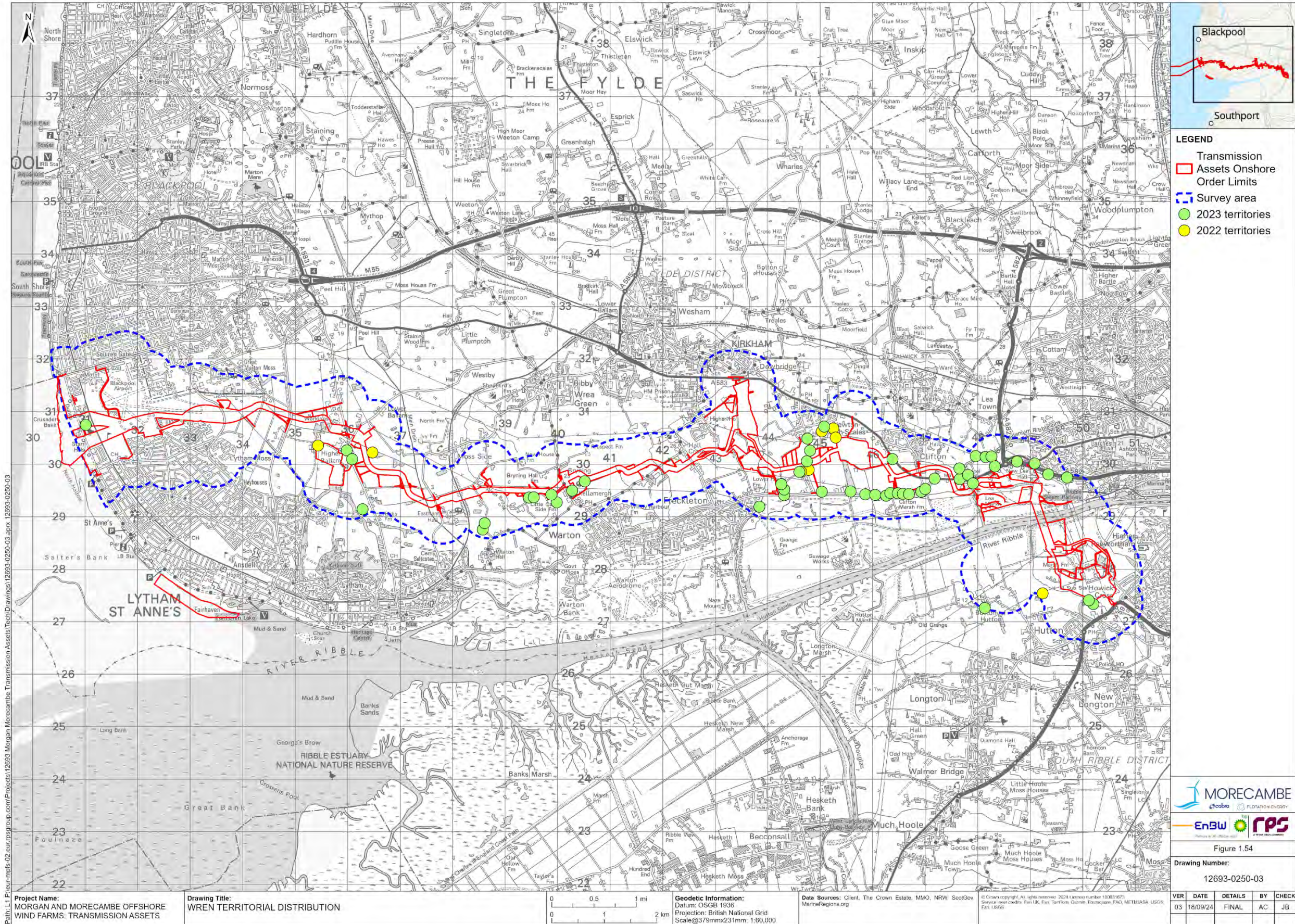


Figure 1.54: Wren territorial distribution

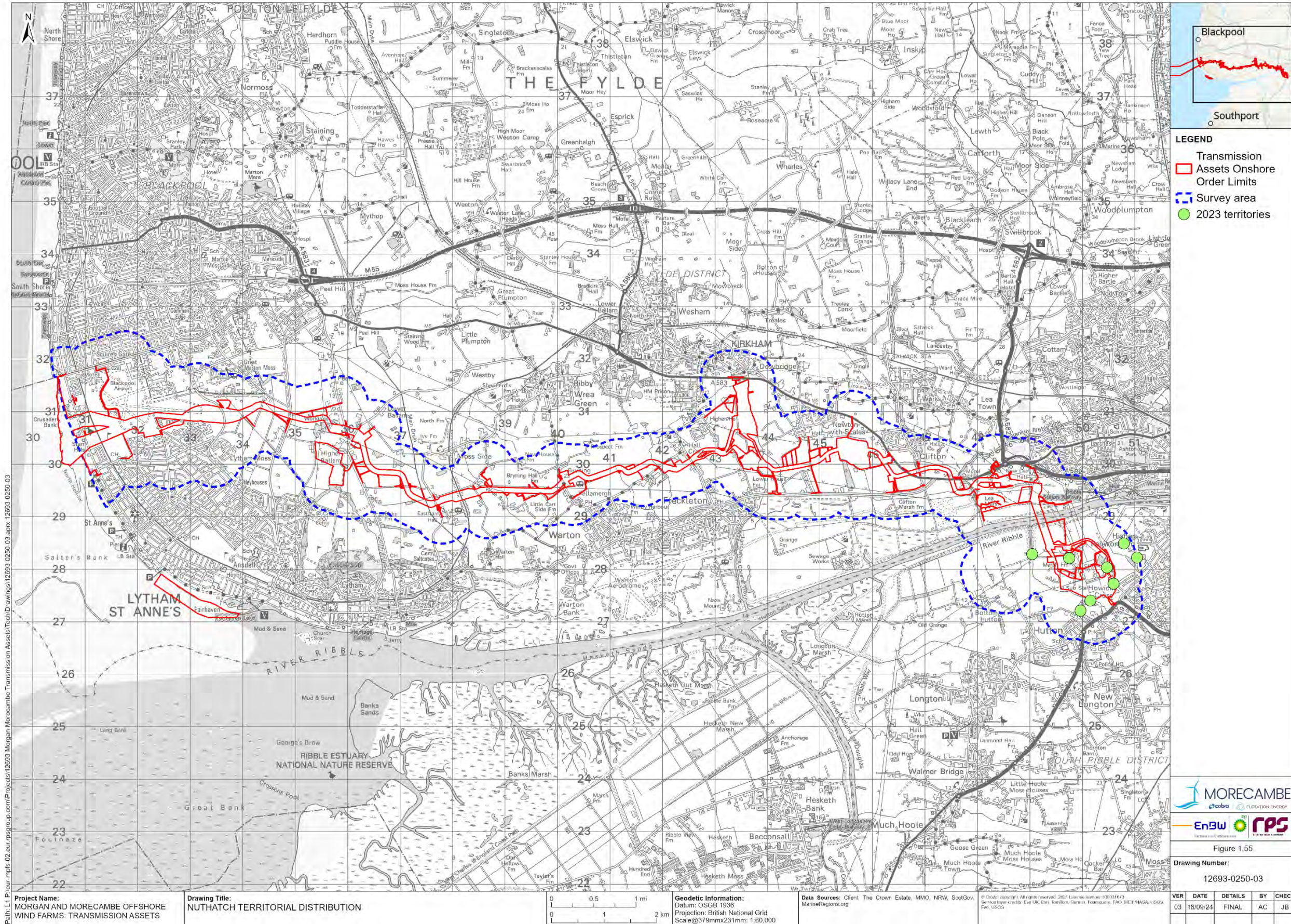


Figure 1.55: Nuthatch territorial distribution

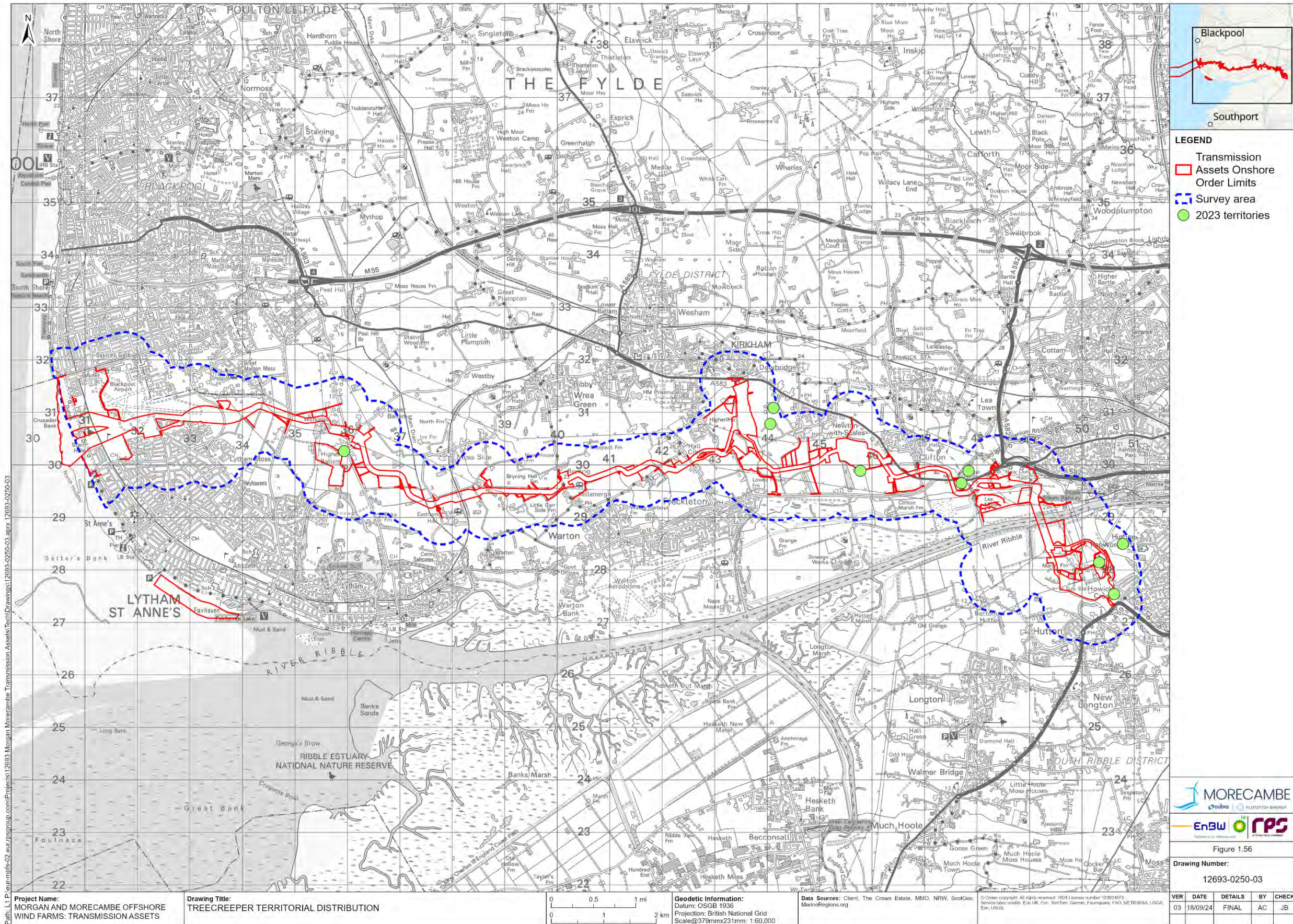


Figure 1.56: Treecreeper territorial distribution

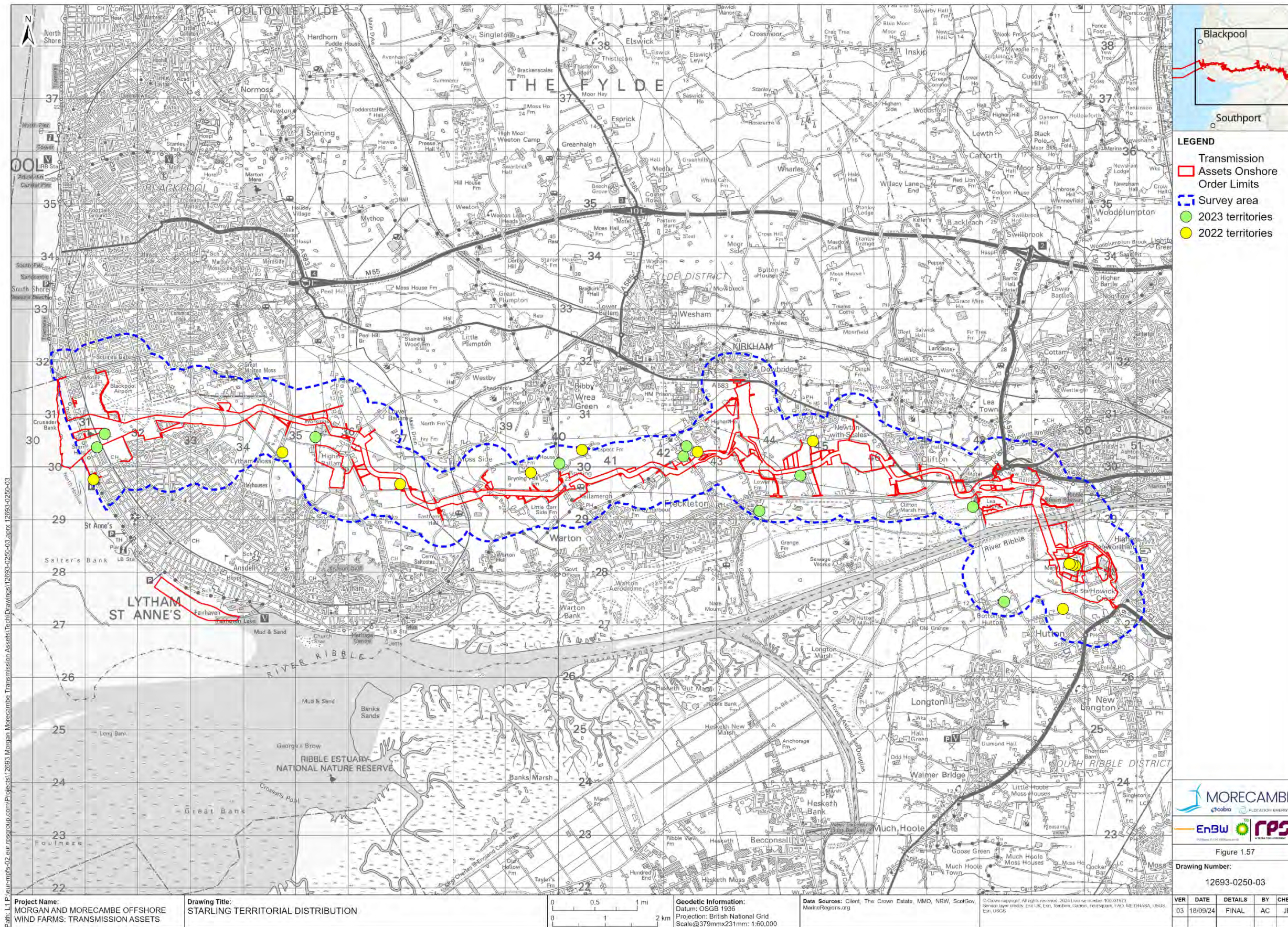


Figure 1.57: Starling territorial distribution

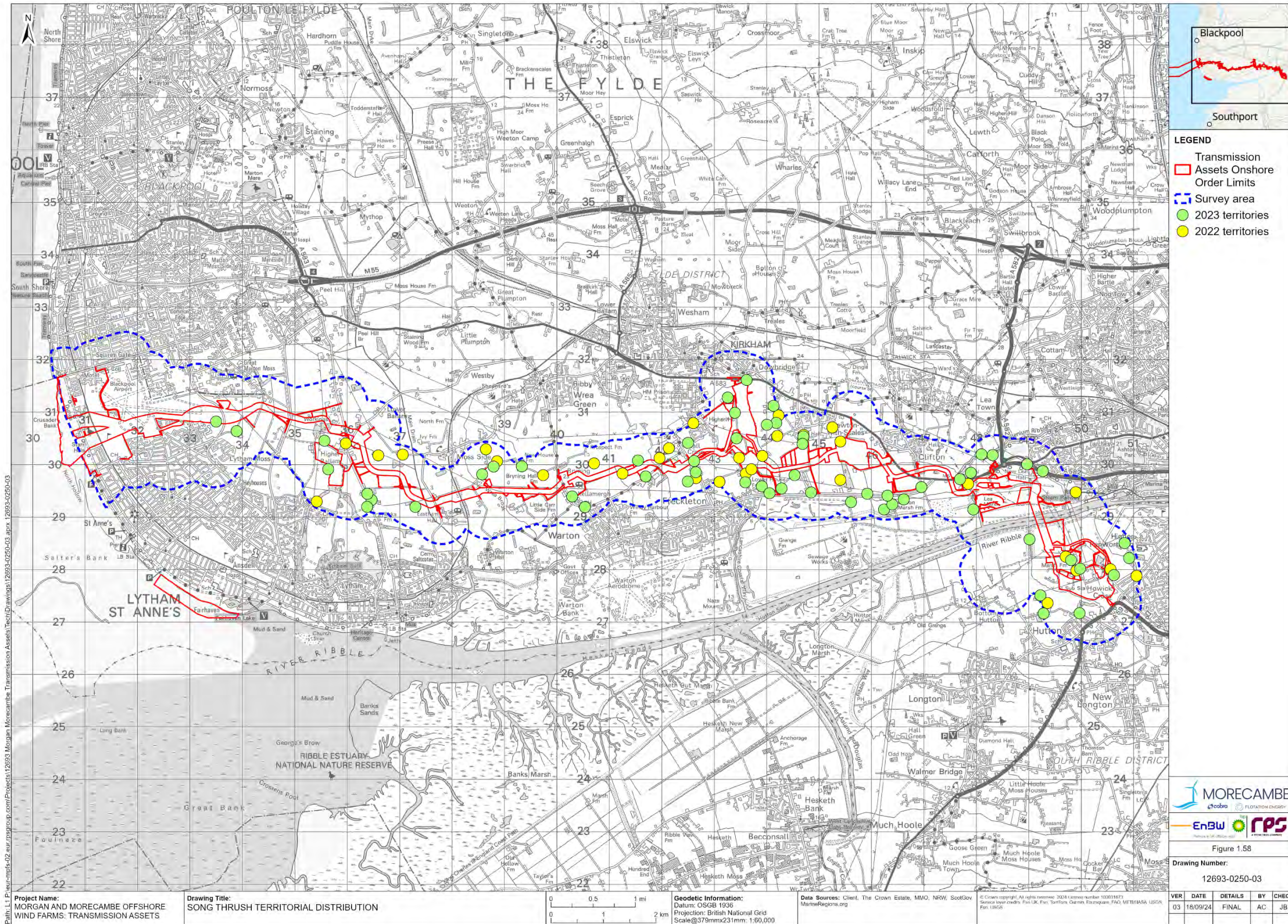


Figure 1.58: Song thrush territorial distribution

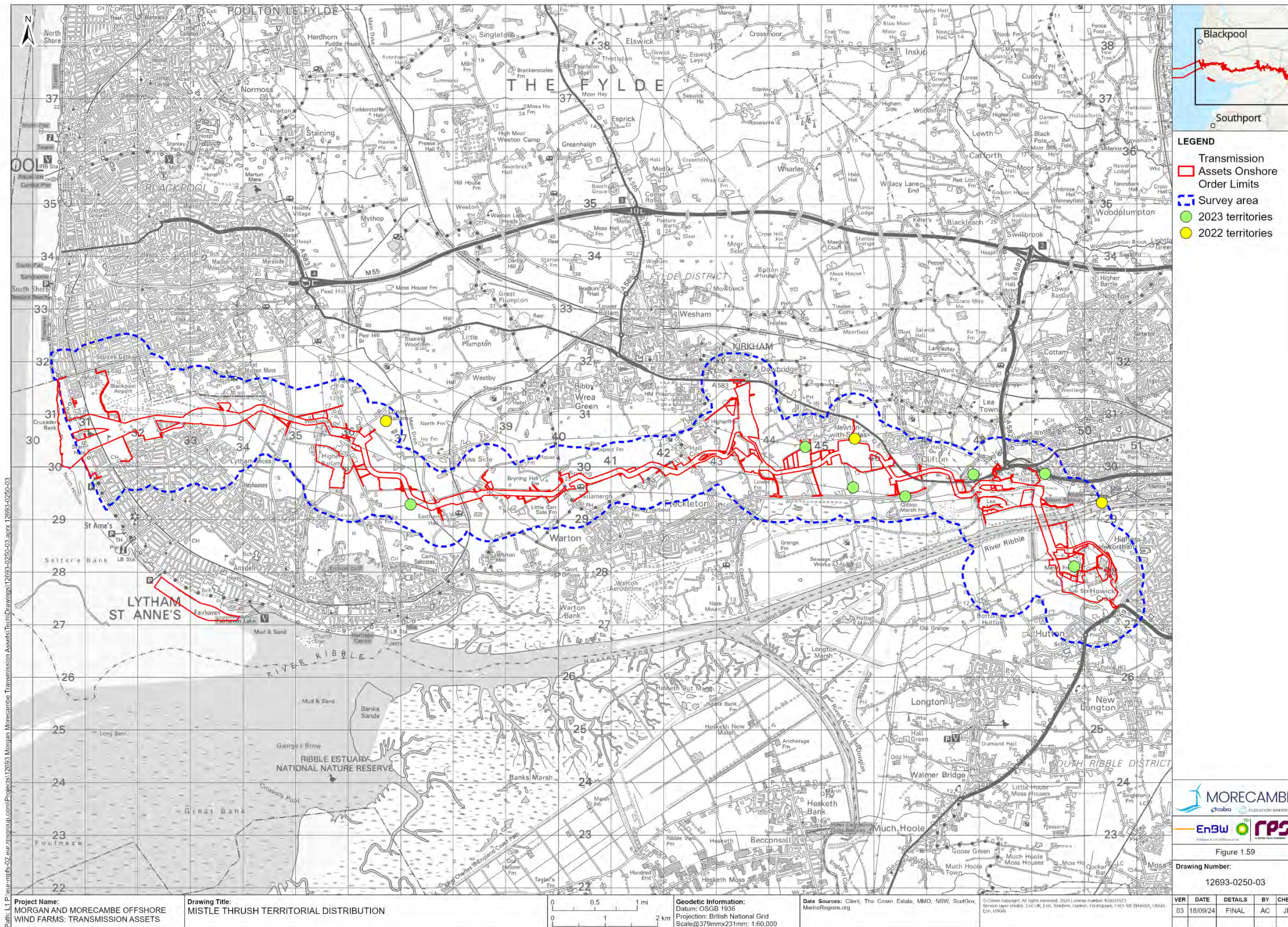


Figure 1.59: Mistle thrush territorial distribution

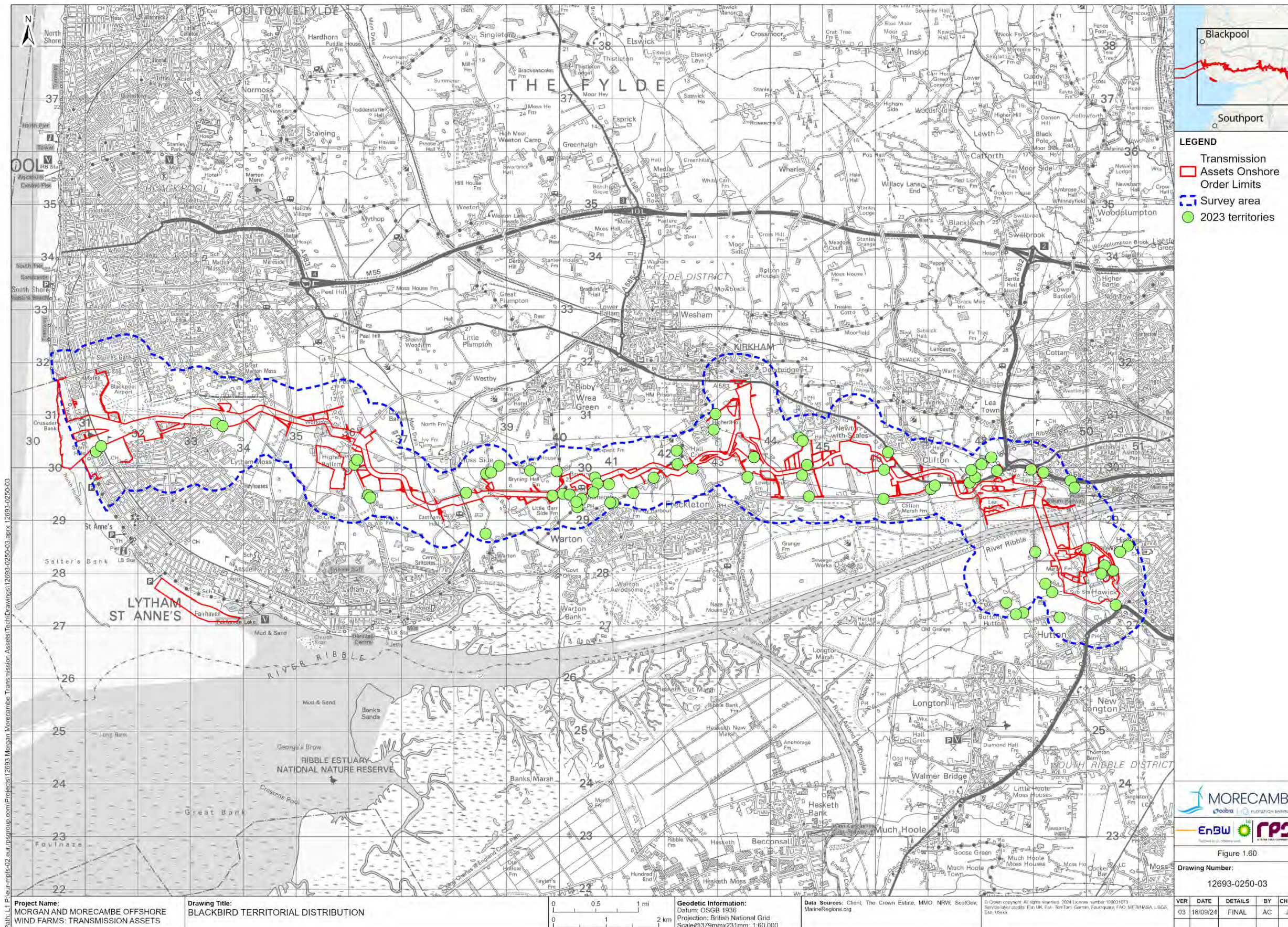


Figure 1.60: Blackbird territorial distribution

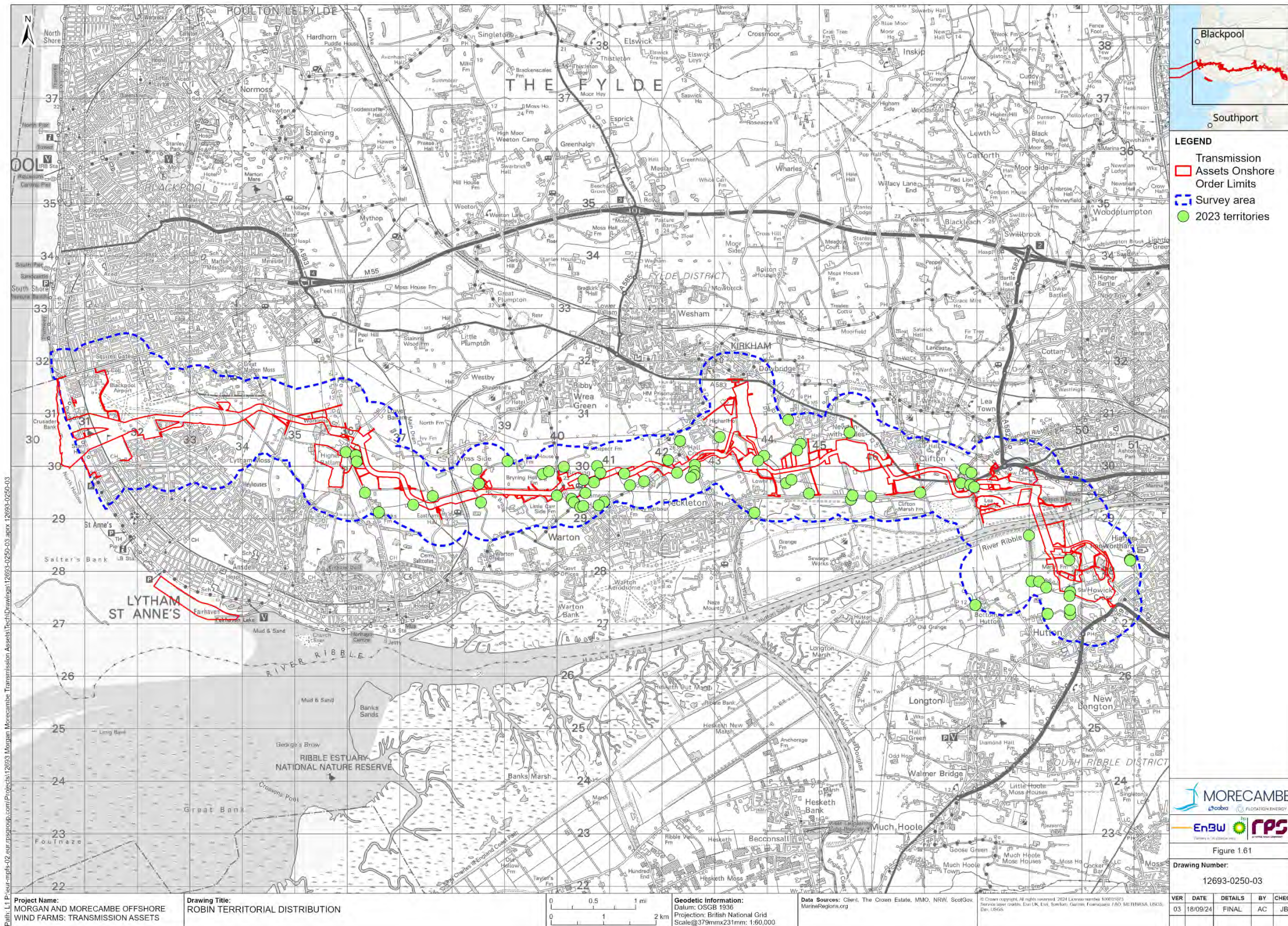


Figure 1.61: Robin territorial distribution

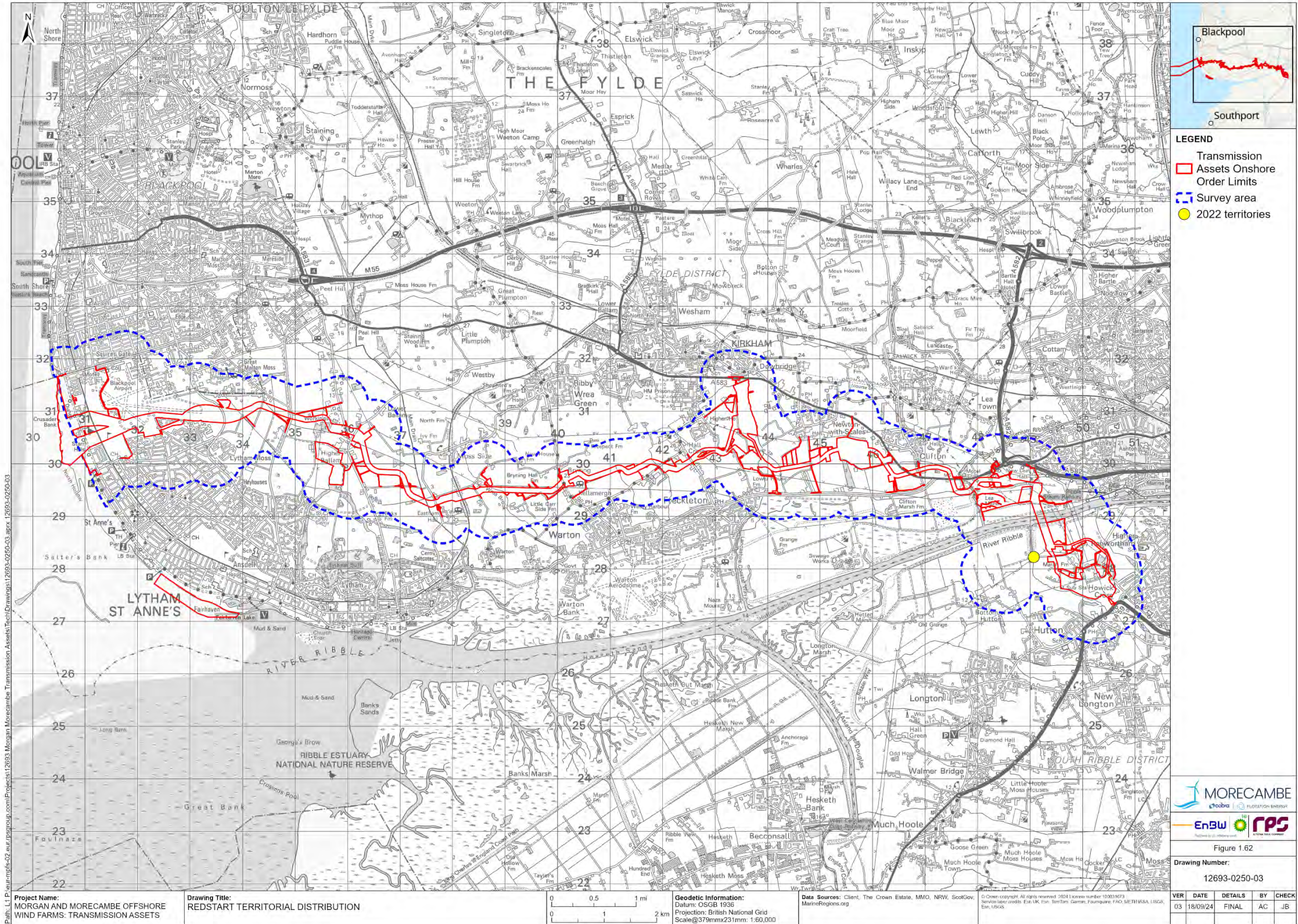


Figure 1.62: Redstart territorial distribution

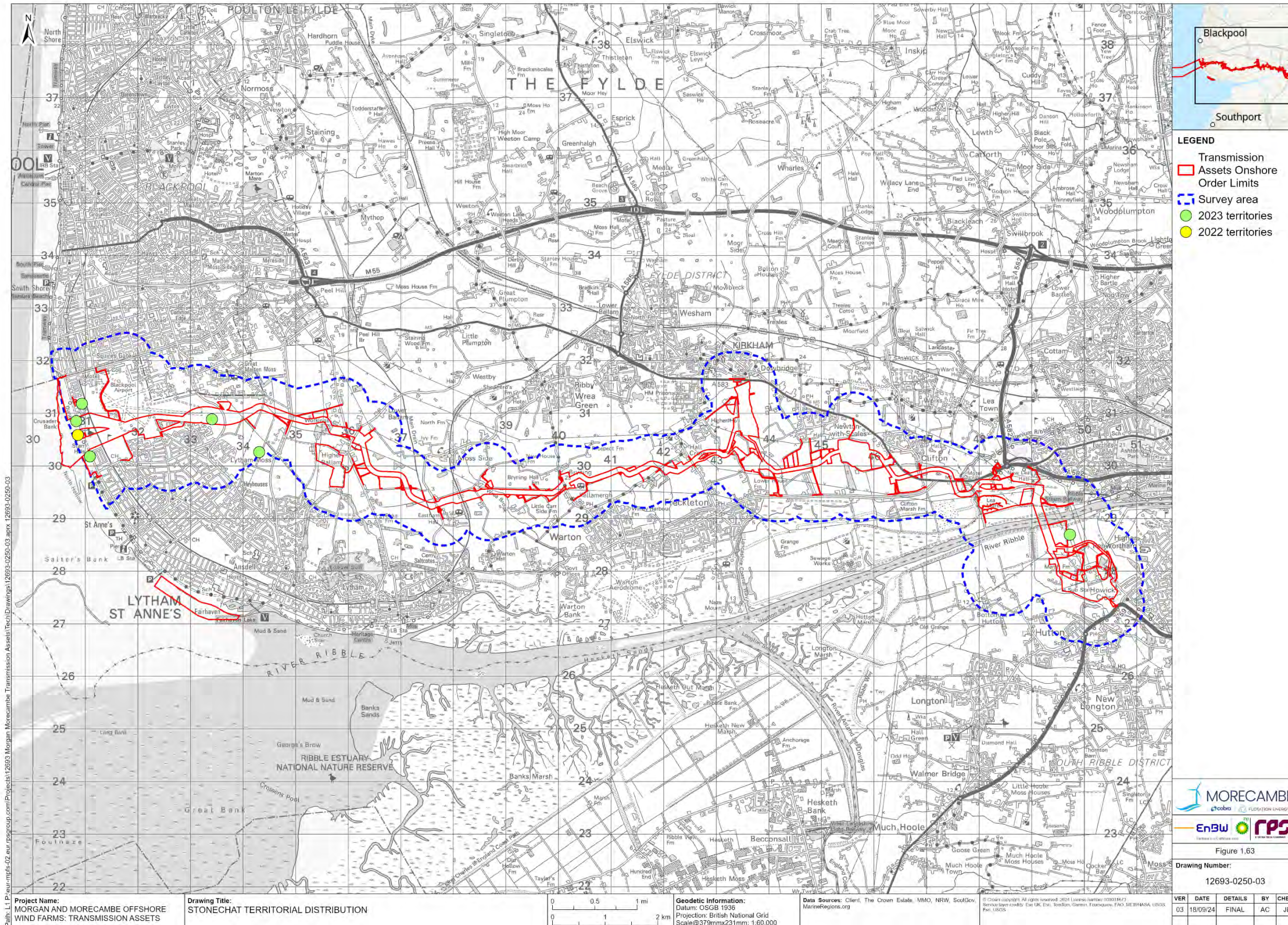


Figure 1.63: Stonechat territorial distribution

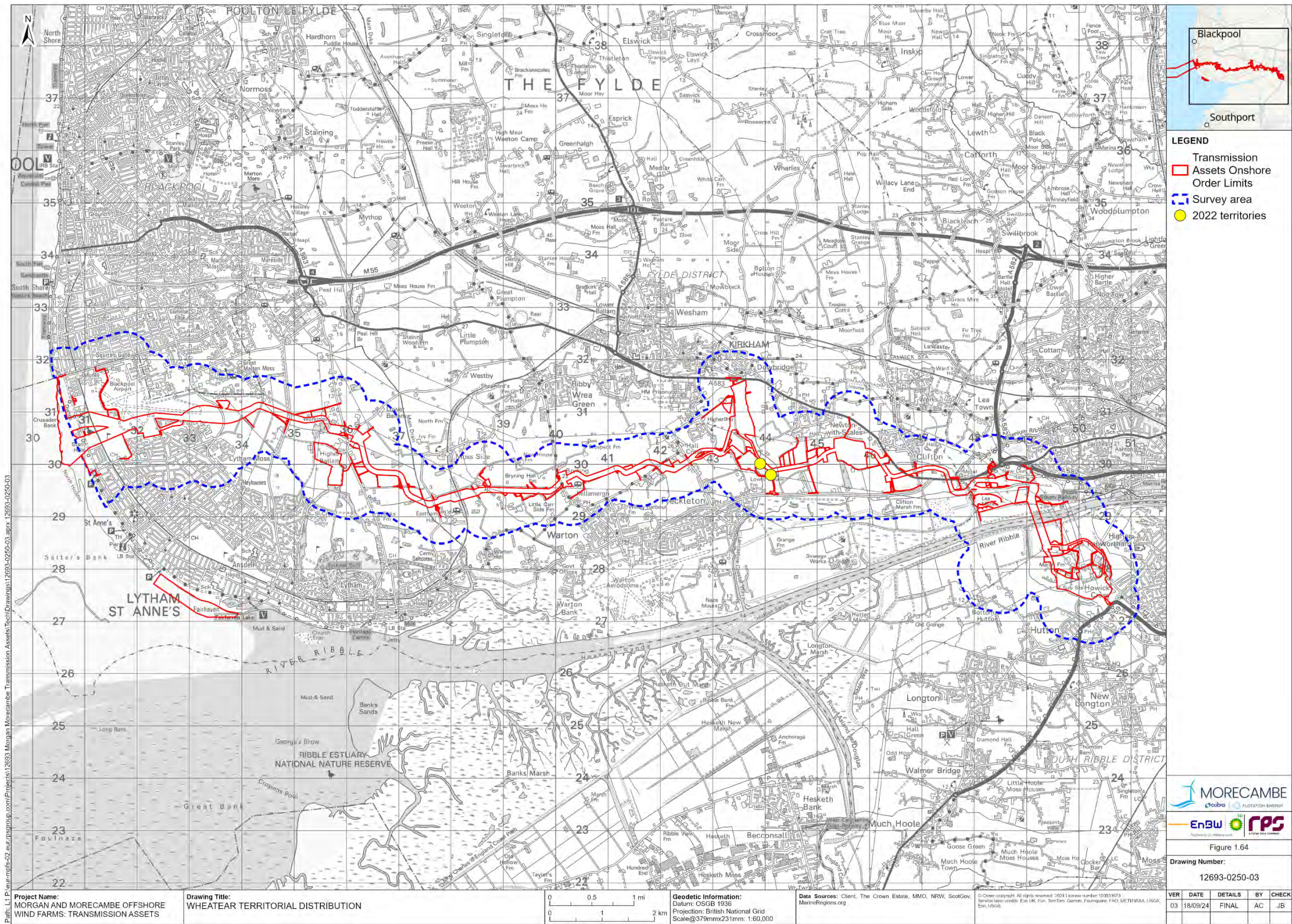


Figure 1.64: Wheatear territorial distribution

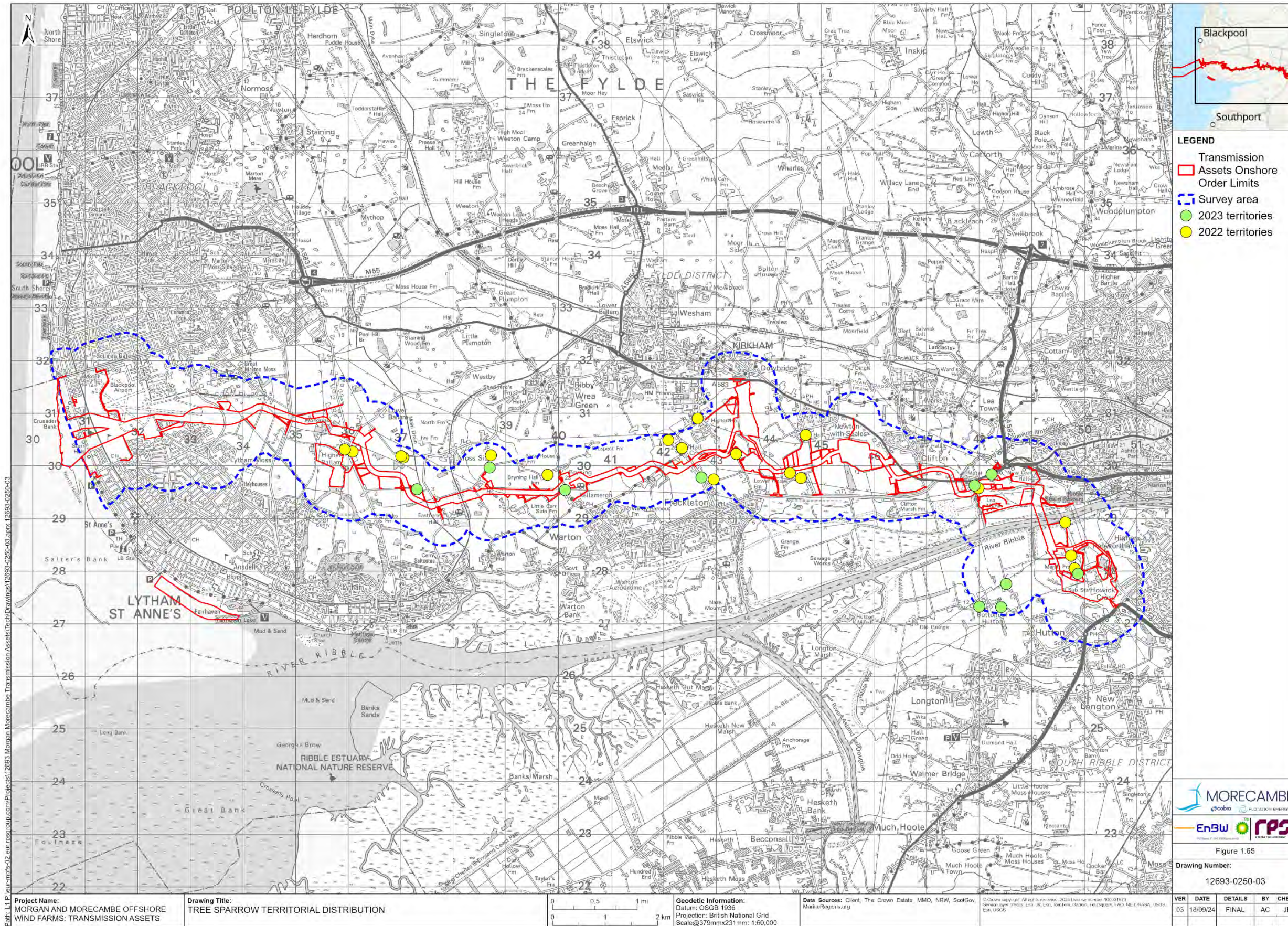


Figure 1.65: Tree sparrow territorial distribution

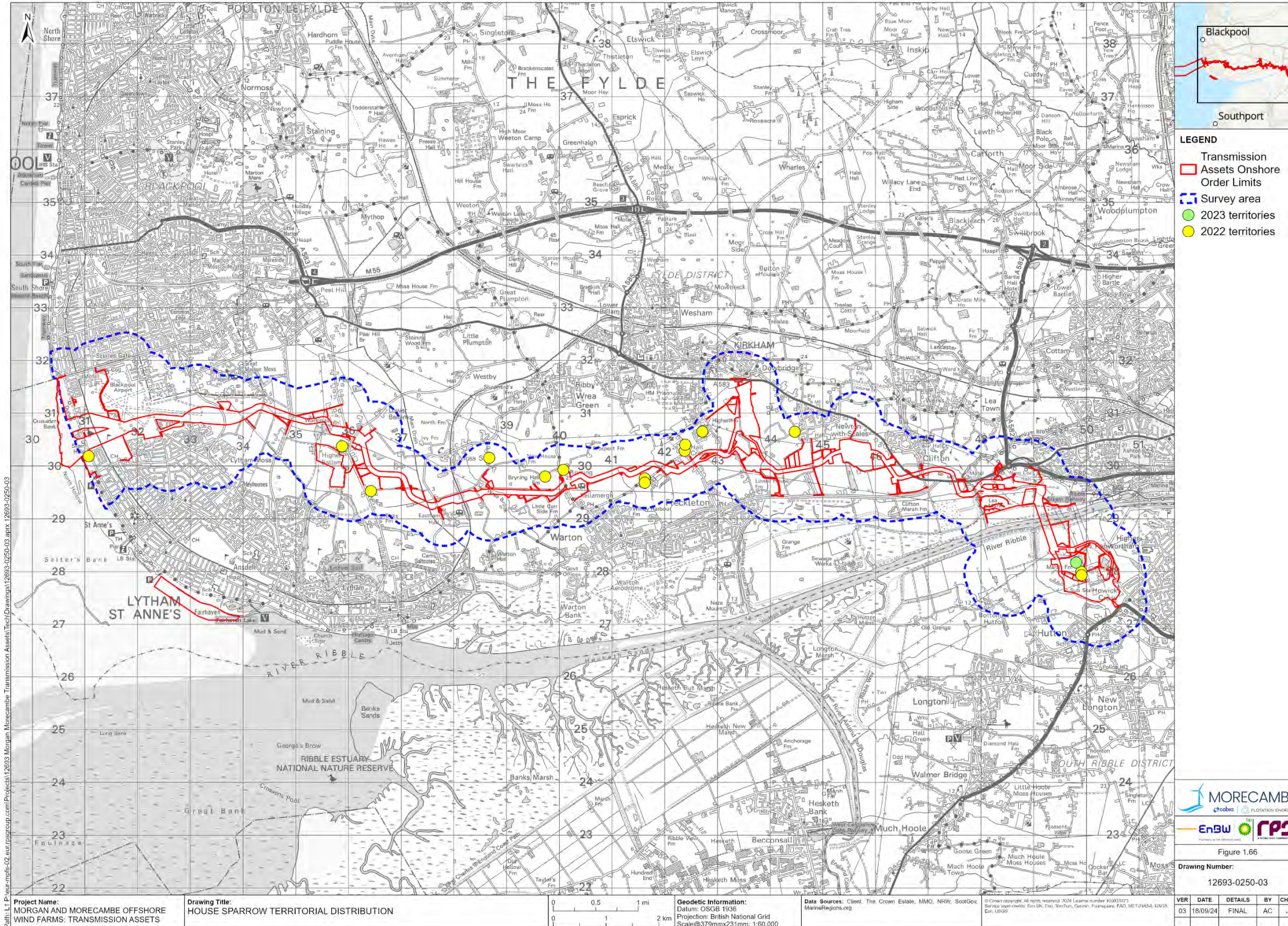


Figure 1.66: House sparrow territorial distribution

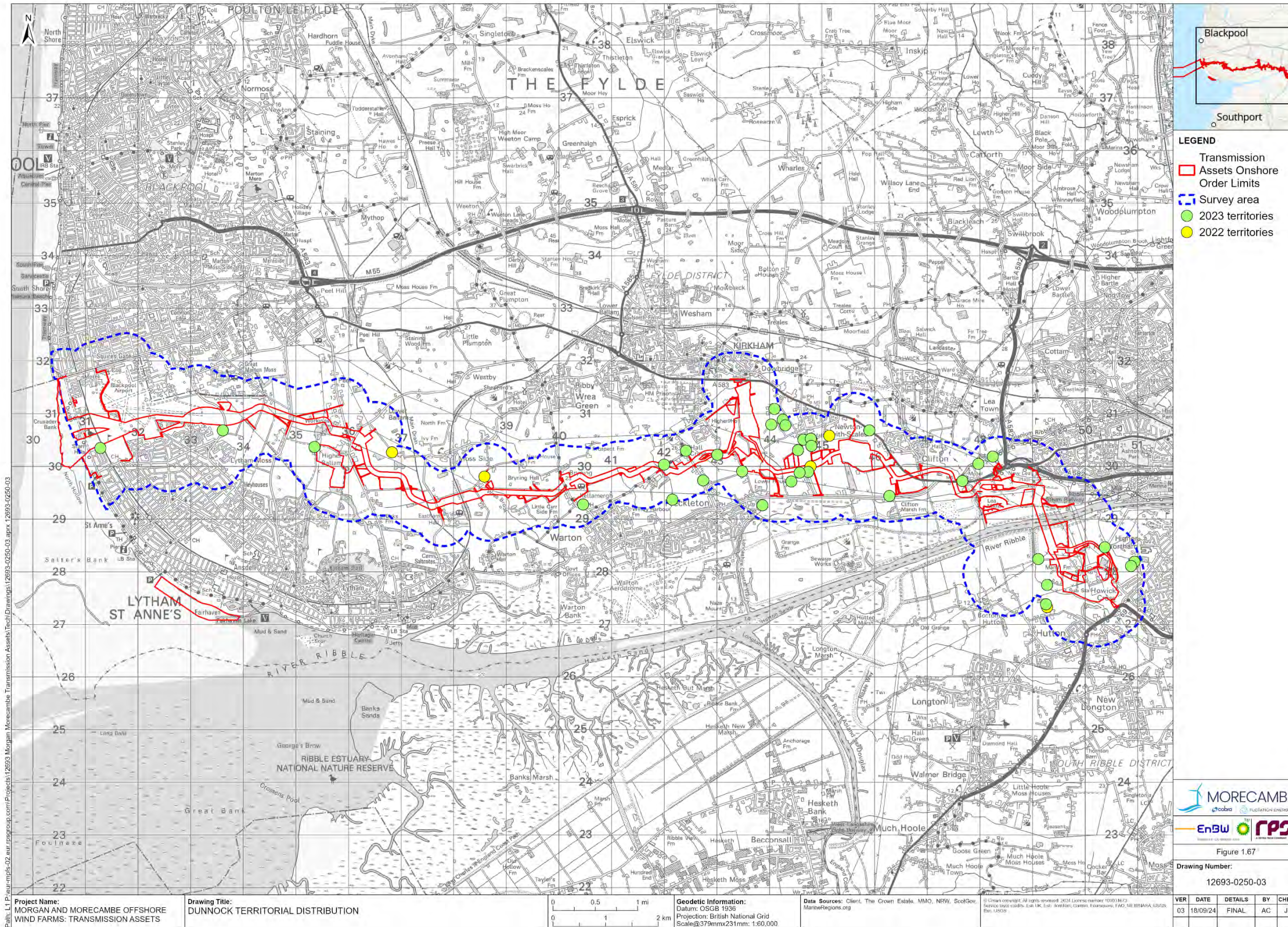


Figure 1.67: Dunnock territorial distribution

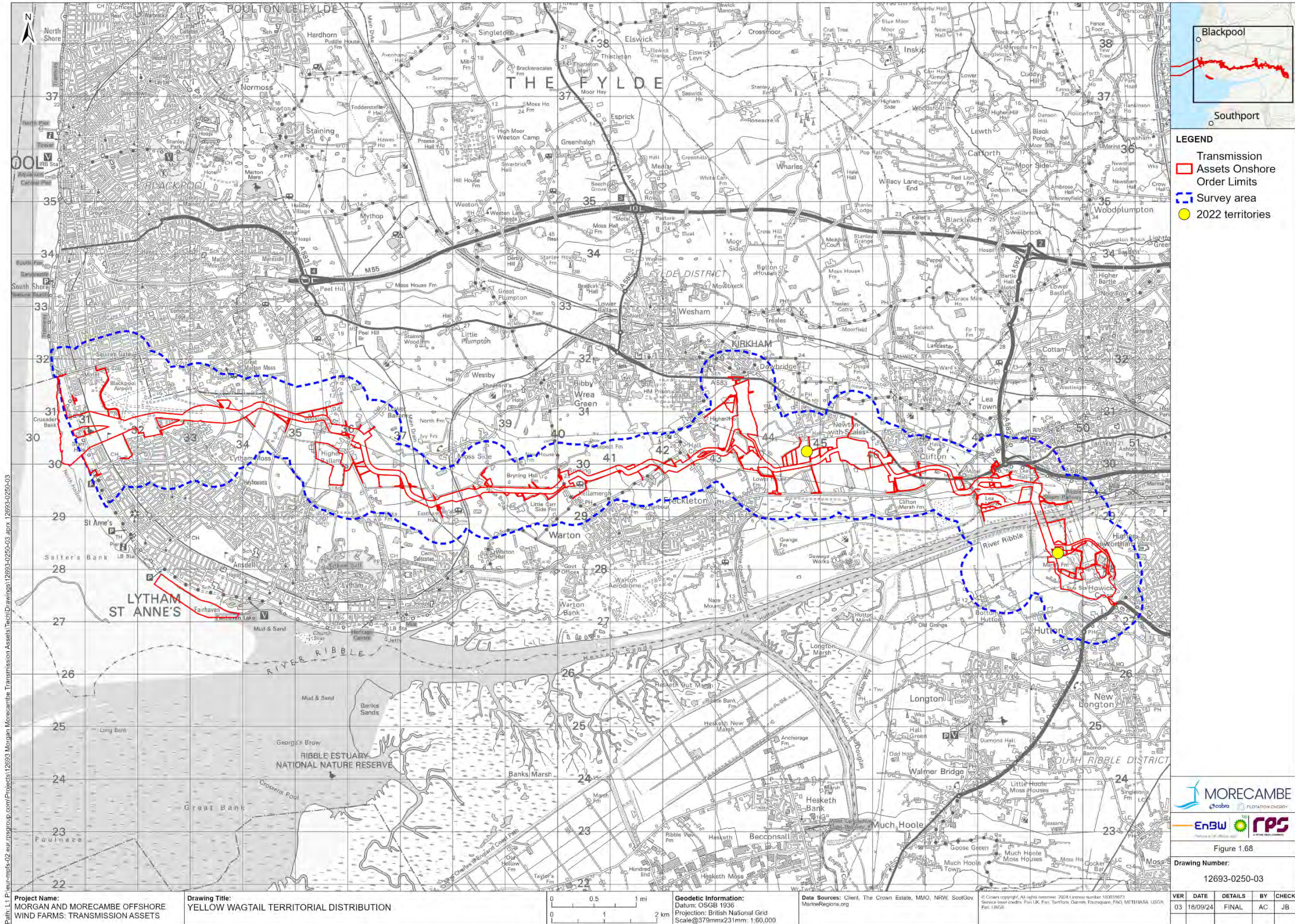


Figure 1.68: Yellow wagtail territorial distribution

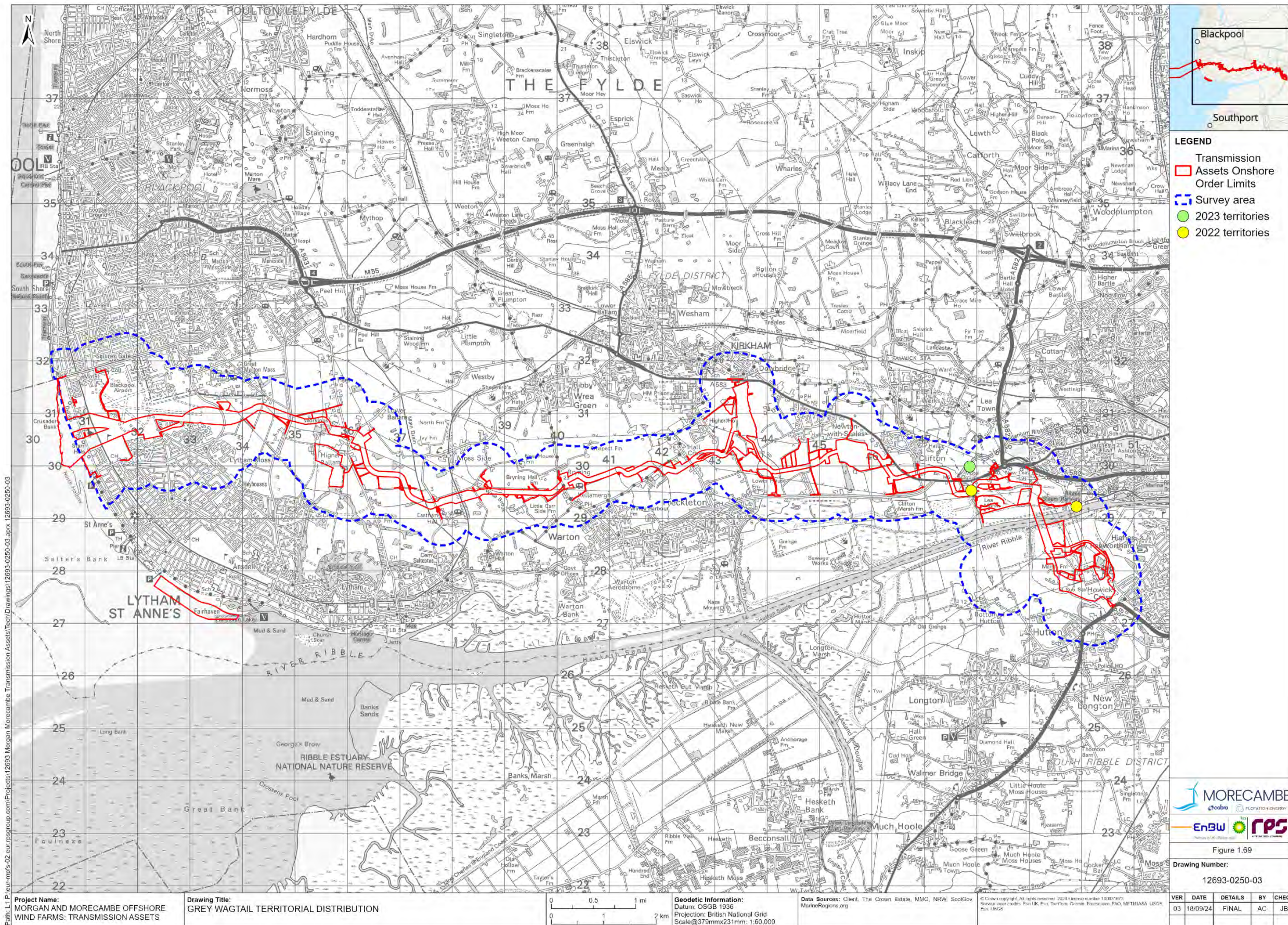


Figure 1.69: Grey wagtail territorial distribution

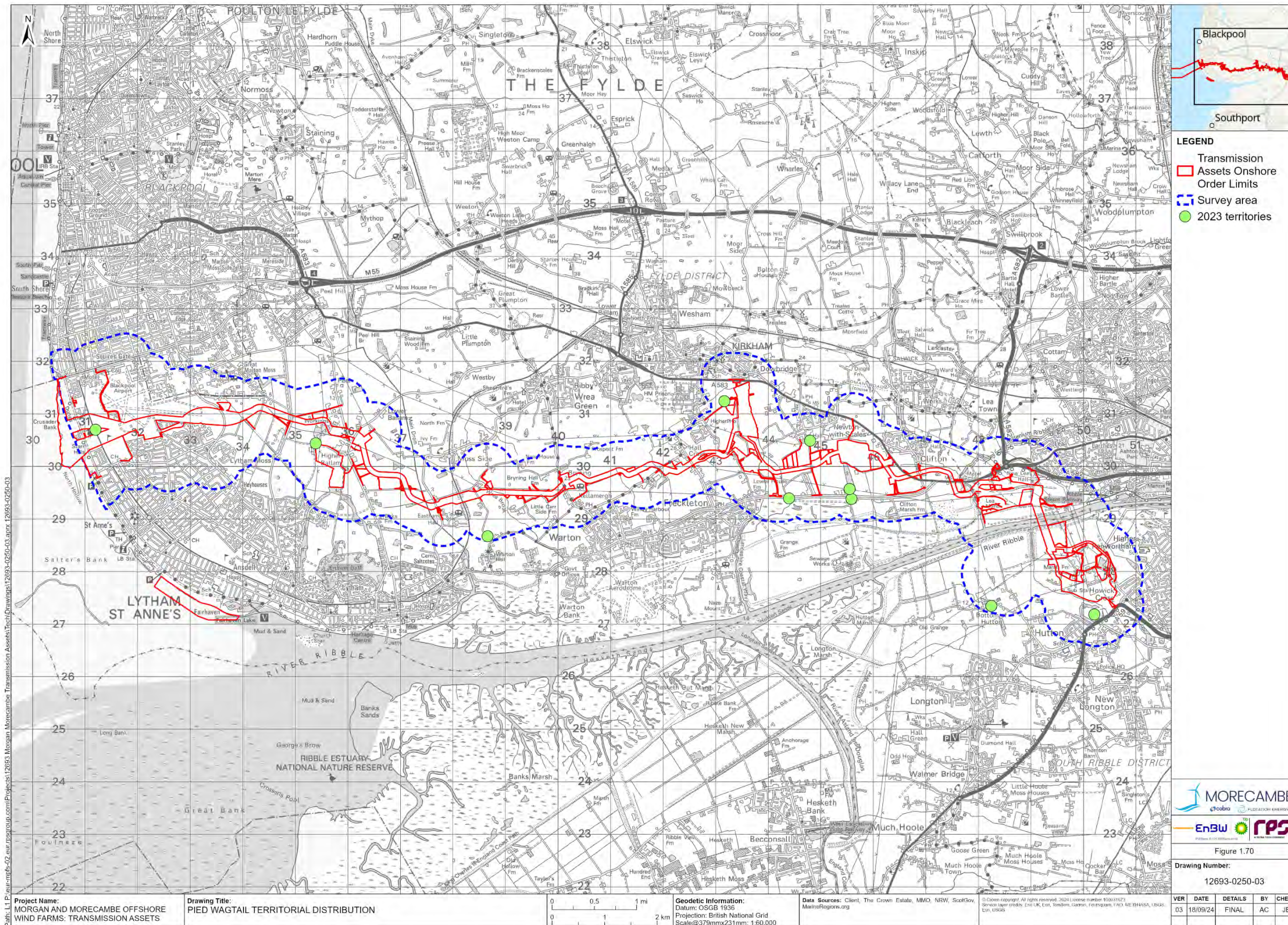


Figure 1.70: Pied wagtail territorial distribution

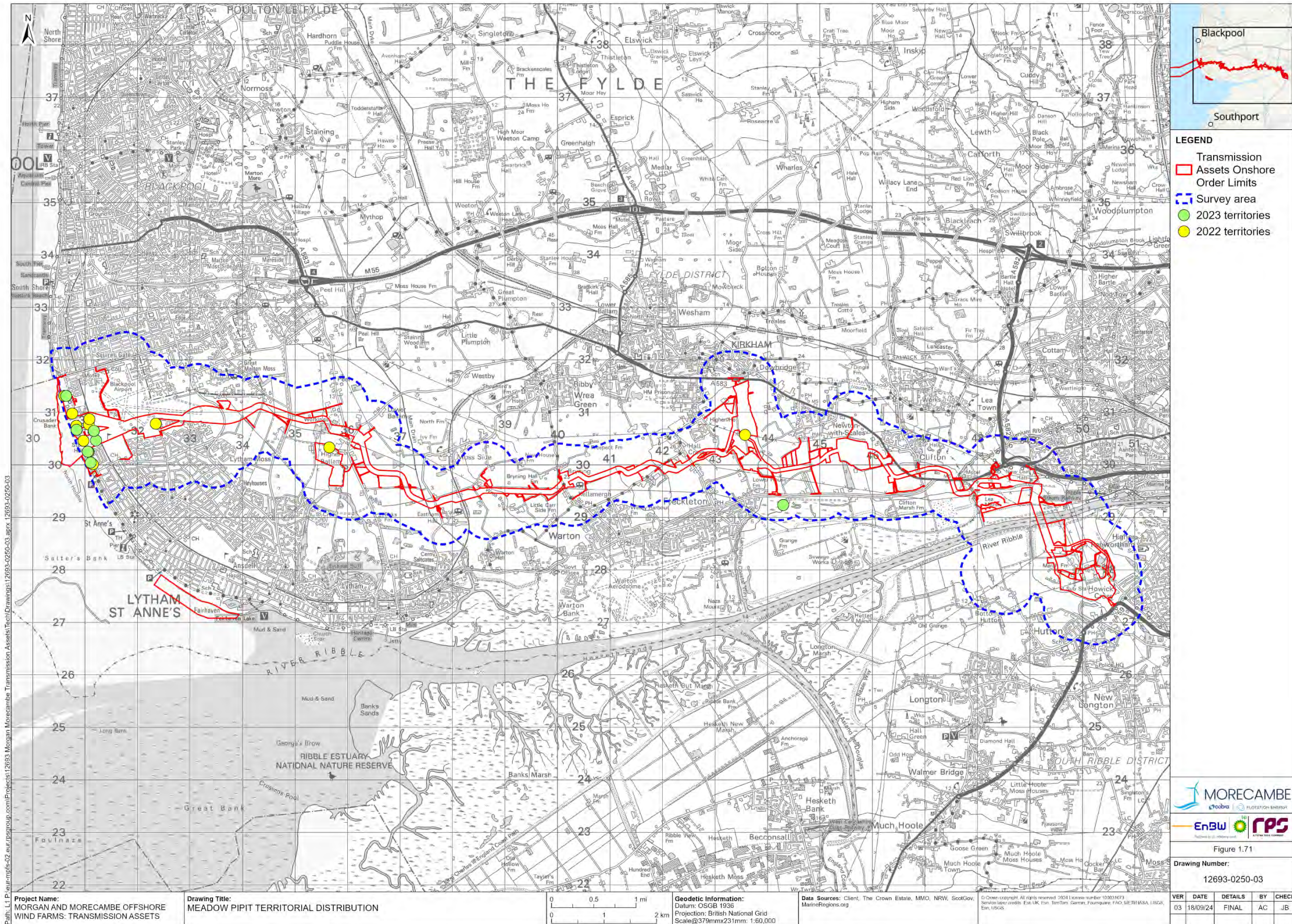


Figure 1.71: Meadow pipit territorial distribution

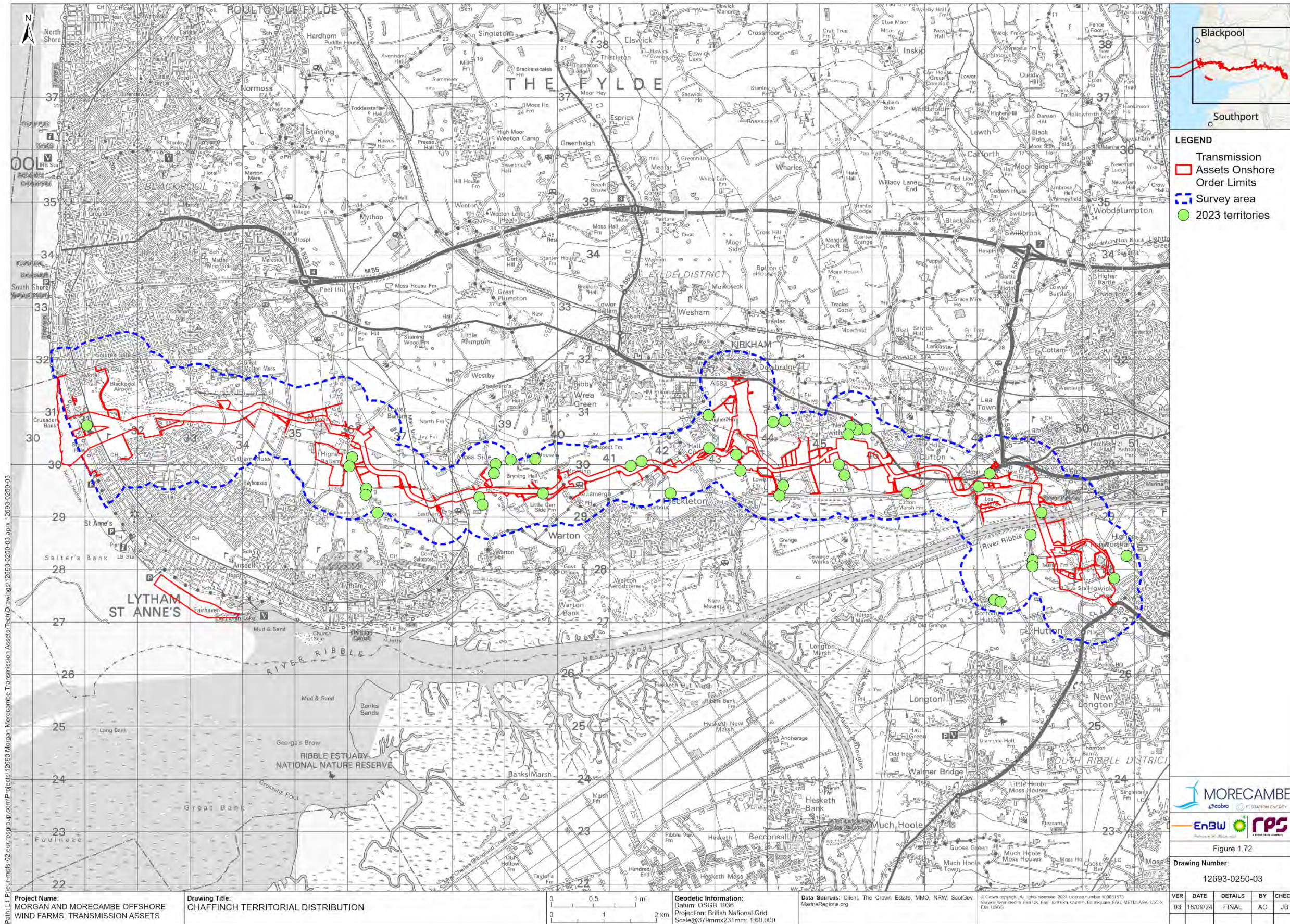


Figure 1.72: Chaffinch territorial distribution

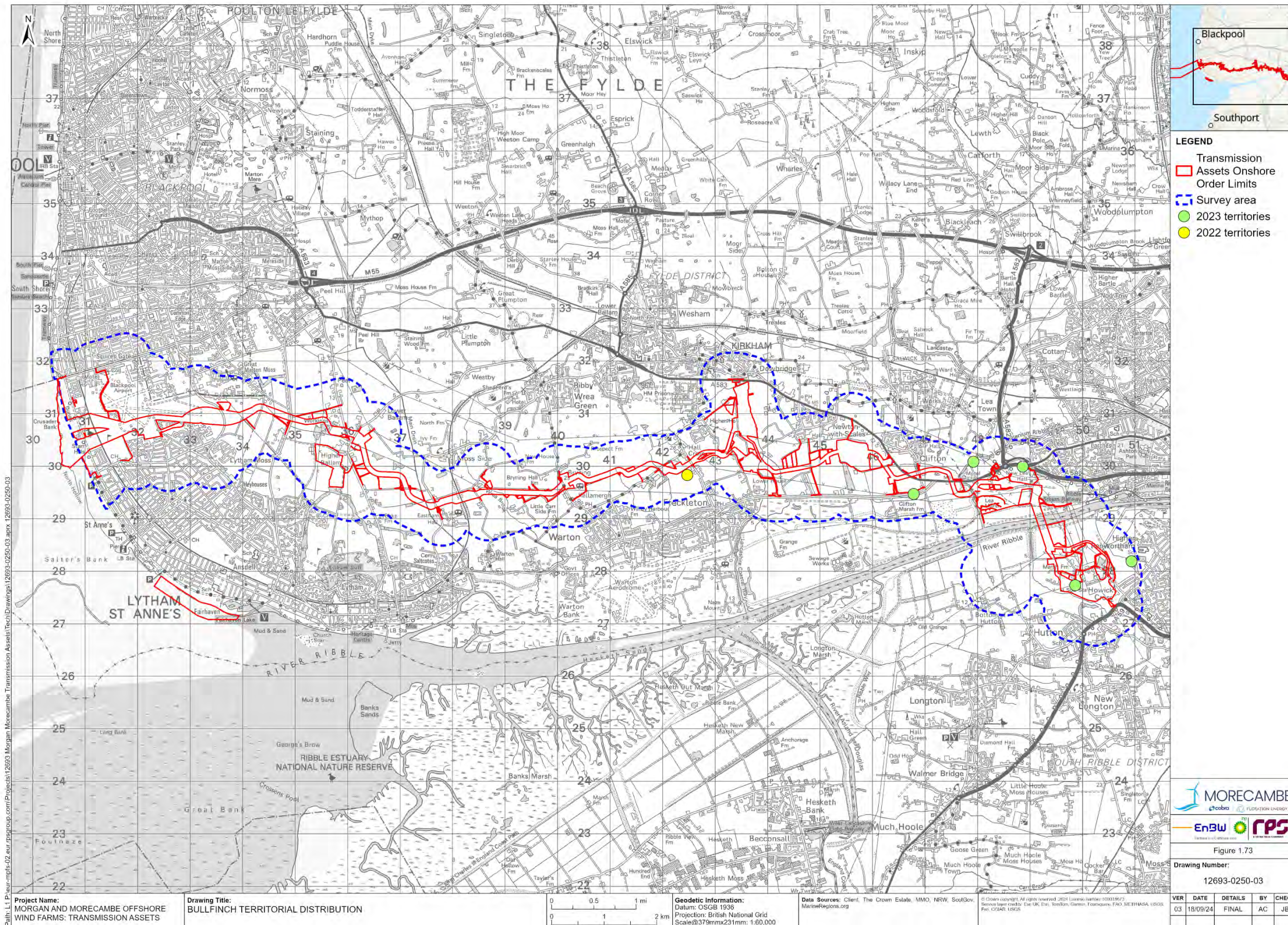


Figure 1.73: Bullfinch territorial distribution

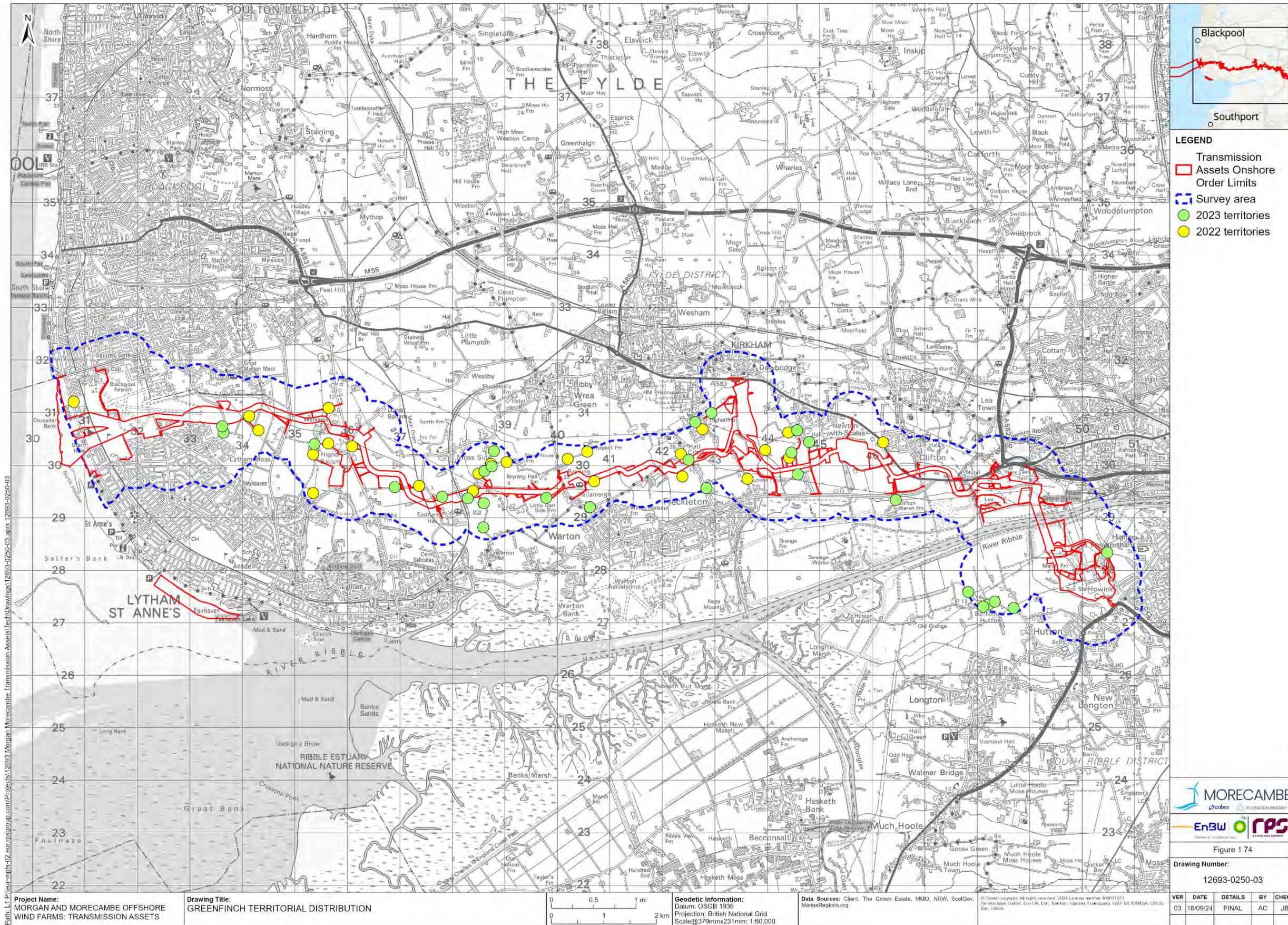


Figure 1.74: Greenfinch territorial distribution

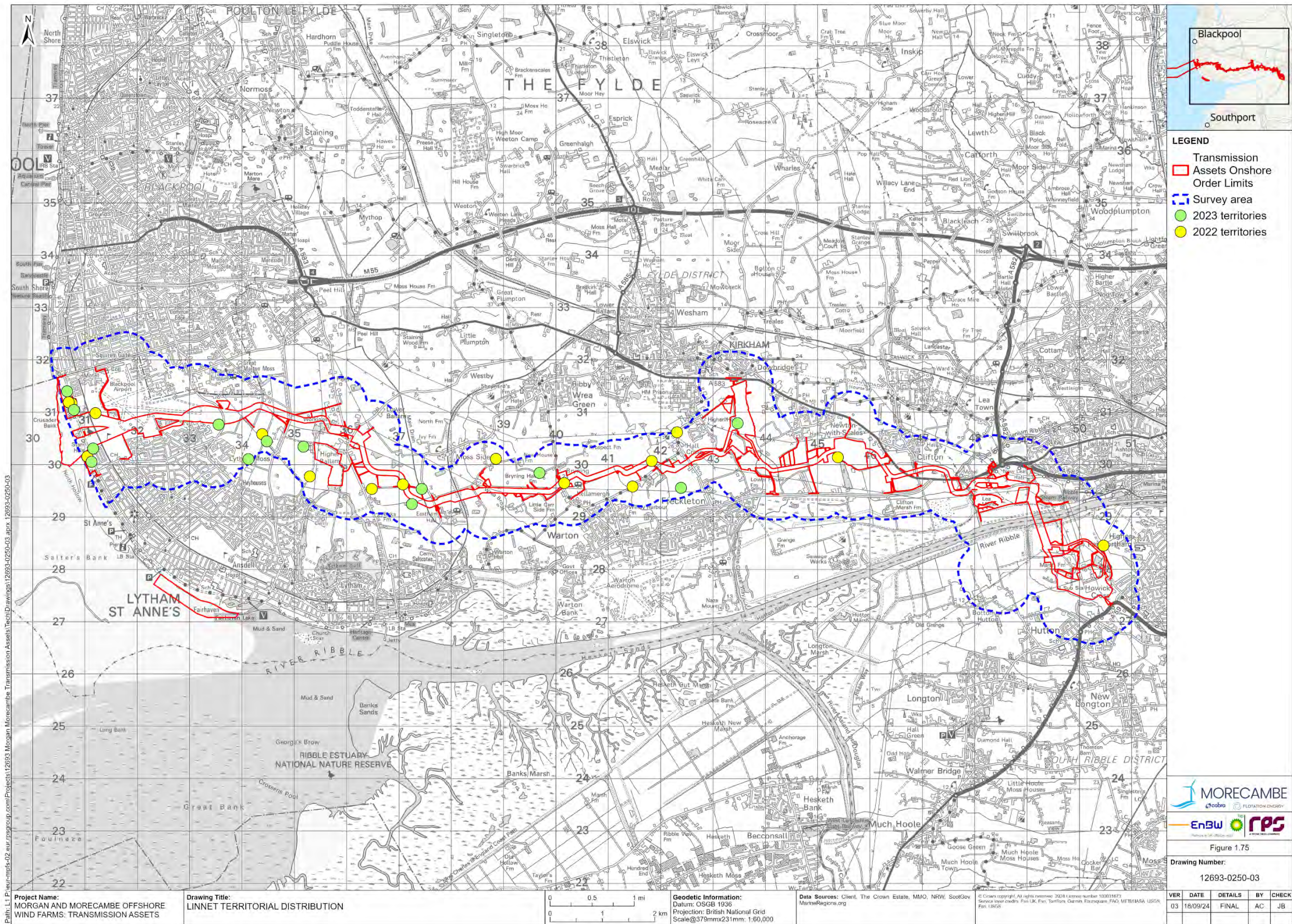


Figure 1.75: Linnet territorial distribution

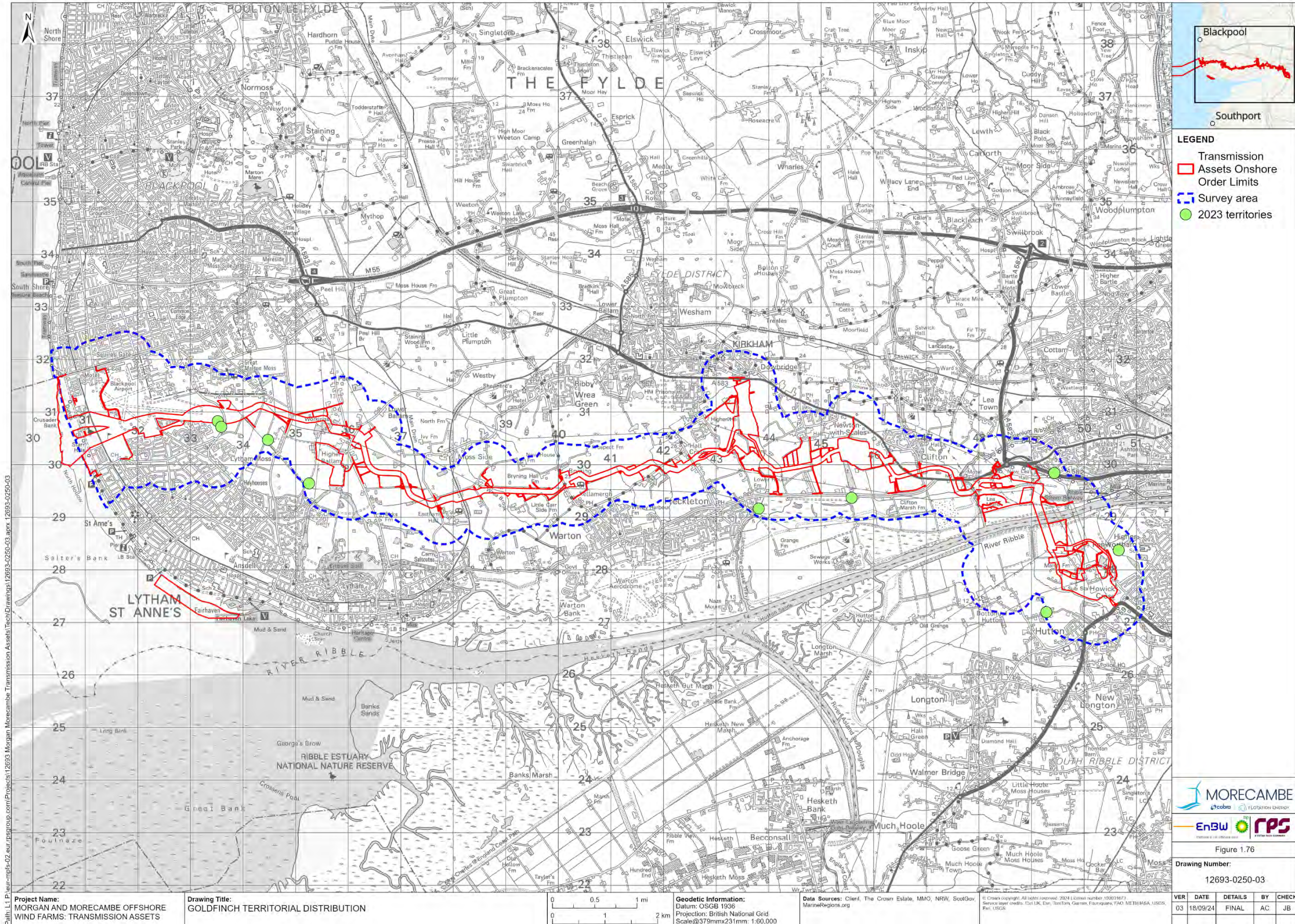


Figure 1.76: Goldfinch territorial distribution

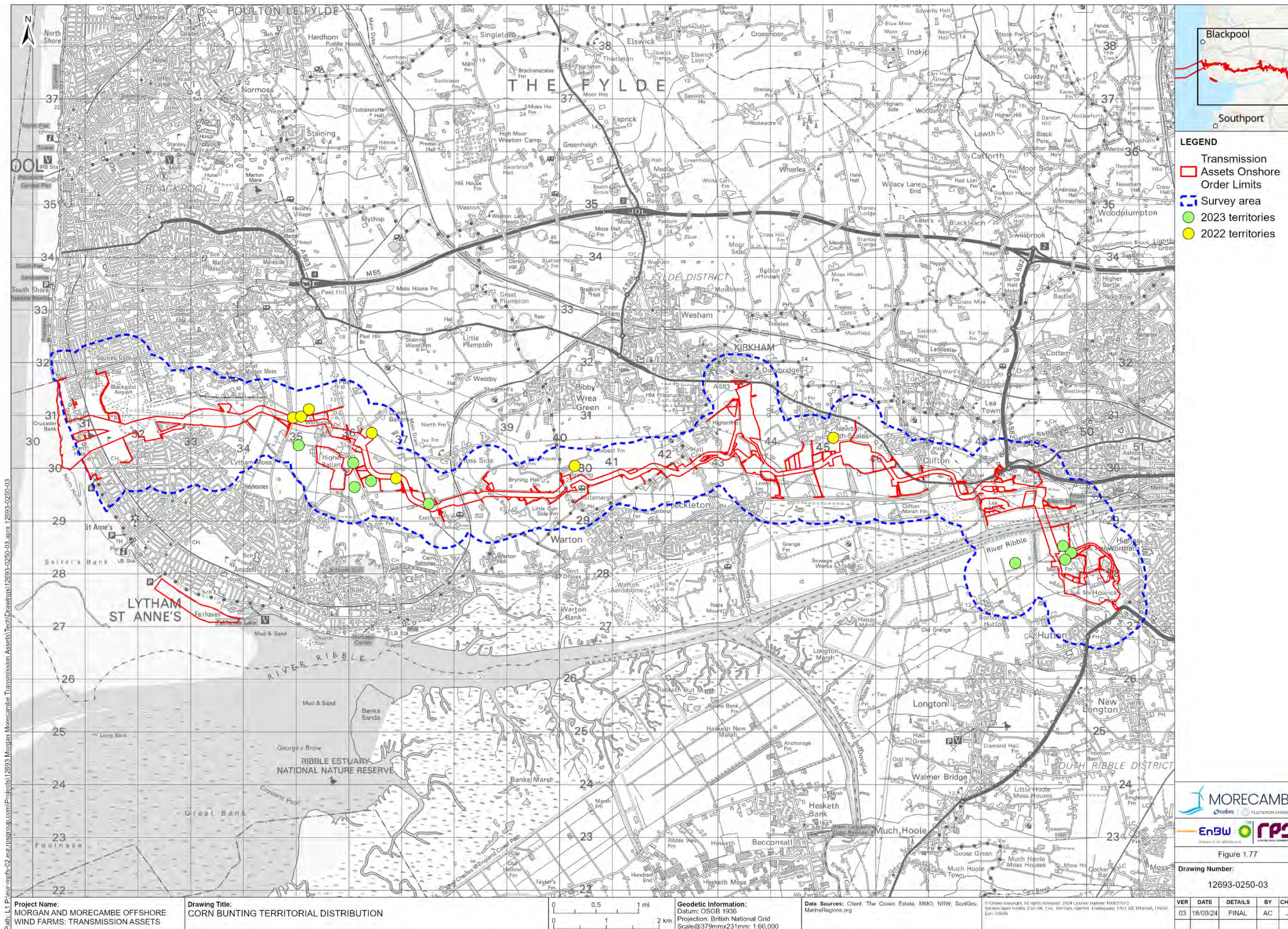


Figure 1.77: Corn bunting territorial distribution

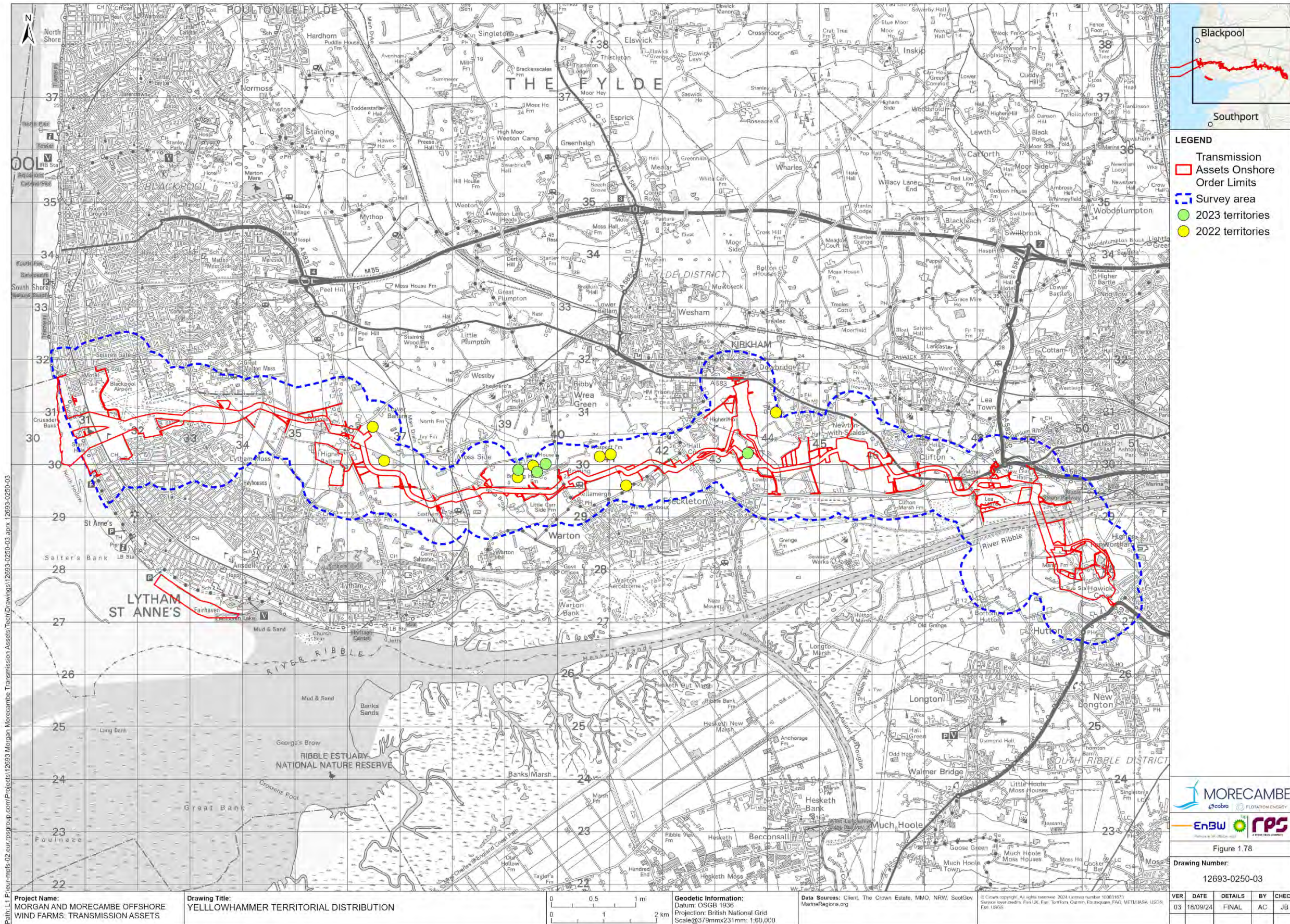


Figure 1.78: Yellowhammer territorial distribution

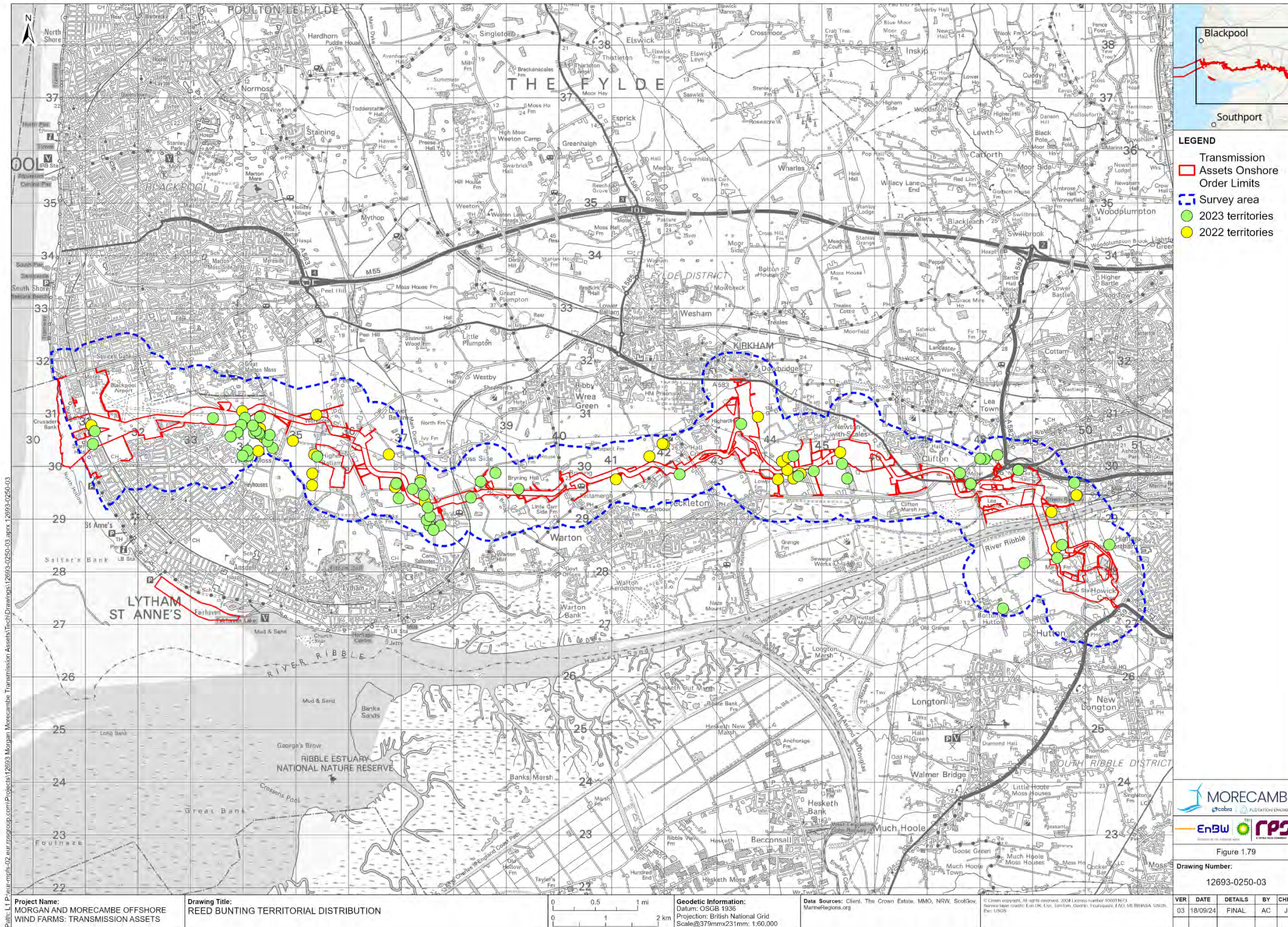


Figure 1.79: Reed bunting territorial distribution

1.4.3 Limitations

- 1.4.3.1 The first breeding bird survey was not mobilised until April 2022. It is acknowledged that early breeding species may have been missed during 2022. However, for the majority of the migratory and sedentary breeding birds, breeding does not start in earnest until April, and even later with some migratory species.
- 1.4.3.2 The frequency of visits was reduced from ten (as recommended for the Common Bird Census protocol) to a minimum of four per breeding season. This is considered suitable to characterise the breeding assemblage present and due to the temporary nature of potential habitat loss and disturbance. When it came to assigning territories, this was taken into account and if there was any doubt (e.g., a species had made only one registration of breeding behaviour), then a precautionary approach was taken, and a territory assigned.
- 1.4.3.3 Every effort was made to cover the entire survey area. However, due to different iterations of the Onshore Order Limits and the Intertidal Infrastructure area, and difficulty gaining access to privately owned land parcels (which were granted on a visit-by-visit basis), the survey effort across the survey area has varied between years and between visits (**Figure 1.7**). However, all areas where access was publicly available were visited monthly over both years (**Figure 1.7**). It must be noted that some areas were not surveyed in year one as they were previously outside Onshore Order Limits and the Intertidal Infrastructure area, and vice versa.
- 1.4.3.4 Whilst only species of conservation concern were recorded in 2022, all species regardless of their conservation status or protection were recorded in 2023. This was to account for the possibility of the conservation status changing in future (i.e., birds updated to higher conservation status).

1.5 Summary

- 1.5.1.1 The purpose of this annex is to present baseline data on the breeding birds known and recorded within the survey area.
- 1.5.1.2 In order to establish a baseline of potential breeding ornithological receptors within the survey area, a combination of a desk-based study and site-specific surveys have been undertaken.
- 1.5.1.3 A desk-based study focussed on a review of three key data sources: BTO breeding bird records, Fylde Bird Club data records and breeding bird surveys results at the Queensway development.
- 1.5.1.4 BTO's comprehensive dataset (2007 to 2011) recorded 103 species within the 2 km tetrads which overlapped the survey area during breeding season. More recent data (2019 to 2023) recorded 133 species within the same 2 km tetrads.
- 1.5.1.5 The Queensway development breeding bird surveys recorded a total of 51 bird species. The site was identified by Jenkins (2021) as being of local importance for breeding birds due to the number of species red or amber-listed birds in the BOCC5 UK.

- 1.5.1.6 Fylde Bird Club data records showed the presence of 118 species as present during the breeding season and likely to be breeding in the area (March to July) between 2019 and 2023. The most abundant taxonomic family group when looking at the sum of the five year mean of peak (rounded to the nearest whole number) were passerines (5,210 individuals) across 51 species, followed in order of abundance by: waders (4,487 individuals) across 12 species, geese, ducks and swans (1,420 individuals) across 15 species and gulls and terns (1,321) across seven species. An additional 1,110 individual birds were recorded across species from 13 other taxonomic groups.
- 1.5.1.7 Sites-specific breeding surveys for the Transmission Assets were undertaken during 2022 between April and July and during 2023 between March and July.
- 1.5.1.8 Both the desk-based study and site-specific surveys show that areas of the survey area are important either locally or nationally for a number of ornithological features, including waders, wildfowl and farmland birds.
- 1.5.1.9 Results of the 2022 surveys, which focussed on species of relatively high conservation concern (Annex 1 species of the Birds Directive; Schedule 1 of the Wildlife and Countryside Act 1981; Section 41 of the Natural Environment and Rural Communities Act 2006 and BOCC5 UK red or amber listed species) recorded a total of 40 species which were found to be holding territory or displaying territorial behaviour within the survey area.
- 1.5.1.10 During the surveys barn owl were the only species present which is protected under Schedule 1 of the Wildlife and Countryside Act 1981. Little egret were the only species present which is listed as an Annex 1 species of the Birds Directive.
- 1.5.1.11 Two species of wader, seven farmland species and six species associated with woodland, hedgerow or urban habitats were listed under Section 41 of the Natural Environment and Rural Communities Act 2006, including. The assemblage of species was indicative of the wide variety of habitats within the survey area.
- 1.5.1.12 A total of 16 species are red listed in the BOCC5 UK red list, with starling and skylark being the most abundant. A further 21 species are amber listed in the BOCC5 UK, of which common whitethroat and mallard were the most abundant.
- 1.5.1.13 During the breeding bird surveys completed in 2023, a total of 66 species were found to be holding territory or displaying territorial behaviour within the survey area. A wide range of species was recorded and identified as potentially holding breeding territories within the survey area, including six species from the geese, ducks and swans group, six species of wader, three owl species, three raptor species and 43 passerine species comprising of species associated with farmland, scrub and woodland habitats.
- 1.5.1.14 During 2023 two Annex 1 listed species were identified as likely to be holding breeding territories. Six Schedule 1 species were also identified as likely to be breeding. A total of 15 species listed under Section 41 were recorded as likely to be breeding within the survey area.

- 1.5.1.15 A total of 14 species identified within the survey area during the 2023 breeding bird surveys were red listed in the BOCC5 UK. A total of 23 species identified within the survey area during the 2023 breeding bird surveys were amber listed in the BOCC5 UK
- 1.5.1.16 An assessment of the potential impacts and resulting effects of the Transmission Assets on onshore and intertidal ornithological receptors, including breeding birds, is presented in Volume 3, Chapter 4: Onshore and intertidal ornithology of the ES (document reference F3.4).

1.6 References

- Balmer, D.E., Gillings, S., Caffrey, B.J., Swann, R.L., Downie, I.S., Fuller, R.J. (2013) Bird Atlas 2007–11: The Breeding and Wintering Birds of Britain and Ireland. British Trust for Ornithology, Thetford.
- Bibby, C.J., Burgess, N.D., Hill, D.A. & Mustoe, S.H. (2000) Bird Census Techniques, second edition. London, Academic Press.
- British Ornithologists' Union (2023) The British List. The official list of birds recorded in Britain. Available at [REDACTED] 2024.
- British Trust for Ornithology. (2023) BTO Data Report – Morgan and Morecambe Offshore Wind. Compiled 11 May 2023.
- British Trust for Ornithology. (no date) Breeding evidence. Available at: [REDACTED] Accessed June 2024.
- CIEEM. (2022) Guidelines for ecological impact assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine. Version 1.2. Chartered Institute of Ecology and Environmental Management, Winchester. Available at: [REDACTED] April 2024.
- Copernicus, 2020. Corine Land Cover (CLC) 2018, Version 2020 20u1. Available: [REDACTED]. Accessed June 2023.
- Gilbert, G., Gibbons, D.W., & Evans, J. (1998). Bird Monitoring Methods: A Manual of Techniques for Key UK Species. Pelagic Publishing.
- Goodship, N.M. and Furness, R.W. (2022). Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. A report from MacArthur Green to NatureScot.
- Jenkins, L. (2021). Queensway Farmland Conservation Area and Nature Park, Lytham St. Annes, Breeding Bird Survey Report 2021. Report prepared to Rowland Homes Limited by The Environment Partnership. Document ref: 8861.002. Warrington, The Environment Partnership. Report available on request from the Environment Partnership.
- JNCC (2022a). Special Protection Areas (SPAs): List of sites. Available at: <https://jncc.gov.uk/our-work/list-of-spas/>
- JNCC (2022b). Ramsar Sites in the UK and the UK's Overseas Territories & Crown Dependencies. Available at: <https://jncc.gov.uk/our-work/ramsar-sites/>
- Lancashire County Council (2024) Access to the Lancashire Biodiversity Action Plan (content of former Lancashire Biodiversity Action Plan website) available at: <https://www.lancashire.gov.uk/learn/services/>. Accessed January 2024.
- Marchant, J.H. (1983) BTO Common Birds Census instructions. Tring, BTO.
- Mitchell, P. & Newton, Stephen & Ratcliffe, Norman & Dunn, Timothy. (2004) Seabird Populations of Britain & Ireland.
- Natural England. (2022) Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards. Phase I: Expectations for pre-application

baseline data for designated nature conservation and landscape receptors to support offshore wind applications. Details for access available at:
<https://naturalengland.blog.gov.uk/2022/04/13/offshore-wind-best-practice-advice-to-facilitate-sustainable-development/>.

RPS. (2024) Mona Offshore Wind Project. Environmental Statement Volume 3, Chapter 4: Onshore and intertidal ornithology. Available at:
https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010137/EN010137-000376-F3.4_Mona_ES_Onshore%20and%20Intertidal%20Ornithology.pdf. Accessed September 2024.

Scottish Natural Heritage (NatureScot). (2016) Assessing Connectivity with Special Protection Areas (SPAs), Guidance Document, Version 3. Scottish Natural Heritage. Available: <https://www.nature.scot/sites/default/files/2022-12/Assessing%20connectivity%20with%20special%20protection%20areas.pdf>. Accessed June 2023.

SLR. (2024) Outer Dowsing Offshore Wind. Environmental Statement Chapter 22 Onshore Ornithology Volume 1 Chapters. Available at:
<https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010130/EN010130-000371-6.1.22%20Chapter%2022%20Onshore%20Ornithology.pdf>. Accessed September 2024.

Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021) The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* 114: 723-747.

Appendix A

Table 1.12: Monthly peak counts of birds (individuals) recorded during the 2022 breeding bird surveys. These numbers do not directly correlate with the number of territories, for a full explanation of the territory analysis process see section 1.4.1.11

Taxonomic group	Species	April peak	May peak	June peak	July peak
Geese, ducks and swans	Canada goose	2	18	10	0
	Greylag goose	2	1	0	0
	Pink-footed goose	0	0	0	4
	Mute swan	2	0	0	0
	Shelduck	90	40	10	7
	Gadwall	4	0	0	0
	Mallard	72	20	9	120
	Teal	1	0	0	0
	Goosander	0	1	0	0
	Red-breasted merganser	7	0	0	0
Swifts	Swift	0	6	67	18
Pheasants and partridges	Grey partridge	0	1	0	6
Doves and pigeons	Stock dove	51	20	12	12
Rails, crakes and coots	Coot	3	0	0	0
Waders	Oystercatcher	25	7	18	16
	Lapwing	69	35	90	31
	Whimbrel	36	1	0	0
	Curlew	6	0	1	26
	Common sandpiper	0	0	3	2
	Redshank	14	0	0	1
Gulls and terns	Black-headed gull	0	0	6	0
	Herring gull	0	0	4	0
	Lesser black-backed gull	0	0	7	0
	Common tern	0	2	10	10
Cormorants	Cormorant	7	0	1	9
Hérons	Grey heron	4	11	8	6
	Little egret	10	2	7	3
Kingfishers	Kingfisher	1	0	0	0
Raptors	Sparrowhawk	5	0	1	4

Taxonomic group	Species	April peak	May peak	June peak	July peak
	Marsh harrier	1	0	0	0
	Red kite	1	0	0	0
	Buzzard	8	7	11	21
	Kestrel	4	7	7	18
Owls	Barn owl	0	1	1	2
	Tawny owl	1	0	0	0
Woodpeckers	Great spotted woodpecker	2	0	0	0
Swallows and martins	Sand martin	1	0	4	39
	Swallow	2	64	79	352
	House martin	0	2	10	27
Passerines	Jay	1	0	0	0
	Magpie	9	1	0	0
	Jackdaw	0	16	0	0
	Rook	26	4	0	25
	Carrion Crow (black forms)	11	0	0	0
	Raven	2	3	2	13
	Coal Tit	0	0	1	0
	Blue Tit	14	12	0	0
	Great Tit	25	7	0	0
	Skylark	61	49	12	20
	Long-tailed Tit	8	11	6	17
	Willow Warbler	13	6	3	0
	Chiffchaff	16	13	18	8
	Sedge Warbler	3	11	5	8
	Reed Warbler	0	1	2	0
	Grasshopper Warbler	0	2	0	1
	Blackcap	1	10	5	3
	Lesser Whitethroat	3	8	6	4
	Common whitethroat	7	49	19	24
	Goldcrest	1	0	1	2
	Wren	0	5	2	1

Taxonomic group	Species	April peak	May peak	June peak	July peak
	Nuthatch	1	0	0	2
	Starling	164	212	174	175
	Song Thrush	24	10	8	21
	Mistle Thrush	4	2	0	16
	Blackbird	22	20	9	7
	Ring Ouzel	1	0	0	0
	Robin	19	8	7	4
	Redstart	2	0	0	0
	Whinchat	1	0	0	0
	Stonechat	0	1	2	2
	Wheatear	17	24	0	0
	Tree Sparrow	22	14	8	20
	House Sparrow	16	1	4	43
	Dunnock	0	8	1	1
	Yellow Wagtail	0	2	0	3
	Grey Wagtail	0	1	1	6
	Pied Wagtail	2	5	4	4
	Meadow Pipit	130	2	3	7
	Chaffinch	13	24	2	0
	Bullfinch	0	0	0	1
	Greenfinch	22	9	8	33
	Linnet	138	6	7	74
	Lesser Redpoll	3	1	0	0
	Goldfinch	8	11	23	25
	Corn Bunting	8	4	3	4
	Yellowhammer	2	4	0	6
	Reed Bunting	31	20	9	18

Table 1.13: Monthly peak counts of birds (individuals) recorded during the 2023 breeding bird surveys. These numbers do not directly correlate with the number of territories, for a full explanation of the territory analysis process see section 1.4.1.11

Taxonomic group	Species	March peak	April peak	May peak	June peak	July peak
Geese, ducks and swans	Canada goose	0	12	13	4	0
	Greylag goose	2	0	1	0	0
	Pink-footed goose	4	0	0	0	0
	Mute swan	2	0	0	1	0
	Shelduck	135	72	73	16	0
	Shoveler	4	20	0	12	1
	Gadwall	0	4	2	0	0
	Wigeon	0	0	1	0	0
	Mallard	48	11	15	0	38
	Teal	1	11	0	0	0
	Goosander	0	0	0	0	6
Pheasants and partridges	Grey partridge	0	4	0	0	0
Doves and pigeons	Stock dove	0	0	0	9	0
	Woodpigeon	0	12	0	446	0
	Collared dove	0	2	0	0	0
Rails, crakes and coots	Water rail	2	0	0	0	0
	Moorhen	0	0	0	7	2
	Coot	2	2	0	6	0
Waders	Oystercatcher	8	10	11	9	11
	Avocet	0	0	6	30	0
	Lapwing	36	51	56	148	372
	Little Ringed Plover	0	0	1	2	0
	Whimbrel	0	12	6	0	1
	Curlew	107	63	0	8	187
	Black-tailed Godwit	343	4	2	0	137
	Ruff	1	0	0	0	0
	Snipe	1	0	0	0	3
	Green Sandpiper	1	0	0	0	0
	Redshank	62	9	5	10	0
Gulls and terns	Black-headed gull	22	0	0	0	5330

Taxonomic group	Species	March peak	April peak	May peak	June peak	July peak
	Herring gull	112	1	0	0	95
	Lesser black-backed gull	26	0	0	0	205
Heron	Grey heron	18	31	19	2	10
	Little egret	6	2	1	0	35
Kingfishers	Kingfisher	3	1	2	0	5
Raptors	Sparrowhawk	1	2	1	3	4
	Buzzard	5	8	5	1	4
	Kestrel	7	5	8	9	8
Owls	Barn owl	3	3	5	1	2
	Little owl	0	0	1	0	0
	Tawny owl	1	0	1	0	0
Woodpeckers	Great spotted woodpecker	1	2	3	8	2
Swallows and martins	Sand martin	0	0	0	2	54
	Swallow	0	16	0	43	433
	House martin	0	0	0	2	54
Passerines	Jay	0	5	0	5	0
	Magpie	0	0	0	10	0
	Jackdaw	0	0	0	64	100
	Rook	0	0	16	905	550
	Carrion Crow	0	0	0	8	0
	Raven	0	2	0	0	0
	Coal Tit	0	0	0	5	2
	Blue Tit	0	0	0	121	21
	Great Tit	0	0	0	87	21
	Skylark	40	43	65	29	0
	Cetti's Warbler	2	2	2	1	0
	Long-tailed Tit	0	0	4	27	17
	Willow Warbler	0	6	8	9	0
	Chiffchaff	7	34	25	47	16
	Sedge Warbler	00	00	40	26	9

Taxonomic group	Species	March peak	April peak	May peak	June peak	July peak
	Reed Warbler	0	0	5	8	7
	Grasshopper Warbler	0	1	3	3	1
	Blackcap	0	4	15	33	19
	Lesser Whitethroat	0	0	4	6	0
	Common whitethroat	0	1	55	61	16
	Goldcrest	0	2	0	3	5
	Wren	0	1	0	1	55
	Nuthatch	0	3	1	4	1
	Treecreeper	0	3	3	11	2
	Starling	0	2	0	331	265
	Song Thrush	1	17	17	33	9
	Mistle Thrush	3	2	1	3	10
	Blackbird	0	0	1	65	11
	Fieldfare	190	0	0	0	0
	Robin	0	1	0	65	8
	Stonechat	7	4	9	9	0
	Wheatear	1	2	9	0	0
	Tree Sparrow	0	9	9	57	9
	House Sparrow	0	0	6	16	0
	Dunnock	0	2	0	32	4
	Grey Wagtail	1	1	2	1	1
	Pied Wagtail	2	5	1	6	23
	Meadow Pipit	121	71	26	7	2
	Chaffinch	0	1	1	39	0
	Bullfinch	0	1	0	5	2
	Greenfinch	6	25	0	18	33
	Linnet	48	12	8	62	77
	Goldfinch	0	1	0	30	213
	Corn Bunting	5	4	4	4	2
	Yellowhammer	6	2	4	2	1

Taxonomic group	Species	March peak	April peak	May peak	June peak	July peak
	Reed Bunting	17	21	15	22	11