MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Baseline Bird Technical Report F01

Deadline 3: July 2025
Rev: F01

MOR001-FLO-CON-CAG-RPT-0089
MRCNS-J3303-RPS-19114

Document reference: S_D3_5

Document status					
Version	**Purpose of document**	**Approved by**	**Date**	**Approved by**	**Date**
F01	Deadline 3	HK	July 2025	IM	July 2025

Prepared by:

Morgan Offshore Wind Limited, Morecambe Offshore Windfarm Ltd

Prepared for:

Morgan Offshore Wind Limited, Morecambe Offshore Windfarm Ltd

Contents

Tables

Figures

Glossary

Term	Meaning
400 kV grid connection cables	Cables that will connect the proposed onshore substations to the existing National Grid Penwortham substation.
400 kV grid connection cable corridor	The corridor within which the 400 kV grid connection cables will be located.
Onshore Order Limits	Onshore Order Limits See Transmission Assets Order Limits: Onshore (below).
Onshore substations	The onshore substations will include a substation for the Morgan Offshore Wind Project: Transmission Assets and a substation for the Morecambe Offshore Windfarm: Transmission Assets. These will each comprise a compound containing the electrical components for transforming the power supplied from the generation assets to 400 kV and to adjust the power quality and power factor, as required to meet the UK Grid Code for supply to the National Grid.
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.
Transmission Assets	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.
Transmission Assets Order Limits	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.

Acronyms

Acronym	Meaning
BTO	British Trust for Ornithology
CoCP	Code of Construction Practice
DCO	Development Consent Order
ECoW	Ecological Clerk of Works
ES	Environmental Statement

Acronym	Meaning
OEMP	Outline Ecological Management Plan
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
UK	United Kingdom
WeBS	Wetland Bird Survey

Executive Summary

Background and Purpose

This Technical Note characterises bird populations within the 13 km wildlife hazard management zones surrounding Blackpool Airport and Warton Aerodrome. It supports the Applicants' Outline Wildlife Hazard Management Plan (S_D3_8) for the Transmission Assets. The note compiles national, regional, and site-specific data (2022–2024) from multiple sources, including Wetland Bird Survey (WeBS), Fylde Bird Club, and Applicants' surveys, to identify key species posing aircraft collision risks and establish baseline bird abundance and trends.

Key Findings

- Primary groups which are a potential collision risk include: Swans, geese, ducks, waders, gulls, corvids, pigeons, starling, and winter thrushes were due to their size, flocking behaviour, and presence near the airports.

Population Trends

- Swans: Whooper swan populations are increasing nationally and locally; Bewick's swan has declined significantly and is rare locally.
- Geese: All three goose species (Canada, greylag, pink-footed geese) show increasing trends nationally and locally, with pink-footed geese being the most abundant in the Ribble Estuary.
- Ducks: Wigeon populations remain stable others like mallard and shelduck have declined or are stable, with local fluctuations.
- Waders: Oystercatcher, lapwing, redshank and curlew have declined locally, golden plover have increased and black-tailed godwit have remained stable. Waders generally pose low aircraft risk.
- Gulls: Significant fluctuations with overall declines in species like herring and common gull. The number of gull nesting in urban areas has increased, leading to a rise in human-wildlife conflicts.
- Corvids: magpie, jackdaw, and carrion crow populations have increased nationally; rook populations have declined.
- Pigeons and starlings: Woodpigeon populations have increased; starlings have declined significantly nationally.
- Winter thrushes: Numbers vary annually, influenced by food supply and weather.

Bird Distribution and Habitat Use:

Key bird concentrations occur around Lytham Moss, Newton Marsh SSSI (adjacent to Warton Aerodrome), and the Ribble Estuary.

- Pink-footed geese and whooper swans are notably abundant at Lytham Moss.
- Ducks, particularly wigeon and teal, concentrate at Newton Marsh and along the Ribble corridor.
- Waders such as lapwing and golden plover have hotspots at Lytham Moss and Newton Marsh.
- Gulls are widespread but primarily found on intertidal zones and areas near Blackpool.

Bird Strike Risk:

- Gulls represent the greatest bird strike risk at Blackpool Airport, consistent with national data. Despite large populations of geese and waders locally, few strikes are reported from these species.
- Corvids, pigeons, and kestrels also contribute to bird strike incidents but to a lesser extent.
- Smaller non-flocking species such as warblers and finches were excluded due to negligible risk.

Conclusion

This Baseline Bird Technical Note establishes a comprehensive understanding of key bird species' populations, trends, and distributions relevant to the safeguarding of Blackpool Airport and Warton Aerodrome. It identifies species posing measurable risks to aviation safety, outlines their national and local trends, and provides a baseline for assessing potential impacts from the Transmission Assets on future bird strike risk. The species identified in this baseline are considered in the Applicants' draft Outline Wildlife Hazard Management Plan (S_D3_8). This note forms the first step in the Wildlife Hazard Management Plan strategy as outlined in Strategy for Wildlife Hazard Management Plan - Rev F01 (S_D2_14).

1 Baseline Bird Technical Note

1.1 Background and Aims

1.1.1 Introduction

This document comprises the Baseline Bird Technical Note that characterises bird populations within the vicinity of Blackpool Airport and Warton Aerodrome. It is the first stage of the Applicants' Strategy for Wildlife Hazard Management Plan for the Transmission Assets (S_D2_14) to support the ongoing discussions between the Applicants, Blackpool Airport and BAE Systems (BAE) with regards to the safeguarding of Blackpool Airport and Warton Aerodrome.

The Applicants note that the Transmission Assets lies within the wildlife hazard management zones around the Blackpool Airport and Warton Aerodrome. In accordance with CAP 772 guidance (Civil Aviation Authority (CAA), 2017), the wildlife hazard management zones extend 13km around the Airport and Aerodrome (see Figure 1.1). The Applicants also note that these zones include a number of internationally and nationally important sites, which are designated for their ornithological and ecological interest.

Blackpool Airport and BAE have both raised concerns during the Transmission Assets DCO Examination that the construction of the Projects, in particular the environmental mitigation and biodiversity benefit areas, would increase bird populations and the patterns of use in the area, which would lead to an increase in bird strike risk.

This technical note compiles data from a number of sources to ensure that those bird species posing a birdstrike risk are identified and considered relative to the local area. The information on birds is then used within the Applicants' Strategy for Wildlife Hazard Management Plan for the Transmission Assets (S_D2_14) to understand what the potential implications of the Transmissions Assets mitigation and biodiversity areas could be to determine any increase in hazard risk.

1.1.2 Data Sources

The technical note uses desk-based data from CAA, Wetland Bird Surveys (WeBS), British Trust for Ornithology (BTO), Fylde Bird Club, and the Queensway Farmland Conservation Area and Nature Park. The note also includes data from site-specific bird surveys undertaken by the Applicants within the bird survey area during 2022 and 2024. The results are reported in the following reports:

- Volume 3, Annex 4.1: Breeding birds technical report (document reference F3.4.1)
- Volume 3, Annex 4.2: Wintering and migratory birds – Part 1 and Part 2 (document reference F3.4.2)
- Volume 3, Annex 4.3: Intertidal birds technical report (document reference F3.4.3).

The Applicants understand that Blackpool Airport and BAE undertake regular monitoring of the key bird species as part of their existing wildlife hazard management plans. The Applicants have requested monitoring data from Blackpool Airport and BAE, however at the time of writing monitoring data had not been received.

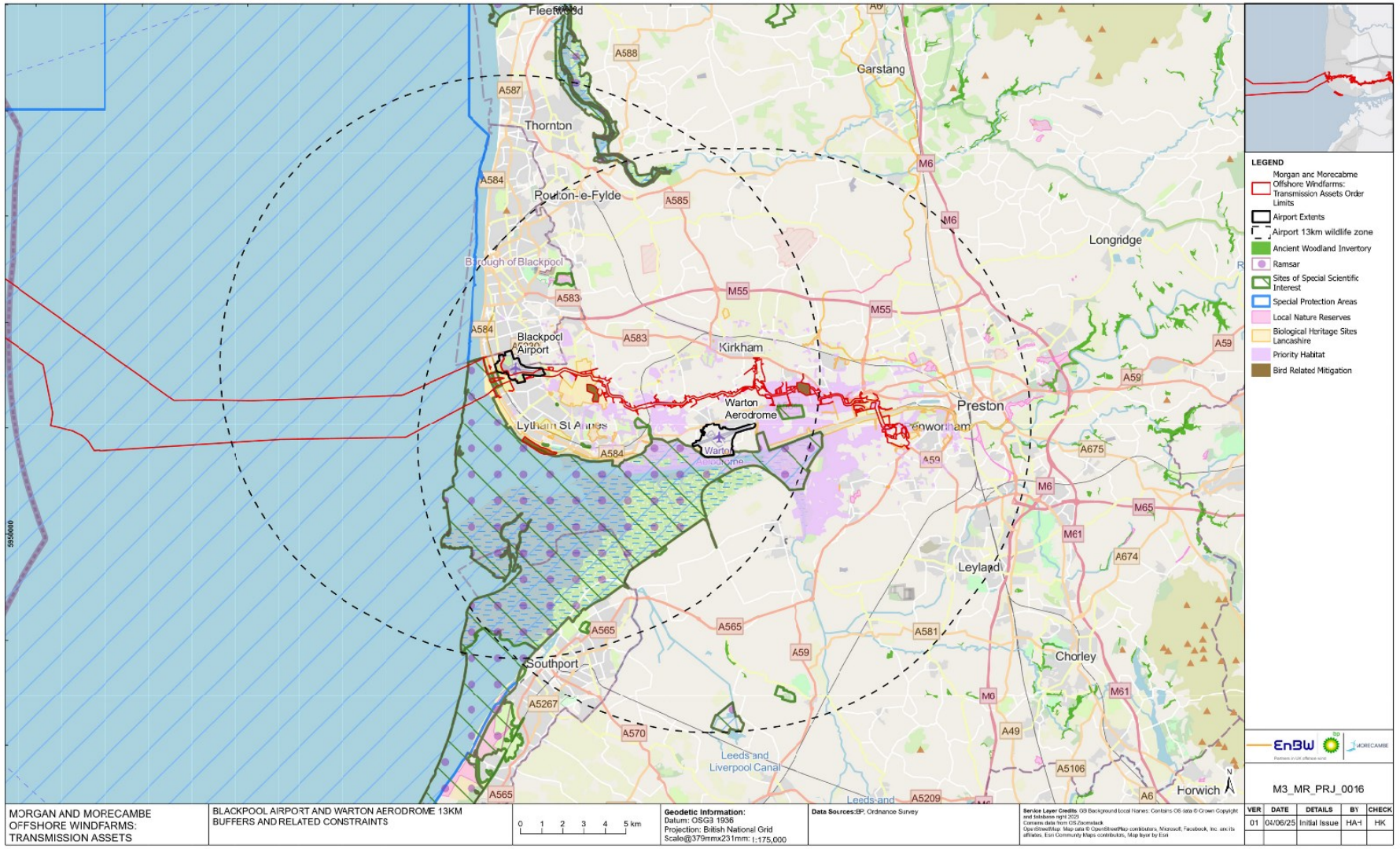

Figure 1.1: Wildlife Hazard Management Zones around Blackpool Airport and Warton Aerodrome

1.1.3 Environmental Mitigation and Biodiversity Benefit Areas

The proposed environmental mitigation and biodiversity benefit areas are listed below and shown on Figure 1.2 and Figure 1.3 and on the Work Plans (document reference B8):

- Mitigation for temporary loss of supporting habitat and/or resource availability, disturbance and displacement at landfall - Fairhaven Saltmarsh (permanent environmental mitigation area) - Work No. 49A/49B
- Mitigation for permanent loss of supporting habitats, disturbance and displacement at the Onshore Substations - Newton with Scales (permanent environmental mitigation area) – Work No. 49A/49B
- Mitigation for permanent loss of Freshfield Farm Pond North and Freshfield Farm Pond South - Pond creation at the Morgan Onshore Substation (permanent environmental mitigation area) – Work No. 49A
- Mitigation for permanent loss of waterbody 133 (Woodside Farm Pond) - Pond creation at Moss Side (permanent environmental mitigation area) - Work No. 49B
- Mitigation for temporary disturbance and displacement at Lytham Moss BHS - Lytham Moss (temporary environmental mitigation area) - Work No. 35A/35B
- Mitigation for temporary and permanent habitat loss at the 400kV grid connection corridor - Lea Marsh Biological Heritage Site (BHS) (temporary environmental mitigation area) – Work No. 35A/35B
- Opportunities for enhanced, restored or newly created habitats - Lea Marsh (biodiversity benefit area) – Work No. 44A/44B

The Applicants identified potentially suitable mitigation and biodiversity benefit areas using a number of criteria and data from desk-based information and site-specific surveys. The site selection process is described in Site Selection of the Environmental Mitigation and Biodiversity Benefit Areas(S_D2_13). The proposed measures for each of the environmental mitigation areas and the biodiversity benefit area are set out in the Outline Ecological Management Plan (oEMP) (document reference J6) and the Onshore Biodiversity Benefit Statement (document reference J11) respectively.

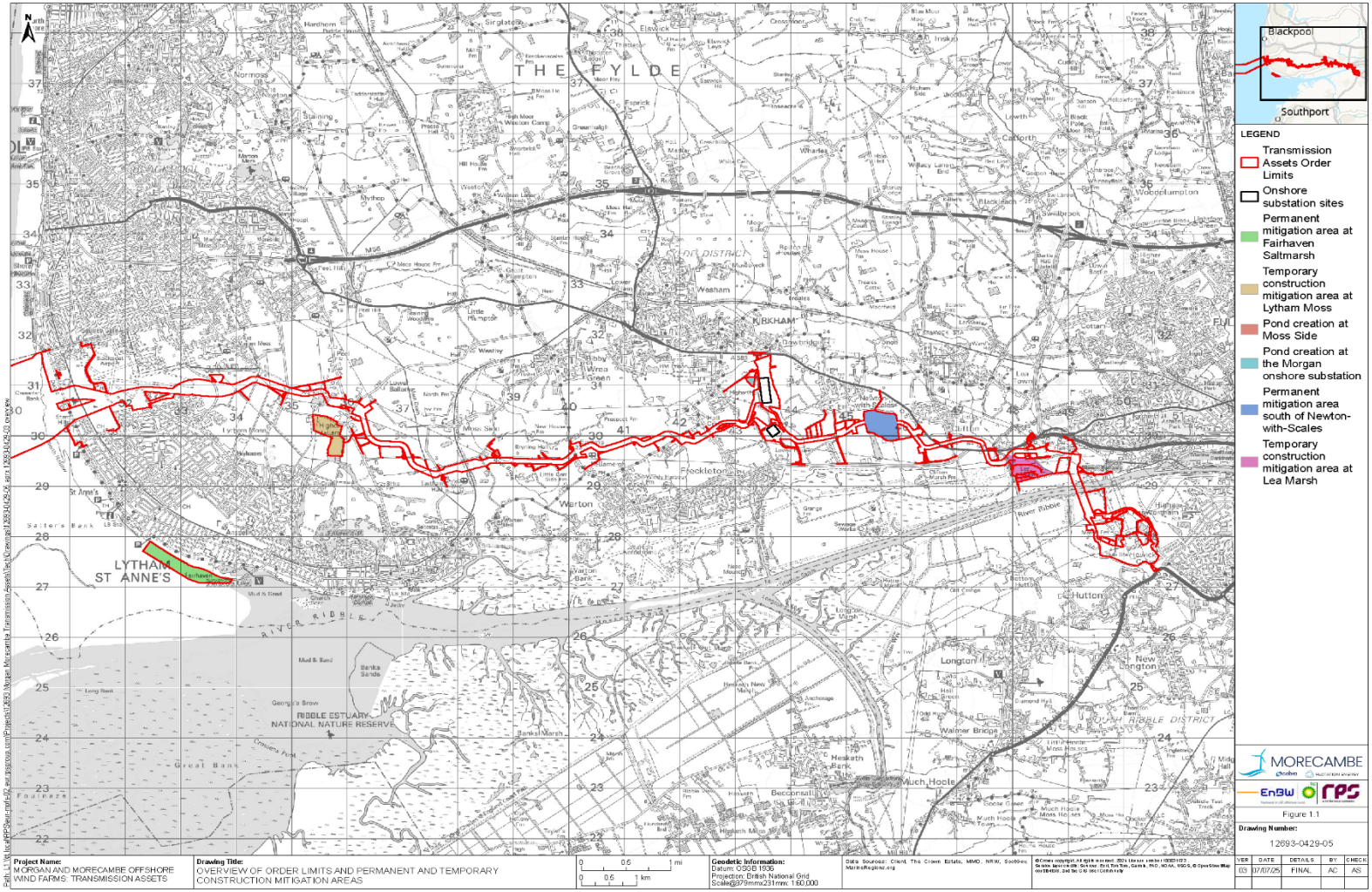

Figure 1.2: Overview of Order Limits and temporary and permanent mitigation areas

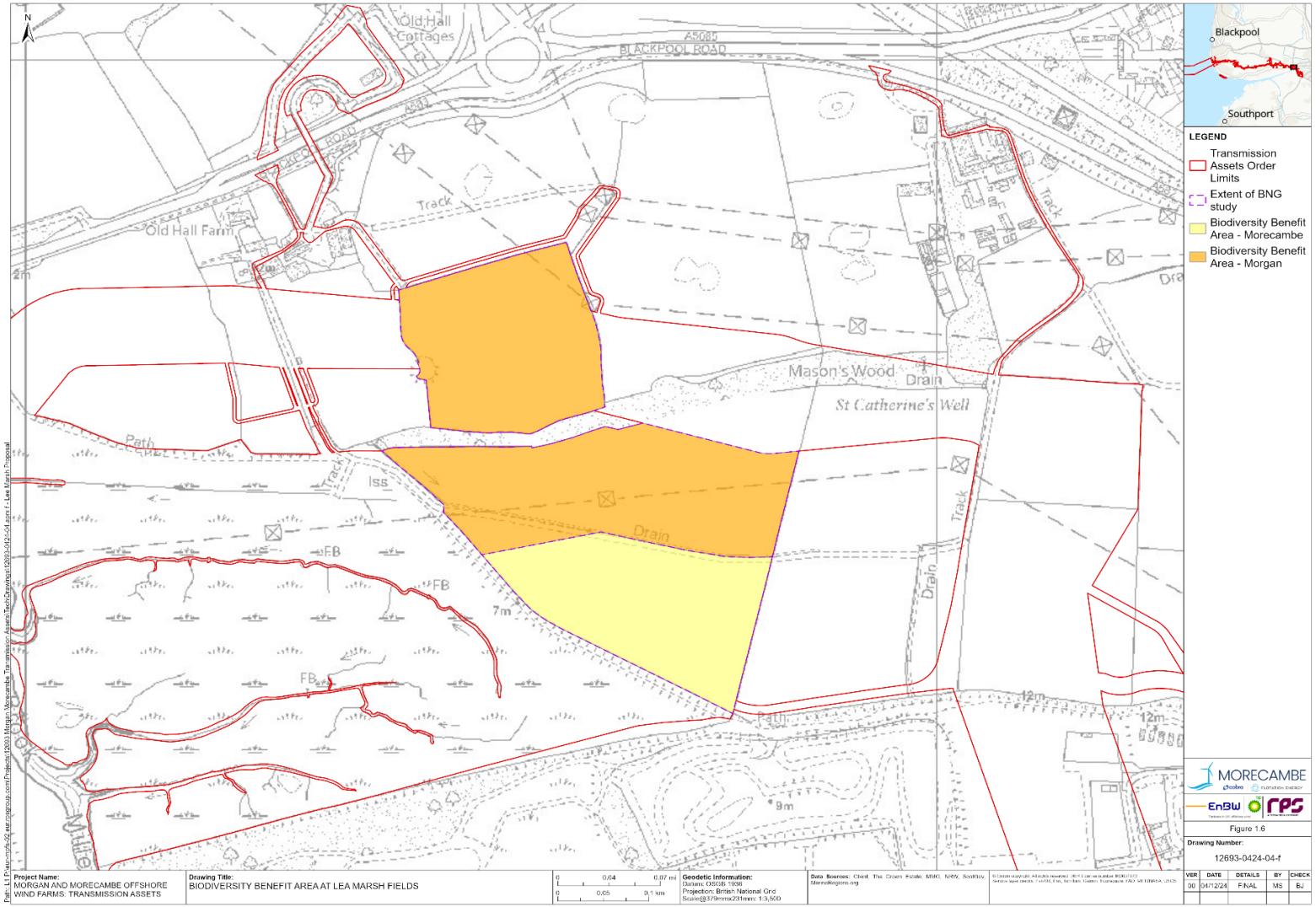

Figure 1.3: Biodiversity Benefit Area at Lea Marsh Fields

1.1.4 Aims of the Technical Note

The overall aim of this technical note is to establish the baseline bird numbers and patterns of use of areas considered within the Wildlife Hazard Management Plan (WHMP). The technical note also seeks to define those species which are at greater risk of colliding with aircraft. This approach allows the wildlife hazard management strategy to focus on those key species that pose the greatest safeguarding risk to Blackpool Airport and Warton Aerodrome.

The characterisation of the baseline is fundamental to understanding the existing and future bird strike risk, and therefore, the Applicants will seek agreement from Blackpool Airport and BAE on this baseline technical note. The technical note aims to:

- Define the species that may increase safeguarding risk for the local airports and aerodromes
- Outline national and, where possible, local bird trends for the species that may pose safeguarding issues for the local airports and aerodromes
- Establish the baseline bird abundance of the species that may increase safeguarding risk for the local airports and aerodromes.

1.2 Screening of Bird Species

1.2.1 Introduction

This section of the technical note provides an overview of published and available data to highlight when most cases of bird strike were reported, and which species were most frequently recorded. This data has been used to inform the screening of which species pose the greatest risk of collision.

1.2.2 Desk-based Data

Whilst it is recognised that all bird species have the potential to collide with an aircraft, there is published evidence from the CAA (CAA, 2025) and Blackpool Airport regarding the species that are likely to cause damage to aircraft and that frequently collide with them.

The risk of collision and chance of damaged is influenced by:

- How common the species is – the commoner species are more likely to be hit.
- Size – larger birds cause more damage.
- Flocking behaviour – groups of birds are more likely to cause significant damage than a single bird.

Therefore large, common birds that form groups (flocks) pose a greater risk to aircraft. In addition, most bird strikes take place within 500 ft of the ground meaning that the take-off and landing phases are the riskiest periods (Figure 1.4), therefore those species that are present near to airport runways pose a greater risk.

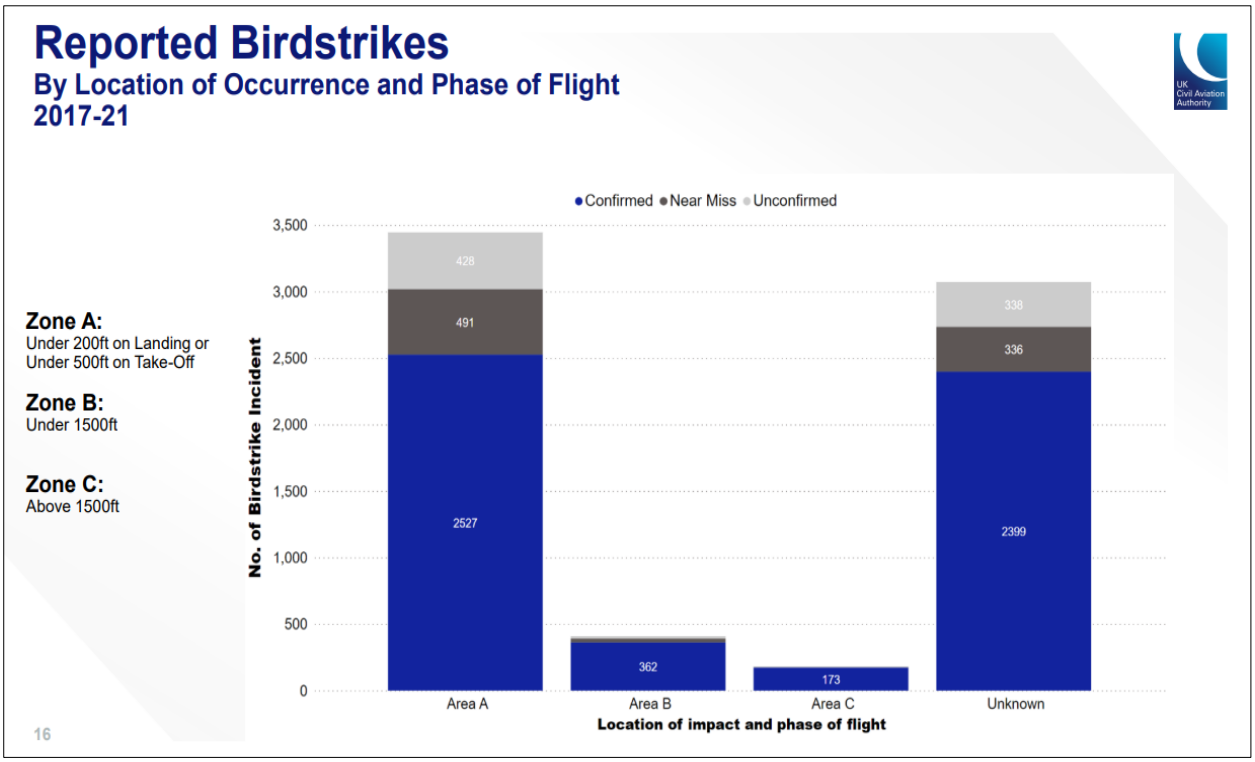

Figure 1.4: Bird strike by altitude (CAA, 2025)

The frequency and abundance of bird species is also impacted by season, with the number of different species/species groups being present in different numbers influenced by whether they are breeding or non-breeding. During the breeding season many bird species adopt smaller foraging ranges than during the non-breeding season. This may present a greater risk to aircraft if colonies are known to breed close to an airport.

The CAA data shows more collisions during the breeding and post-breeding (when bird populations are increased due to the presence of recently fledged young). Periods within the winter months tend to pose lower risk nationally (Figure 1.5); however, this may vary depending upon the geographic location of a given airport.

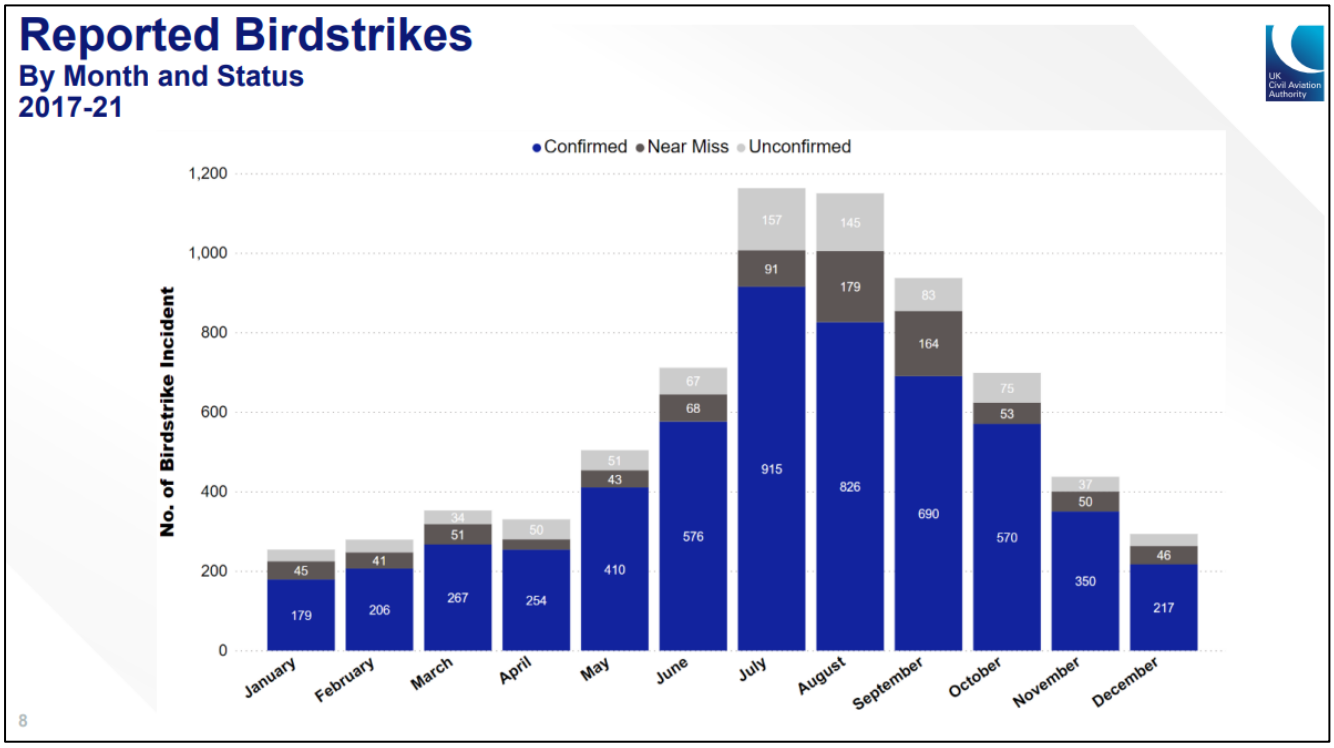

Figure 1.5: Reported bird strikes by month (CAA, 2025)

Whilst the size of species can influence the level of potential damage to an aircraft, data from the CAA suggests that some large species (e.g., wild geese and swans), cause very few collisions (CAA, 2025).

The CAA data also shows that at a national level, gulls pose the greatest risk to aircraft (Figure 1.6). This data also indicates that there is generally a low likelihood of damage to aircraft from most bird strikes, particularly for smaller birds that do not gather in flocks.

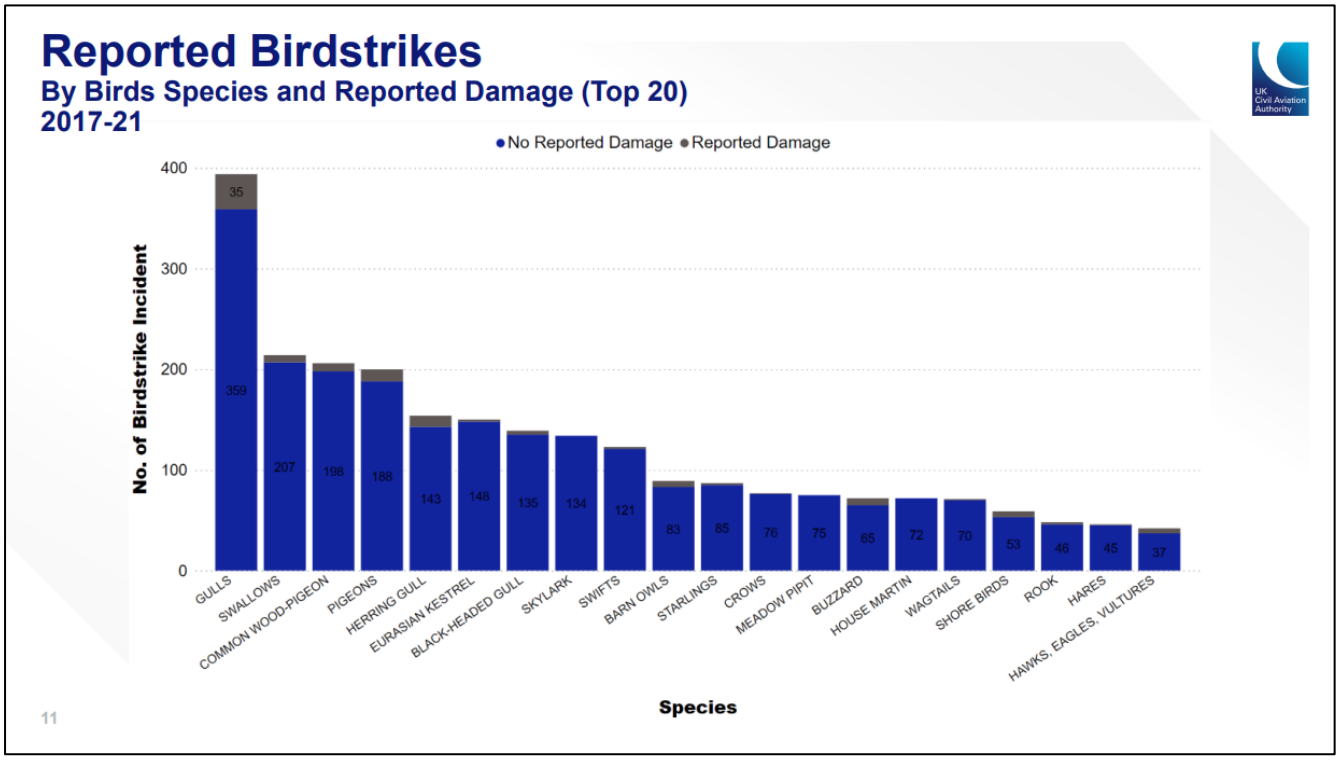

Figure 1.6: Reported bird strikes by species (CAA, 2025)

These findings are reflected at a local level in the five-year Blackpool Airport data (Figure 1.7) which show no collisions for geese despite there being a considerable winter population distributed between the Dee Estuary and Morecambe Bay. Blackpool Airport also backs onto Lytham Moss, which has been identified as Functionally Linked Land for pink-footed goose (Bowland Ecology, 2021), with numbers in excess of 10,000 geese congregating there (Blackpool Airport – Wildlife Hazard Risk Assessment and Management Plan, 2025). However, this could be due to the type of aircraft that often utilise Blackpool Airport.

The following summary is taken from the Blackpool Airport – Wildlife Hazard Risk Assessment and Management Plan (Johnson, 2025).

'Due to the airfield location and surrounding areas consisting of coastline, estuaries, farmlands there is a large scale of bird activity within the 13km consisting of a wide variety of species of which many fall within higher risk categories for bird strikes such as large and heavy birds and/or those species with the potential to flock in large numbers.

Considering this however, there are comparatively low bird strikes reported on aircraft operating at Blackpool Airport with gull species being the more common when strikes do occur. There are no reports of geese or wading species having been struck in recent years despite the location of these birds around the airfield.'

It should be noted that the Wildlife Hazard Risk Assessment and Management Plan for BAE Warton has not yet been provided to the Applicants. The Applicants have requested this from BAE Warton.

	Gulls					Corvids				Waders			Geese			Others/Passerines				
	Black Headed	Herring Gull	Common Gull	Lesser BB	Greater BB	Rook	Magpie	Crow	Jackdaw	Lapwing	Oystercatcher	Curlew	Greylag	Pink Footed	Canada	Starling	Swallow/Swift	Pigeon	Skylark	Kestrel
2019		1	1														1			
2020		1	1																1	
2021		4																1		
2022		4	2						1											
2023		7	1				1													1

Figure 1.7: Blackpool Airport five-year bird strike data

The most recent bird strikes (five-year data) at Blackpool Airport were caused by gulls, with corvids, pigeons, and kestrels also posing a risk ((Figure 1.7) (Johnson, 2025). Additionally, there was one bird strike involving swallows or swifts and another involving a skylark. However, Blackpool Airport does not assess the individual risk for these species, and since the impact is considered negligible, they fall under the generic management plan with no targeted measures.

Based on information from Blackpool Airport's Wildlife Hazard and Risk Management Plan (Johnson, 2025), there are several small, non-flocking, or ground-based bird species, such as warblers, finches, larks, sparrows, buntings, and partridges, that have been excluded from further scrutiny due to the negligible severity of their potential impact). Therefore, the risk to aircraft safety posed by these species is not considered further in this technical note.

Table 1: Blackpool Airport Assessment of Bird Strike on Aircraft

Score	1	2	3	4	5
Impact Definition (Bird Hazard Potential)	**Neglible-** Confirmed birdstrike /wildlife strike (No aircraft damage)	**Minor -** Confirmed birdstrike with light damage	**Major -** Aircraft damage-major within airworthiness tolerances	**Hazardous -** Aircraft significantly damaged outside airworthiness tolerance-accident crash narrowly avoided	**Catastrophic -** Extensively damaged aircraft beyond repair/ Aircraft accident / Loss of Life / High number of serious injures
Species	Linnet Skylark Grasshopper warbler Tree sparrow Reed bunting Grey partridge Corn bunting	**Single Strike** - Starling, Kestrel	**Single Strike:** Woodpigeon	**Single Strike:** **Corvids**-Rook, Magpies, Carrion Crow, Jackdaw Starling **Waders** – Lapwing, Oystercatcher, Curlew , black-tailed Godwit **Gulls:** Herring Gull, Lesser black-backed gull, Common Gull, Black-headed gull **Multiple Strike:** Woodpigeon	**Single or Multipe Strike:** Geese- Pink-footed, Greylag, Canada Whooper Swan, Bewick's Swan **Multiple Strike:** **Corvids**-Rook, Magpies, Carrion Crow, Jackdaw **Starling** **Waders** – Lapwing, Oystercatcher, Curlew , black-tailed Godwit **Gulls:** Herring Gull, Lesser black-backed gull, Common Gull, Black-headed gull

1.3 Baseline bird trends and baseline abundance

1.3.1 Methods

National and reginal trend

Trends in abundance over time were reviewed for the species listed in Table 2. For waterbird groups (swans, geese, ducks, and waders), trends from the Wetland Bird Survey (WeBS) were presented (Woodward, 2024).

The WeBS survey results provided a comprehensive dataset that can be analysed to derive trends in bird populations over time. By comparing the indices across multiple years, it is possible to determine whether populations are increasing, decreasing, or remaining stable.

Fylde Bird Club data

Fylde Bird Club records data of all birds across Fylde Borough. Data collected by the Fylde Bird Club was used to supplement the Applicants' bird surveys reported in:

- Volume 3, Annex 4.1: Breeding birds technical report (document reference F3.4.1)
- Volume 3, Annex 4.2: Wintering and migratory birds – Part 1 and Part 2 (document reference F3.4.2)
- Volume 3, Annex 4.3: Intertidal birds technical report (document reference F3.4.3).

This data, provided in tetrads (2 x 2 km OS grid squares), covers all tetrads intersecting the proposed Onshore and Intertidal Order Limits, along with a 500 m buffer used for ornithological surveys.

To prepare the data for baseline analysis, the last 50 months (five years) of records were aggregated into monthly sums. These monthly maximums were averaged over five years and compared against known SPA populations for the Ribble

However, the Fylde Bird Club data has several limitations:

- **Survey Bias**: Fylde Bird Club does not collect data systematically, which may result in surveyor bias. Some areas may have significantly greater spatial and temporal coverage than others. Without knowledge of survey effort, direct comparisons between different areas should be approached with caution. It is likely that areas with higher bird populations are more frequently monitored.
- **Species Recording**: The specific birds recorded by surveyors and the criteria for their identification are unknown. Some species, such as the pink-footed goose, may have been counted more frequently, while others, like the naturalized Canada goose, may have been overlooked.
- **Double Counting**: There is a possibility of double counting, as multiple birders may submit records for the same birds, particularly for scarcer species.
- **Data Contribution**: The dataset includes contributions from various individuals, and it is unclear whether any count calibration was conducted among birders, as is typically done by the British Trust for Ornithology (BTO).
- **Bird Status:** Both grounded birds and those in flight have been recorded, but it is not always clear whether birds were observed in flight or on the ground.
- **Seawatching Bias**: The spatial results indicate a strong bias toward seawatching at southern Blackpool, where birders observe migratory movements over the sea. While this data may aid in bird strike mitigation plans, it does not pertain to the proposed mitigation areas, as these birds are merely passing through offshore.

The Fylde Bird Club data distribution maps display five-year records from Fylde Bird Club for the species groups discussed in this report. The data are organized into tetrad squares, representing the average annual number of birds recorded per square over five years. It is important to note that these figures may be overestimates, as the same groups of birds may have been counted multiple times. Despite potential inaccuracies, the hotspot effect likely indicates areas of high and low bird densities. The seawatching effect is particularly pronounced in many of these maps, especially for winter thrushes, where incoming redwings may have been counted as they pass at sea.

The Applicants' data

The distribution maps display two-year records from the Applicants for the species groups discussed in this report. The data are organized into 200 x 200 m grid squares, with the total number of records divided by survey effort to produce an average. Although the Applicants' data was collected systematically and does not

have the same temporal and spatial coverage as that from Fylde Bird Club, it provides a robust snapshot of bird abundance and distribution in the survey area between 2022 and 2024.

1.3.2 Summary of findings

The list of species in Table 2 has been compiled based on a review of bird strike data from both the CAA and Blackpool Airport. These grouping categories are consistent with those used by Blackpool Airport in its existing wildlife hazard management plan. Blackpool Airport has confirmed that these species present the greatest risk of collision. A request has been sent to BAE Warton to confirm that they are also in agreement with the species which need to be considered as part of the Outline Wildlife Hazard Management Plan.

The remaining sections of the technical note (including appendix) focus on these key species listed in Table 2. The key species at risk of colliding with aircraft (as set out in Table 2) exhibit different trends in abundance.

Table 2 presents evidence of these species' trends at both the national and local levels, using data from the Fylde Club bird records and the Applicant's own data. Further detailed information can be found in the Appendix A.

Table 2: Trend and abundance of key species considered at risk of collision with aircraft

Group	Species	Summary of findings
Swan	Bewick's swan,	Declined 86% nationally in 50 years, rare locally, unlikely risk.
	Whooper swan	Largest UK swan, population increasing nationally, stable locally with a recent peak
	Mute swan	Stable population nationally and locally
Geese	Canada goose	Population increasing nationally and locally
	Greylag goose	Increasing nationally and locally, but abundance in and around the Ribble Estuary is low.
	Pink-footed goose	Migratory, population nearly doubled nationally, with significant local fluctuations and high numbers at times
Ducks	Shelduck	National decline since 1990s but local increase.
	Mallard	National decline in wintering population, local recent decline
	Wigeon	Nationally stable to slight decline, local decline
	Teal	Nationally stable, local stable with fluctuations
Waders	Oystercatcher	Stable nationally, local decline
	Golden plover	Doubled nationally since 1970s, local population fluctuating
	Lapwing	Declining nationally, locally stable with recent increase
	Redshank	Stable nationally, local decline
	Black-tailed godwit	Increasing nationally, local fluctuations with recent decline

Group	Species	Summary of findings
	Curlew	Decline nationally and locally with fluctuations.
Gulls	Black-headed gull	Declining nationally, local decline with fluctuations.
	Common gull	Declining nationally, local decline.
	Herring gull	Declining nationally and locally, shifting to urban nesting.
	Lesser black-backed gull	Declining nationally, local decline; breeding colony present locally.
	Great black-backed gull	Low risk, marine species not likely to be found inland in high numbers.
Corvids	Magpie	Slight increase nationally, local distribution unknown.
	Jackdaw	Increasing nationally but recent slight decrease, local data unavailable
	Rook	Declining nationally, local data unavailable.
	Carrion crow	Increasing nationally, local data unavailable.
Pigeons	Woodpigeon	Increasing nationally, local data unavailable
Starling	Starling	Long-term decline nationally, local data unavailable.
Winter thrushes	Redwing	Winter visitors with numbers influenced by food availability, local distribution varies by year.
	Fieldfare	

1.4 Conclusions

The Applicants have adopted a systematic approach, utilising multiple data sources to identify bird species likely to pose a strike risk to both Warton and Blackpool Airports. Species identified as presenting a measurable risk to aircraft safety include swans, geese, ducks, waders, gulls, corvids, and others, with targeted management plans implemented for certain high-risk species.

It is evident that bird populations in the area fluctuate annually; for example, all geese species are increasing in number, whereas populations of both herring gull and common gull are in decline.

These population fluctuations are likely to affect the existing wildlife hazard management plans at both Warton Aerodrome and Blackpool Airport.

Information on species and population trends has been incorporated into the Applicant's Wildlife Hazard Management Plan (S_D3_8) to qualitatively assess potential hazards associated with mitigation and biodiversity areas.

1.5 References

Allan J. A., 2006. Heuristic risk assessment technique for birdstrike management at airports. Risk Anal.26(3):723-9. doi: 10.1111/j.1539-6924.2006.00776.x. PMID: 16834629.

British Trust for Ornithology (BTO). 2025. BirdFacts. Available at: https://www.bto.org/learn/about-birds/birdfacts

Brides, K., Wood, K.A., Hall, C., Burke, B., McElwaine, G., Einarsson, O. and Rees, E.C., 2021. The Icelandic Whooper Swan *Cygnus cygnus* population: current status and long-term (1986–2020) trends in its numbers and distribution. Wildfowl, 71(71), pp.29-57.

Civil Aviation Authority (CAA), 2025. UK reported birdstrikes Available at: https://www.caa.co.uk/media/hindyrm4/uk-reported-birdstrike-2017-2021.pdf

Woodward, I.D., Calbrade, N.A., Birtles, A., Feather, G.A., Peck, K., Wotton, S.R., Shaw, J.M., Balmer, D.E. and Frost, T.M. 2024. Waterbirds in the UK 2022/23: The Wetland Bird Survey and Goose & Swan Monitoring Programme. BTO/RSPB/JNCC/NatureScot. Thetford.

Appendix A: Species accounts detailing trends and abundance

The information presented in the following section is drawn from multiple sources, however the national bird trend data is based upon BTO data. The BTO index values are calculated by collecting annual bird counts from multiple sites, standardizing the data to account for variations in survey effort, and using statistical models to estimate population trends over time. The index is scaled relative to a baseline year, showing how bird populations have increased or decreased compared to that reference point. The WeBS data local to the Ribble Estuary presents actual bird counts to provide an indication of the trends in the area.

Swans

Swans are large waterfowl that are often found in aquatic environments such as lakes and rivers, but they also forage in terrestrial habitats, including farmland. Due to their size and weight, collisions between swans and aircraft can pose significant risks, potentially leading to catastrophic impacts. Their large wingspan and body mass make them particularly dangerous in the event of a collision with an aircraft. Information regarding the seasonality of swans in the Blackpool area is presented in Table A.3 below.

Table A.3: Swan facts and seasonality (BTO, 2025)

Species	Length	Wingspan	Weight	Seasonality in Blackpool area											
Bewick's swan	115 – 127 cm	170 – 195 cm	4.6 – 7.4 kg	J	F	M	A	M	J	J	A	S	O	N	D
Whooper swan	140 – 160 cm	205 – 235 cm	6.9 – 11.1 kg	J	F	M	A	M	J	J	A	S	O	N	D
Mute swan	140 – 160 cm	200 – 240 cm	6.3 – 13.4 kg	J	F	M	A	M	J	J	A	S	O	N	D

Orange = present
Yellow= present in low numbers
Green = not present

Bewick's swan

National trend

The population of Bewick's swan wintering in the UK is believed to have declined by 86% over the last 50 years (Wildfowl and Wetlands Trust, 2025). Additionally, there has been an eastward shift in their distribution, which is thought to be linked to warmer continental winters that cause the birds to overwinter closer to their breeding grounds (Beekman *et al.*, 2019).

Regional trend

The west coast of the UK represents the western range limit for wintering Bewick's swans, and the Ribble Estuary wintering population has been ranging from zero to

six individuals of the last eight reported winters (Woodward *et al*., 2024). Given its local rarity and the eastward shift in distribution, it is concluded that Bewick's swan is unlikely to pose a risk.

Whooper swan

National trend

Whooper swans are the largest swans found in the UK. The entire UK winter population breeds in Iceland, with the birds leaving in April and returning in October. These wild swans feed, travel, and roost in groups.

At the national level, the WeBS results have shown an increase in the number of wintering whooper swans in England (Figure A.8). This population increase has steepened since the early 2000s. The WeBS findings are supported by the results of the eighth international census of whooper swans (Cygnus cygnus) wintering in Britain, Ireland, and Iceland (Brides *et al*., 2021) (Figure A.9), which also found significant increases in distribution over the same time periods (Figure A.10) with the population showing a general shift in wintering distribution toward the southeast (Brides *et al*., 2021). Among the whooper swans recorded in England, there was a clear preference for arable land, with 80.7% of the English sightings occurring on arable land (Brides *et al*., 2021).

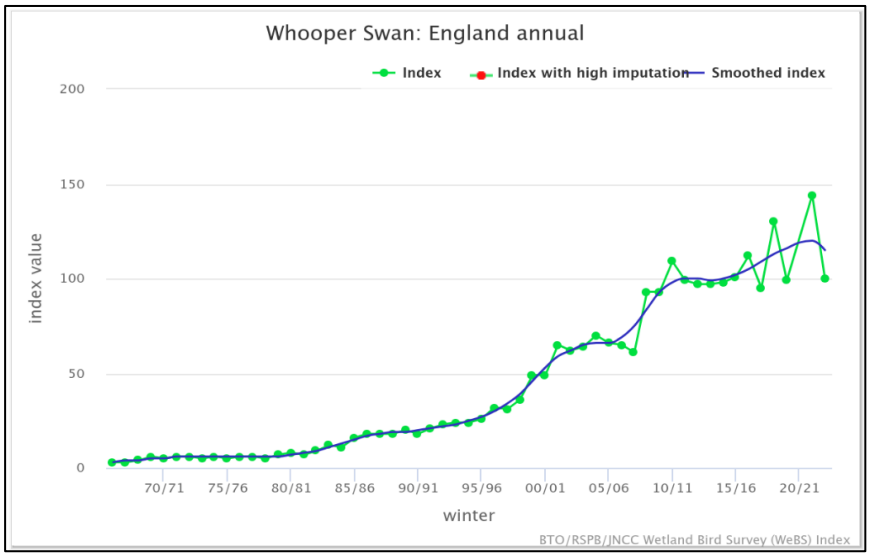

Figure A.8: The English population trend for whooper swan (WeBS (Woodward *et al*., 2024)).[1]

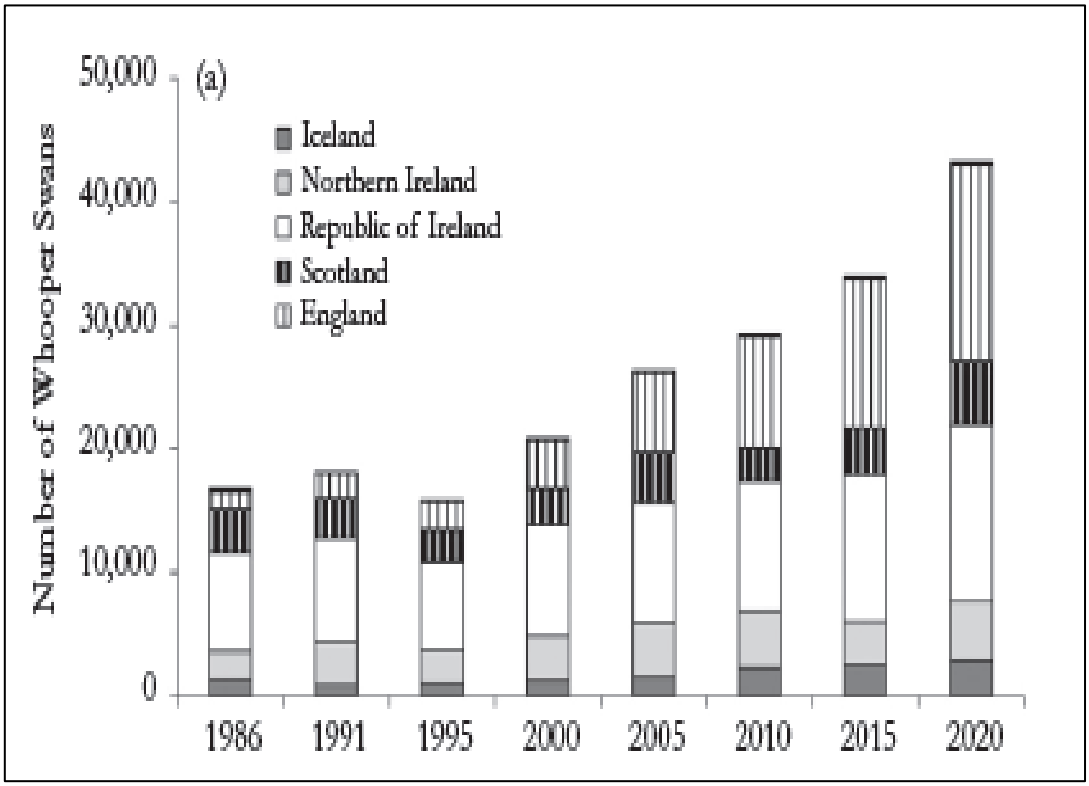

Figure A.9: The UK population trend for whooper swan (Brides *et al.* (2021)).

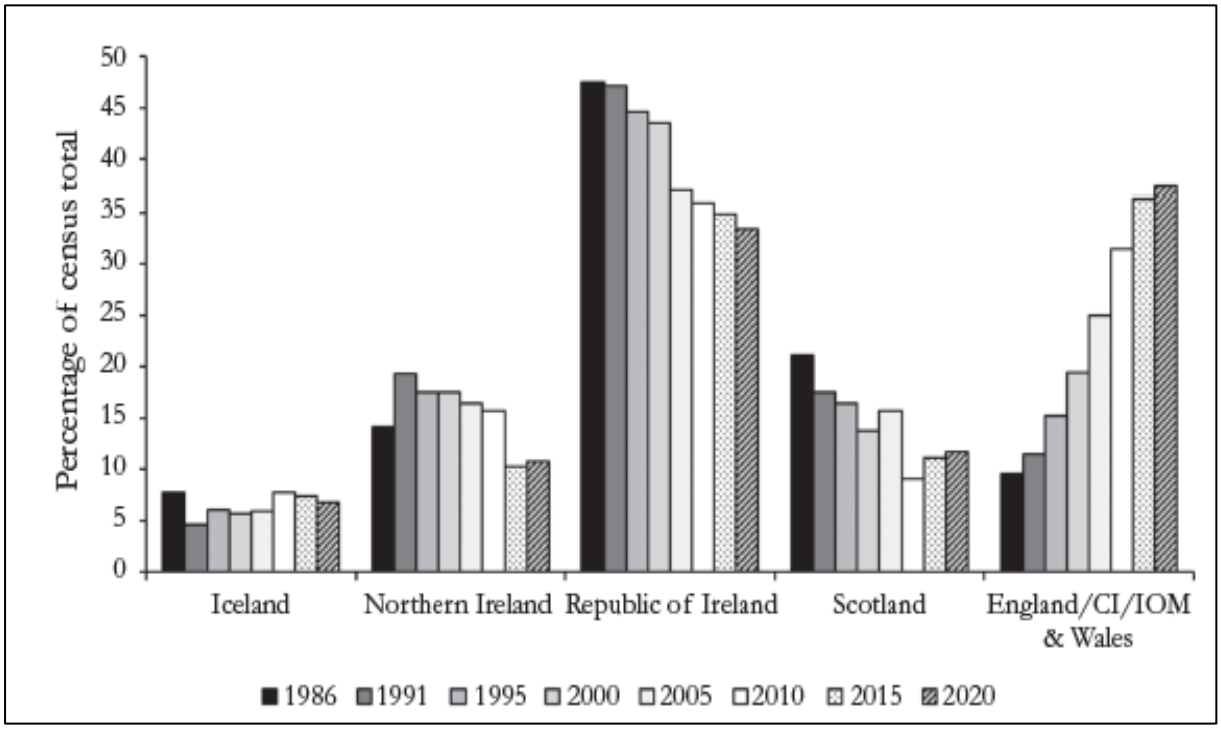

Figure A.10: The UK distribution trend for whooper swan (Brides *et al.* (2021)).

Regional trend

At the local scale, the 20-year trends for the whooper swan in the Ribble Estuary have been generally stable, with fluctuations resulting in a five-year mean of fewer than 500 birds (Figure A.11). However, there was a sharp increase during the winter of 2022/23, with numbers exceeding 2,000 birds. Due to a lack of recent data, it is currently unclear whether this was a one-time peak or if it signifies a shift toward an increasing population of whooper swans in the Ribble Estuary.

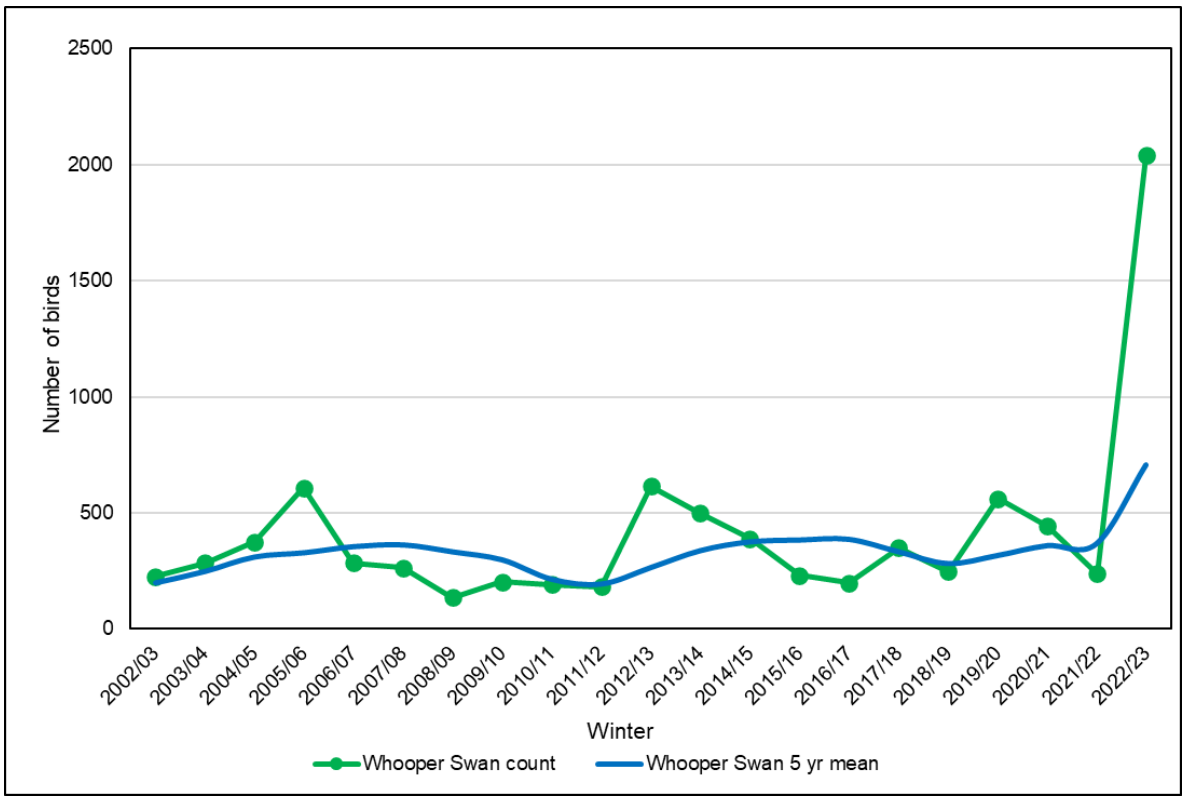

Figure A.11: The 20-year Ribble Estuary trend for whooper swan WeBS.

Mute swan

They are present all year although usually only in family groups and spend a considerable amount of time on waterways.

National trend

Nationally mute swan had a huge increase in population in the 1980s and 1990s however this has smoothed off and the current national trend is fairly stable with fluctuations (Figure A.12).

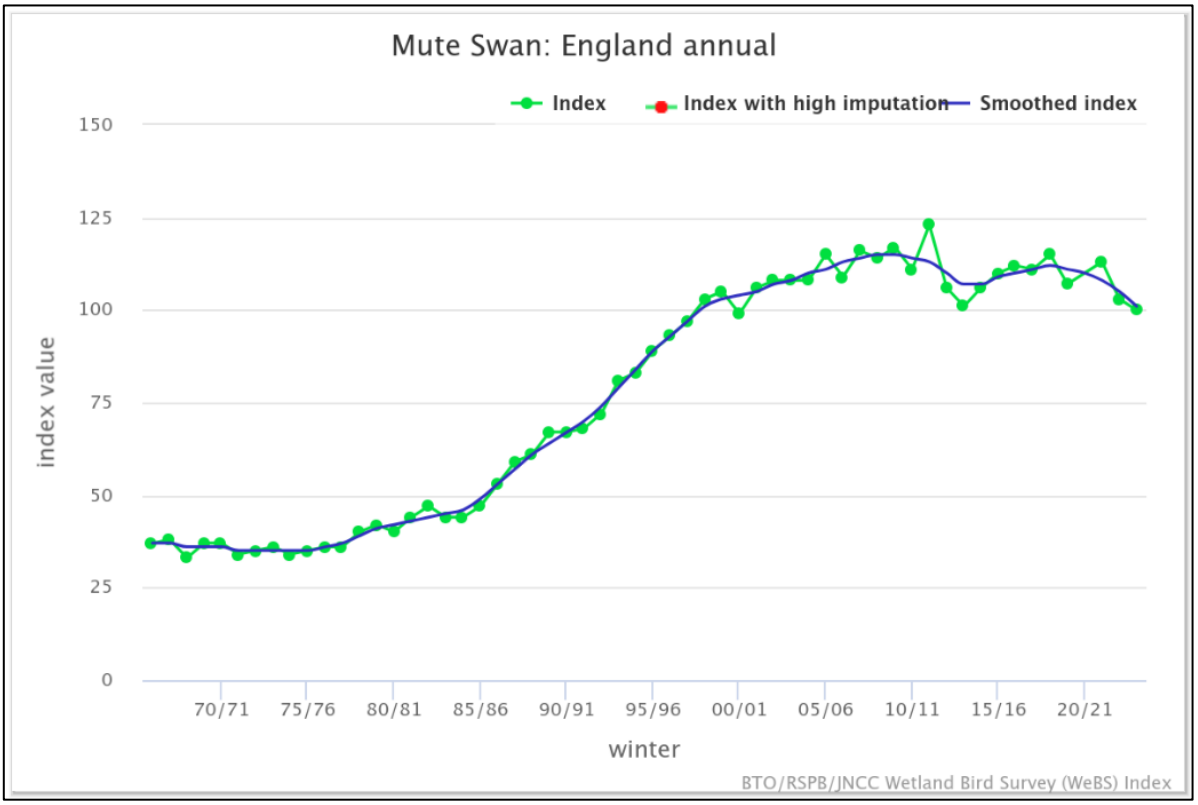

Figure A.12: The English population trend for mute swan (taken from the WeBS (Woodward *et al.*, 2024)).[1]

Regional trend

At the local scale the population has been relatively stable between 200 and 300 birds over the last 20 years, again there are fluctuations in this (Figure A.13). Unlike other swan species, they do not tend to concentrate or flock as much in this area.

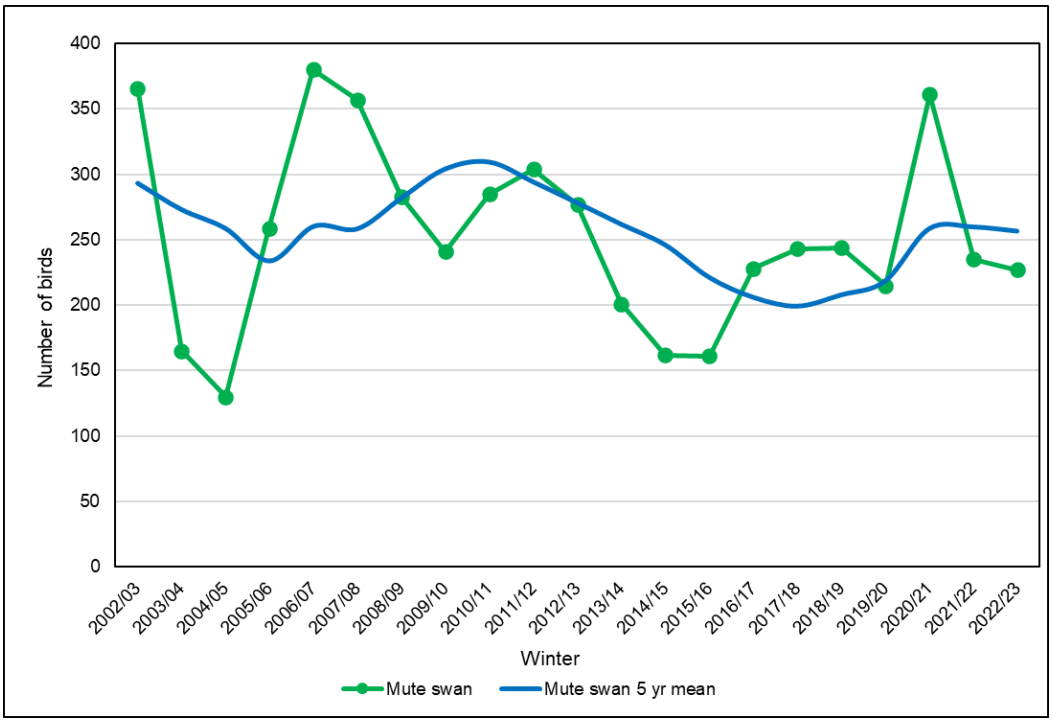

Figure A.13: The 20-year Ribble Estuary trend for mute swan as taken from the WeBS.

Fylde Club Bird Data regarding swans

Swans are also included in the seawatching data; however, the highest concentrations are found on the saltmarshes at Warton (Figure A.14). From these sites, they move to feed in lower concentrations in the farmland northwest of Warton and at Lytham Moss. Most records pertain to whooper swans, as Bewick's swans are very rare and mute swans are recorded in much lower numbers than whooper swans.

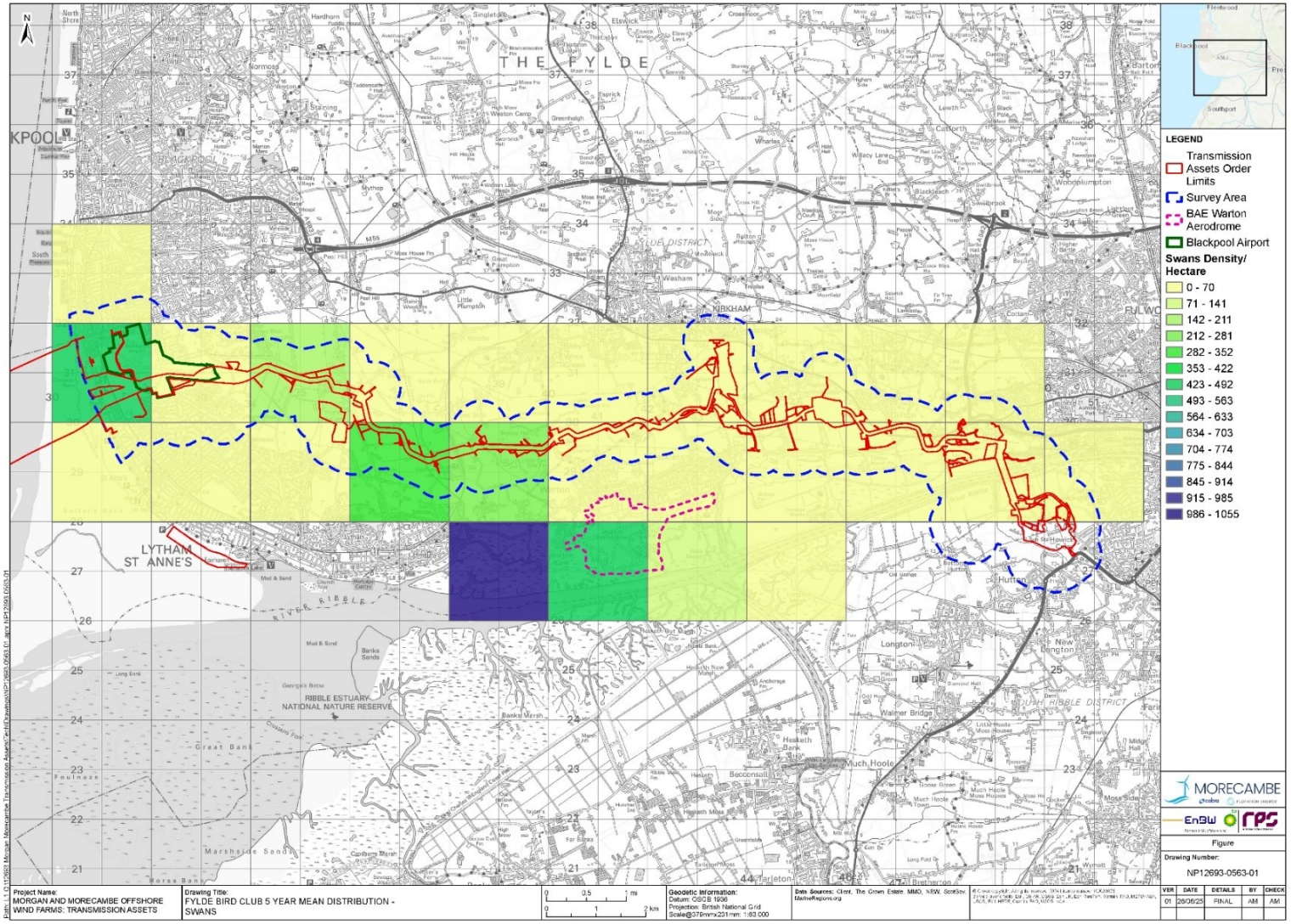

Figure A.14: Fylde Bird Club five-year average distribution of swan from 2018/19 – 2022/23

The Applicant's Data regarding swans

Whooper swans were the most abundant species, resulting in a biased distribution. Most whooper swans were found around Lytham Moss (Figure A.15), with additional records from the area south of the Ribble. The remaining distribution consists of mute swans, which were present around deeper watercourses and scattered water bodies throughout the survey area.

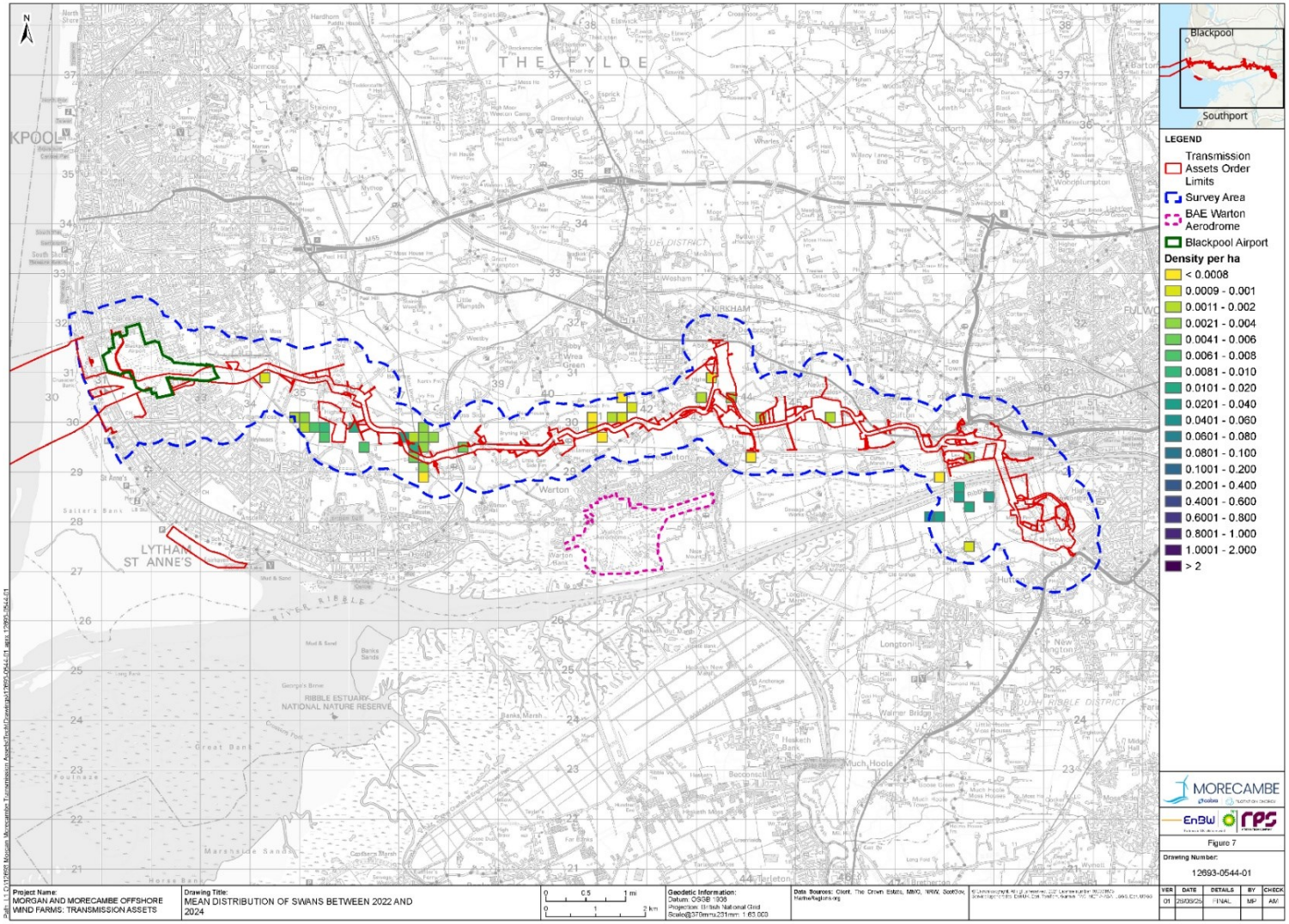

Figure A.15: The Applicants' two-year average (2022 to 2024) distribution of swans

Geese (all species)

This group of birds are associated with water but often use terrestrial habitats such as farmland when feeding. They are medium large birds between 64 – 84cm in length with wingspans between 137 – 168cm and they weigh between 2 – 3kg. Due to their size and habits of flying in sometimes large flocks, aircraft collisions with geese would likely result in a catastrophic impact. Information regarding the seasonality of geese in the Blackpool area is presented in Table A.4.

Table A.4: Goose facts and seasonality (BTO, 2025)

Species	Length	Wingspan	Weight	Seasonality in Blackpool area											
Canada goose	80 – 105 cm	155 – 180 cm	3.2 – 4.95 kg	J	F	M	A	M	J	J	A	S	O	N	D
Greylag goose	74 – 84 cm	149 – 168 cm	2.4 – 4 kg	J	F	M	A	M	J	J	A	S	O	N	D
Pink-footed goose	64 – 76 cm	137 – 161 cm	2.2 – 3.4 kg	J	F	M	A	M	J	J	A	S	O	N	D

Orange = present
Yellow= present in low numbers
Green = not present

Canada goose

National trend

The UK population of Canada geese consists of naturalized birds that were formerly domestic but now live in the wild. Most of these geese are sedentary, although some from more northern regions do migrate. They are present year-round, though they may be found in smaller groups during the breeding season.

At the national scale, the English population of Canada geese has increased significantly since the Wetland Bird Survey (WeBS) began (Figure A.16), and the population continues to rise. These naturalised geese are generally sedentary or short-distance migrants, with some individuals moving from upland areas during the winter months.

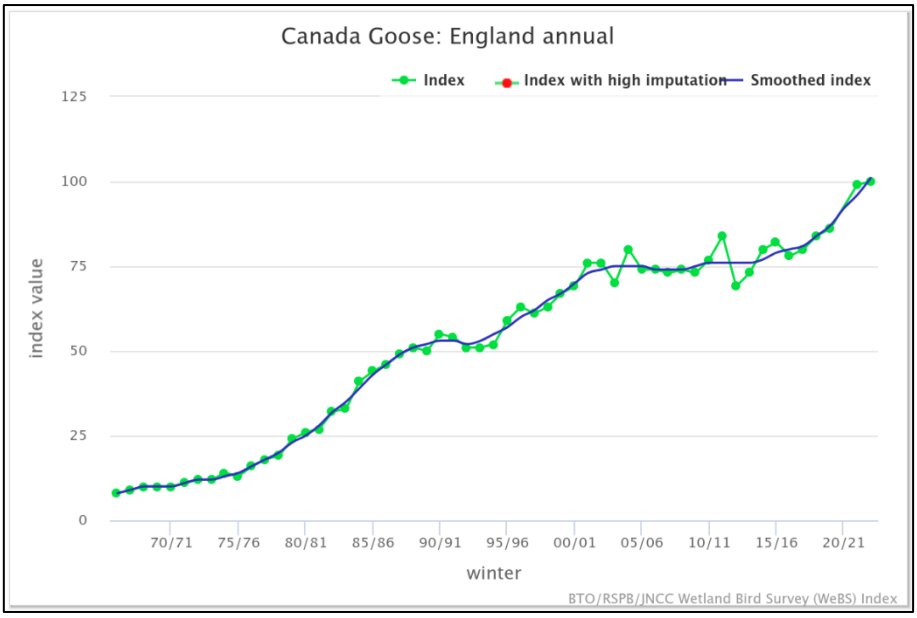

Figure A.16: The English population trend for Canada goose (WeBS (Woodward *et al.*, 2024)) [1]

Regional trend

At the local scale, the Ribble Estuary has experienced an increase in the Canada goose population, rising from fewer than 1,000 birds in the early 2000s to nearly 6,000 birds in 2022/23.

Greylag goose

National trend

Greylag geese in the UK are largely sedentary; however, the population increases during the winter months as wild Icelandic birds return to winter in Scotland. Most of the English population consists of naturalized geese. They are present year-round, although they may be found in smaller groups during the breeding season.

At the national scale, the English population of greylag geese has increased significantly since the Wetland Bird Survey (WeBS) began (Figure A.17), and it currently appears to be continuing to rise. This population is a mix of naturalized and wild geese, with the naturalized birds generally being sedentary, while the wild geese are migrants that breed in Iceland.

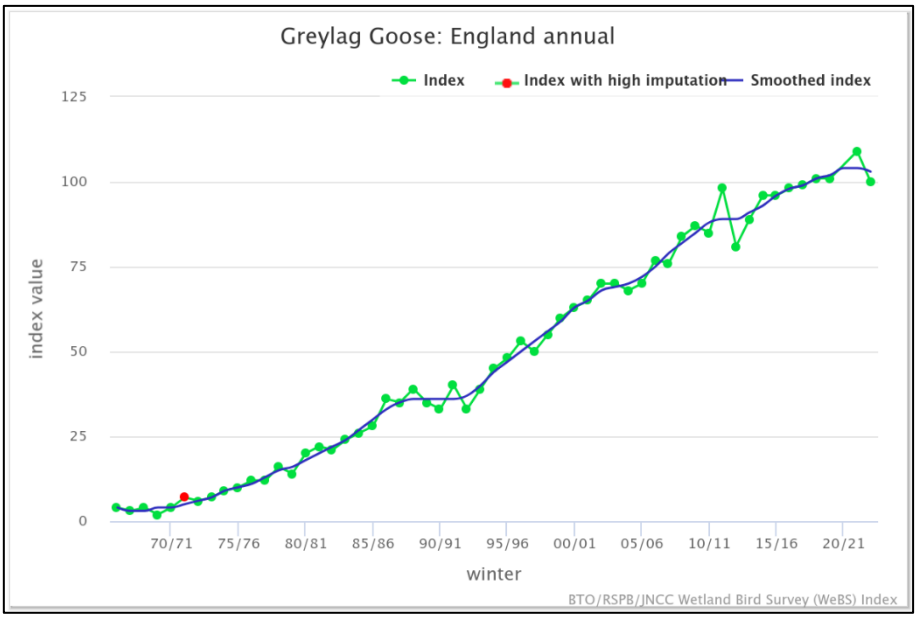

Figure A.17: The English population trend for greylag goose (WeBS (Woodward *et al.*, 2024))[1]

Regional trend

At the local scale, although there is considerable fluctuation from year to year, the population of greylag geese in the Ribble Estuary is increasing (Figure A.25). Despite this growth, the population remains relatively low compared to other goose species, with an estimated nearly 1,400 birds in 2022/23.

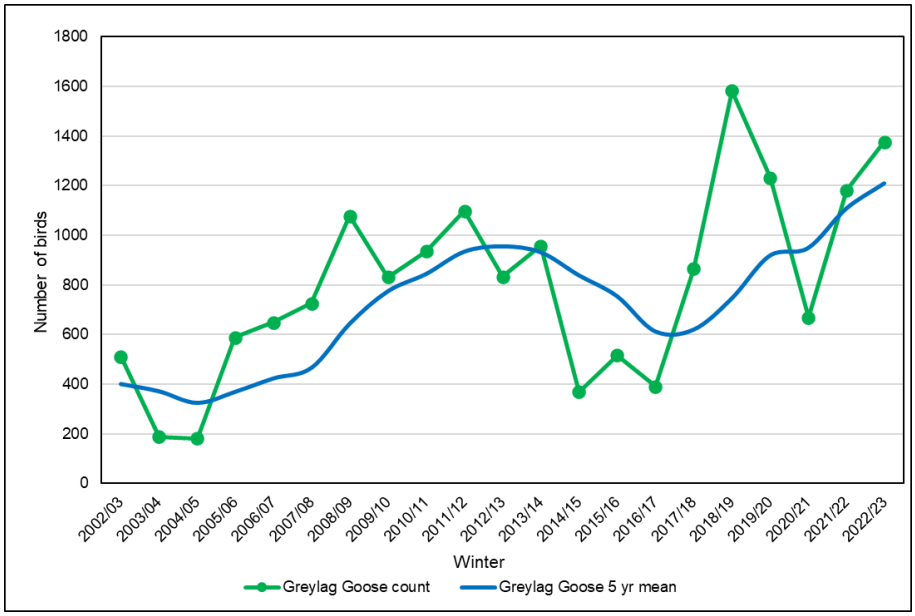

Figure A.18: The 20-year Ribble Estuary trend for greylag goose (WeBS (Woodward *et al.*, 2024))

Pink-footed goose

The pink-footed goose is a migratory species in the UK, with almost the entire wintering population breeding in Iceland. During the winter, pink-footed geese can form feeding and roosting flocks of over 10,000 birds as they commute daily from their roosting grounds on the salt marshes and beaches south of the Ribble to feed in fields, primarily consuming root crops and grains. In early spring, they may switch to fresh grass shoots (Devenish *et al.*, 2015). The core foraging range is generally considered to be around 20 km (NatureScot, 2016).

National trend

At the national level, the pink-footed goose population in England has shown a general upward trend since 2002/03. The population has nearly doubled over two decades, increasing from the early 2000s to 2021/22 (BTO/RSPB/JNCC, 2023). While the population has experienced notable peaks, there is also considerable variability. The highest index values were recorded during the winters of 2016/17 and 2017/18 (Figure A.19). In recent years, the population has stabilized somewhat, although significant fluctuations between years remain, suggesting a more consistent wintering population across England (BTO/RSPB/JNCC, 2023).

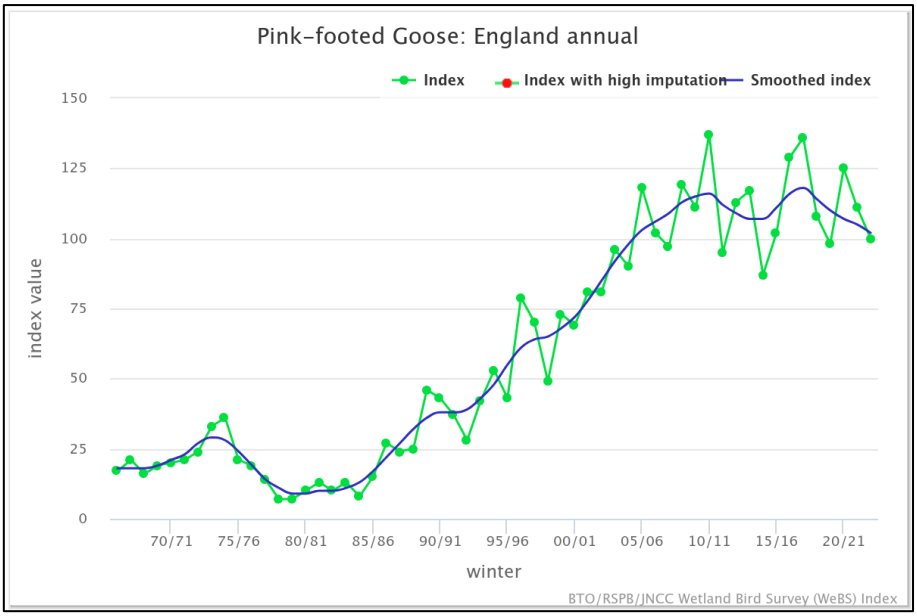

Figure A.19: The English population trend for pink-footed goose (WeBS (Woodward et al., 2024)) 1

Regional trend

At the local level, the Ribble Estuary serves as a crucial wintering site for pink-footed geese, supporting substantial numbers. The counts have varied, with notable fluctuations observed over the years. From 2002/03 to 2022/23, the pink-footed goose counts in the Ribble Estuary have generally increased, reaching approximately 35,000 birds during peak years (2016/17 and 2017/18) (Figure A.20). In recent years, counts have shown some variability, including a slight decline in 2021/22; however, they remain higher compared to the early 2000s.

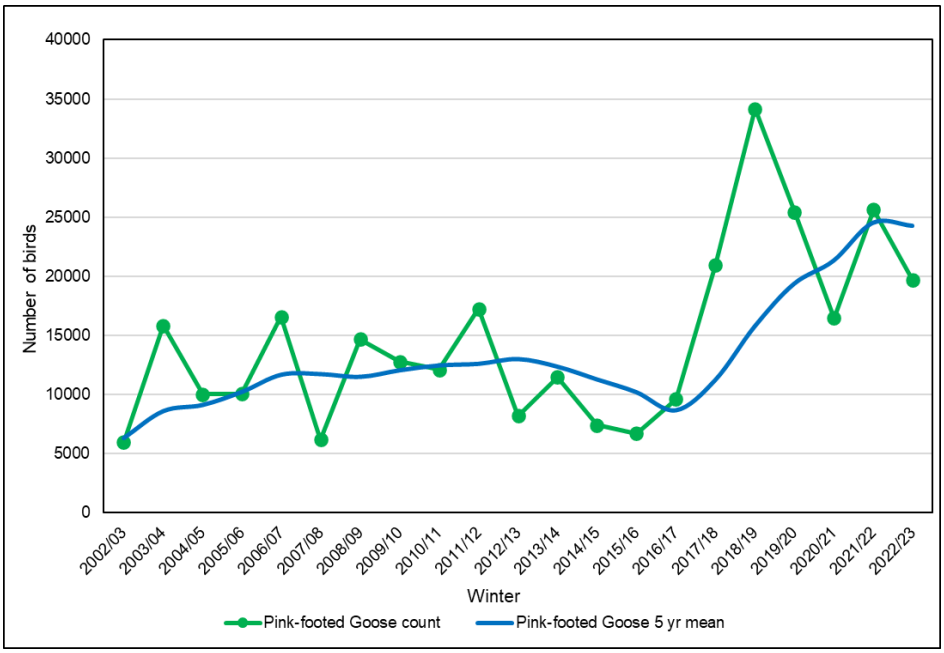

Figure A.20: The 20-year Ribble Estuary trend for pink-footed goose taken (WeBS (Woodward *et al.*, 2024)

Fylde Club Bird Data regarding geese

The distribution of geese closely resembles that of the swans (Figure A.21). While all three species of goose were included, the pink-footed goose was recorded in the highest numbers, leading to a bias in the density estimates. Like the swans, pink-footed geese roost on the saltmarshes south of Warton and primarily move northwest to forage around Lytham Moss. There is a significant concentration of geese near Blackpool Airport and within the area designated as Functionally Linked Land (FLL) by Natural England. The geese observed along the Blackpool coast were likely migrants recorded during seawatches.

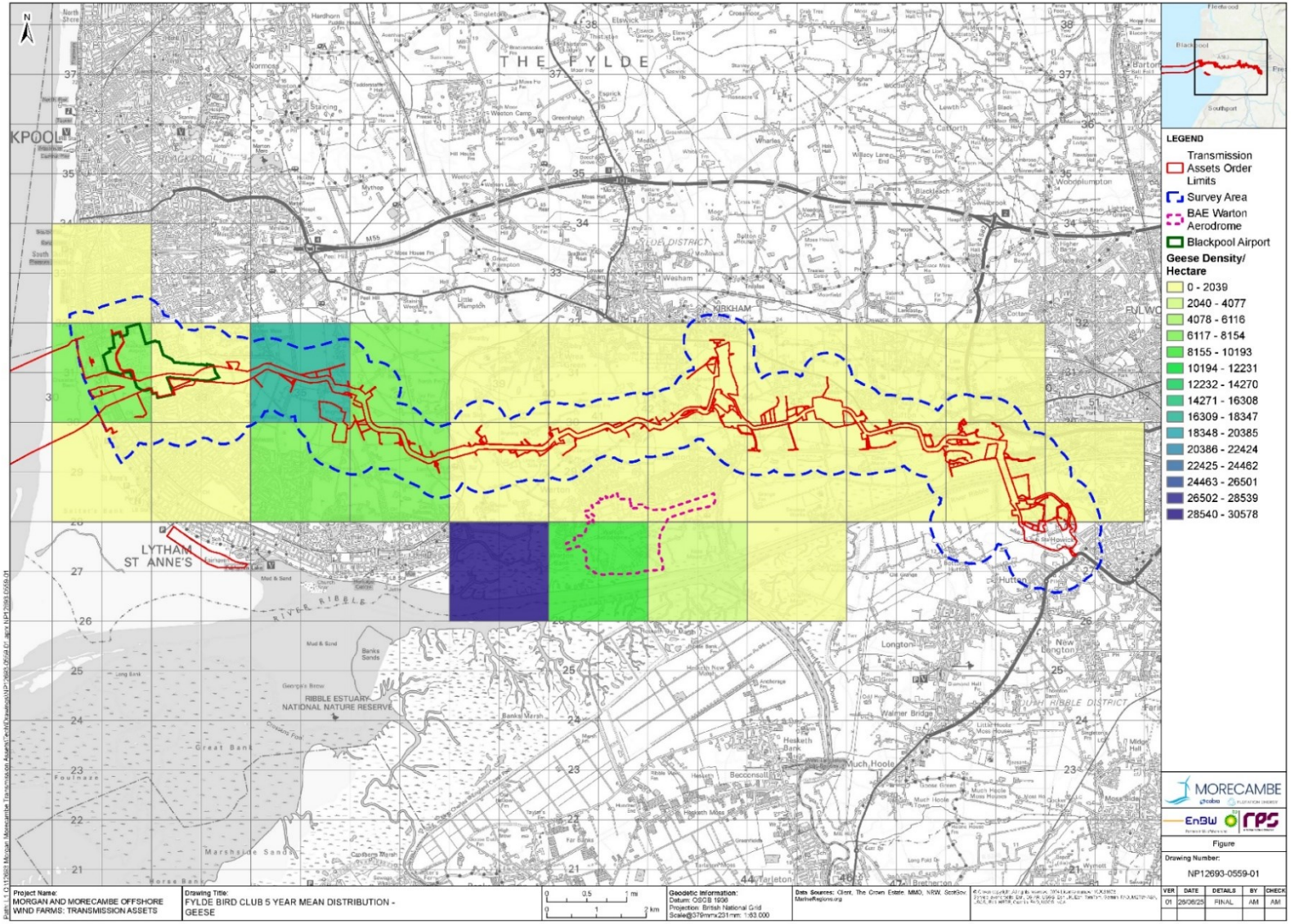

Figure A.21: Fylde Bird Club five-year average distribution of geese from 2018/19 – 2022/23

The Applicant's Data regarding geese

The distribution of geese is skewed toward the pink-footed goose, which is the most numerous species in the area. Pink-footed geese were primarily located around Lytham Moss (Figure A.22), with scattered flocks observed in arable fields between Lytham and Kirkham. Canada and greylag geese were generally found within the estuary, on Newton Marsh SSSI adjacent to Warton Aerodrome, or on Lea Marsh.

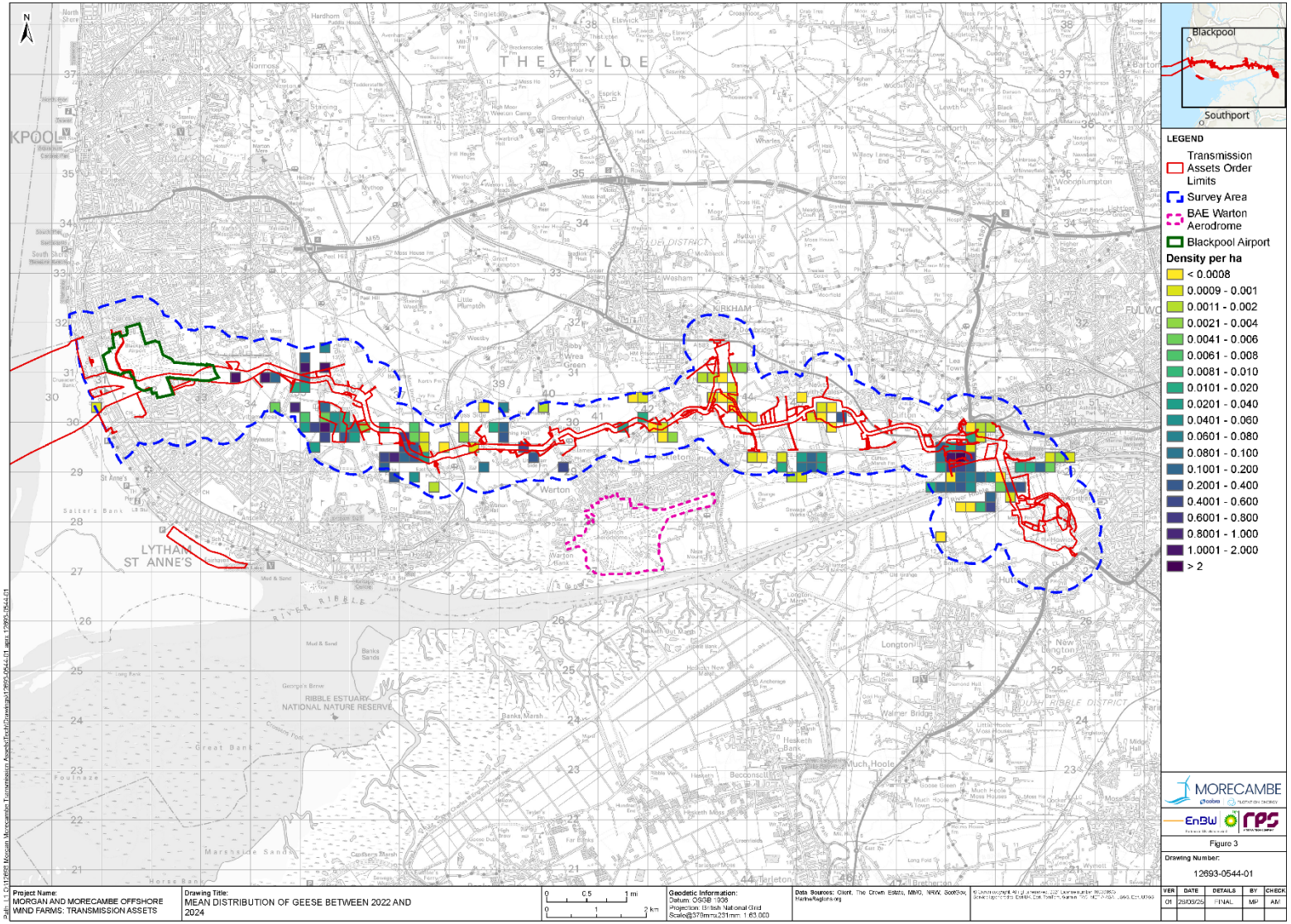

Figure A.22: The Applicants two-year average (2022 to 2024) distribution of geese

Ducks

This group of birds is associated with water, although some species may also utilise terrestrial habitats, such as farmland, for feeding. They are small to medium-sized birds, measuring between 34 and 65 cm in length, with wingspans ranging from 53 to 120 cm, and weighing between 0.3 and 1.2 kg. Due to their size and their tendency to fly in sometimes large flocks, collisions between aircraft and ducks could result in a significant to hazardous impact, depending on the number of birds involved (Table A.5).

Table A.5: Duck facts and seasonality (BTO, 2025)

Species	Length	Wingspan	Weight	Seasonality in Blackpool area											
Shelduck	55 – 65 cm	100 – 120 cm	0.7 – 1.5 kg	J	F	M	A	M	J	J	A	S	O	N	D
Mallard	50 – 60 cm	81 – 95 cm	0.85 – 1.5 kg	J	F	M	A	M	J	J	A	S	O	N	D
Wigeon	42 – 50 cm	71 – 85 cm	540 – 905 g	J	F	M	A	M	J	J	A	S	O	N	D
Teal	34 – 38 cm	53 – 59 cm	245 – 400 g	J	F	M	A	M	J	J	A	S	O	N	D

Orange = present
Yellow= present in low numbers
Green = not present

Shelduck

National trend

Shelducks are a large duck species that are present year-round, although they are significantly more common during the spring passage than in the autumn passage and winter period (Woodward *et al.*, 2024). While shelduck do congregate in groups during the non-breeding season, they are more likely to be found singly, in pairs, or in family groups during the breeding season.

At the national scale, shelduck populations have decreased since their peaks in the mid to late 1990s (Figure A.23). Although the population recovered somewhat between 2015/16 and 2018/19, it is currently on a downward trend.

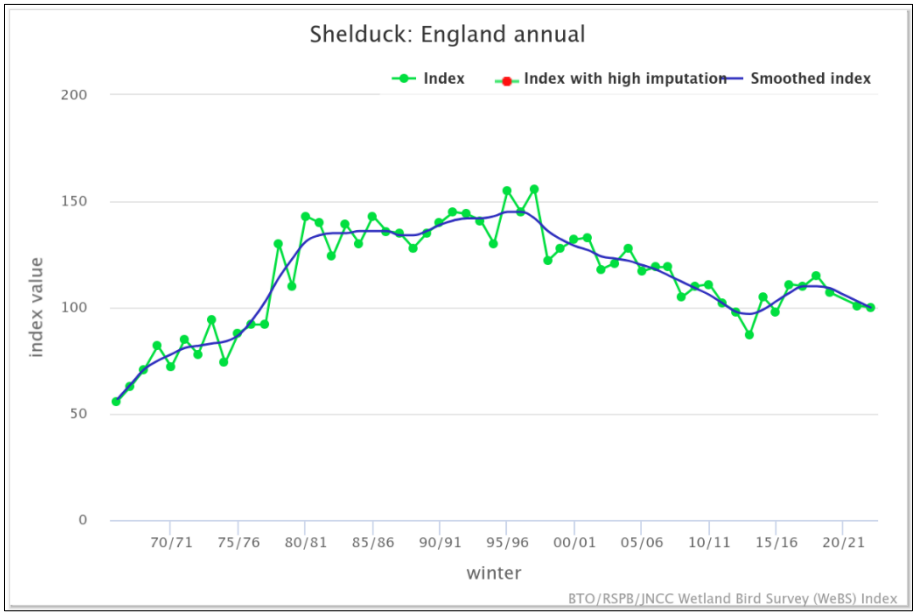

Figure A.23: The English population trend for shelduck (WeBS (Woodward *et al.*, 2024)). [1]

Regional trend

Amid significant annual variations in counts, the Ribble Estuary population appears to have increased over the last 20 years, rising from around 3,000 birds to over 5,000 birds in 2022/23 (Figure A.24). The Wetland Bird Survey (WeBS) data also indicate that the northwest of England is of great importance for wintering shelducks.

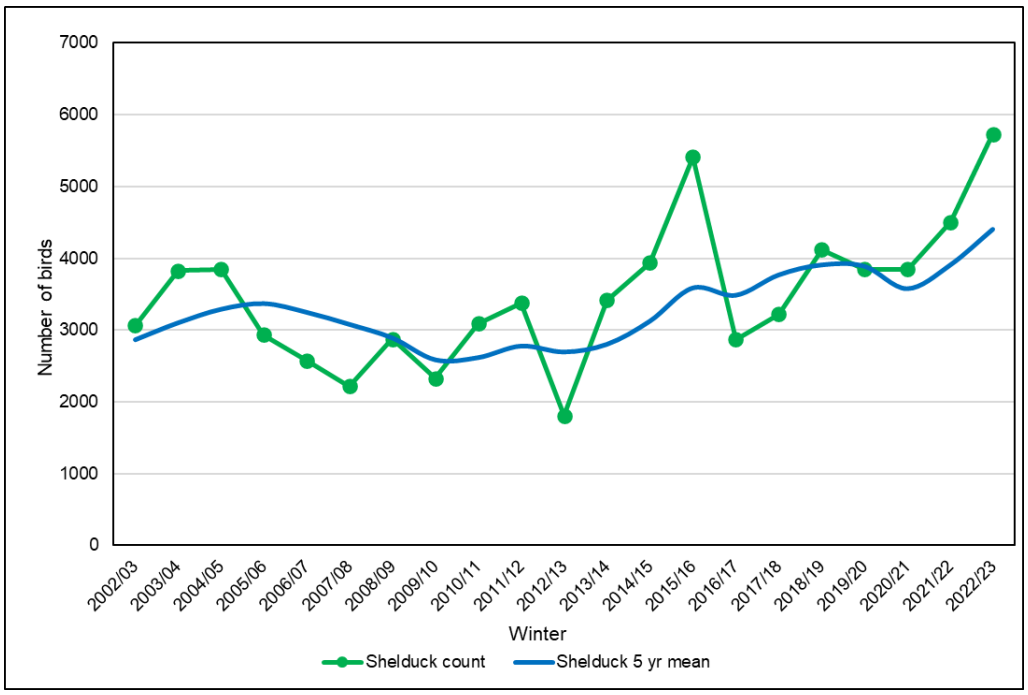

Figure A.24: The 20-year Ribble Estuary trend for shelduck (WeBS (Woodward *et al.*, 2024).

Mallard

Mallard are large, robust ducks that are present year-round; however, their population increases significantly during the winter months as Icelandic birds join the sedentary UK population. They are usually found in small groups and only form large flocks during the non-breeding period.

National trend

At the national level, following population peaks in the late 1980s, the mallard population (as measured by the Wetland Bird Survey, WeBS) has experienced a steady decline (Figure A.25). Over the same period, the mallard has seen an overall increase as a breeding bird, although this trend is unlikely to be reflected in the WeBS data. The decline in the wintering population is likely due to changes in the migratory population, which constitutes most of the wintering birds. Additionally, mallard are sometimes released in large numbers for commercial shoots, although it is unclear whether this occurs on the Ribble Estuary.

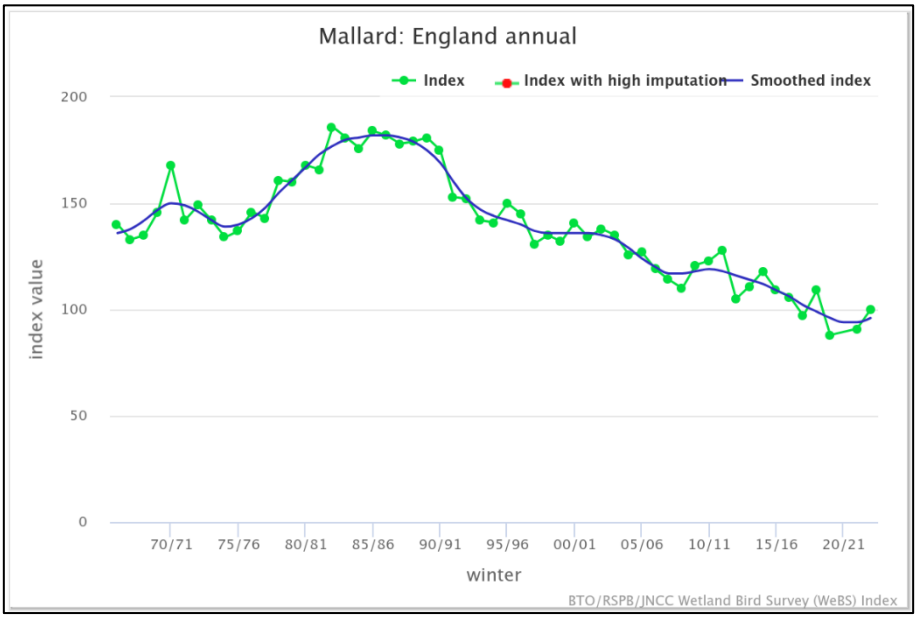

Figure A.25: The English population trend for mallard (WeBS (Woodward *et al.*, 2024))[1]

Regional trend

Despite fluctuations and relative stability until 2015/16, the mallard population in the Ribble Estuary has recently declined to below 1,000 birds (Figure A.26).

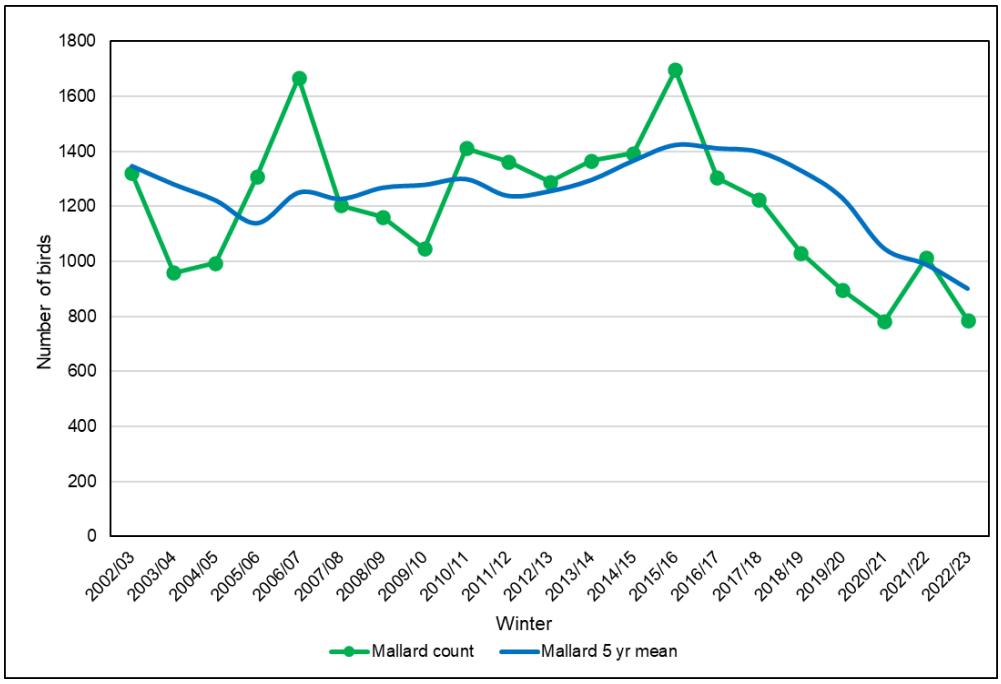

Figure A.26: The 20-year Ribble Estuary trend for mallard (WeBS (Woodward *et al.*, 2024).

Wigeon

Wigeon are mid-sized ducks that breed in low numbers in the UK, typically in pools and marshes in upland areas, but not at all in the Blackpool area. As a result, they are primarily a concern during the non-breeding period, which generally spans from October to April. Most wintering wigeon breed further north in Iceland. Wintering wigeon are very gregarious, and flocks may number in the thousands. They feed on grassland and often forage extensively at night during the winter. Wigeons typically do not travel more than 2 km from their roost site to find food (Stroud *et al.*, 2016).

National trend

At the national level, after a sustained rise from the 1970s to the early 2000s, wigeons have recently experienced a stable or slightly declining trend, although this has often been accompanied by significant inter-annual fluctuations (Figure A.27).

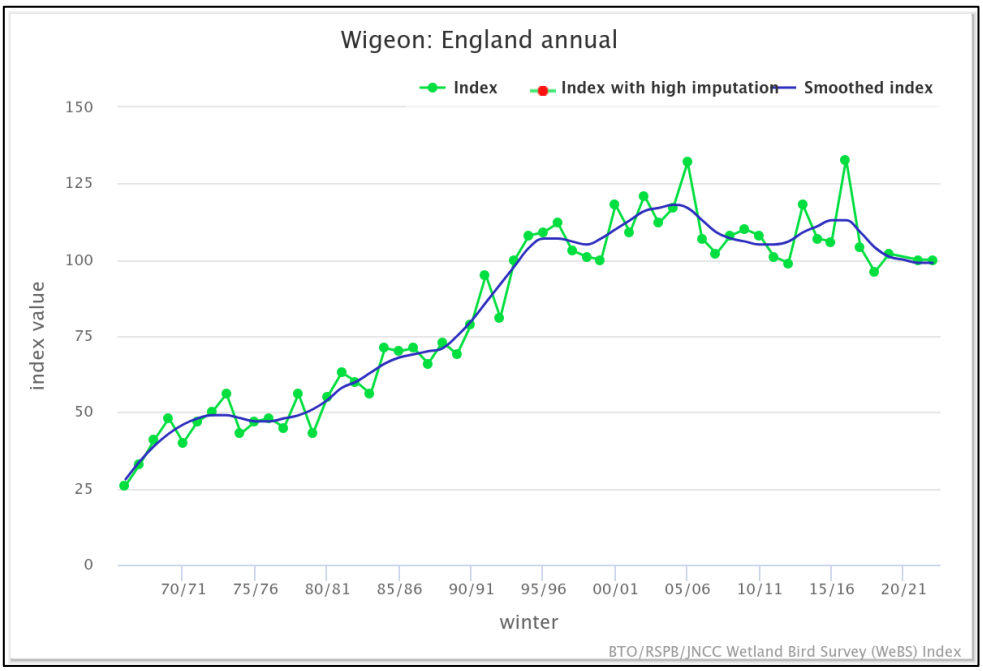

Figure A.27: The English population trend for wigeon (WeBS (Woodward *et al.*, 2024). [1]

Regional trend

After a stable start, wigeon have seen a steady decline since 2010/11 in the Ribble Estuary, although with much annual fluctuation in numbers (Figure A.28).

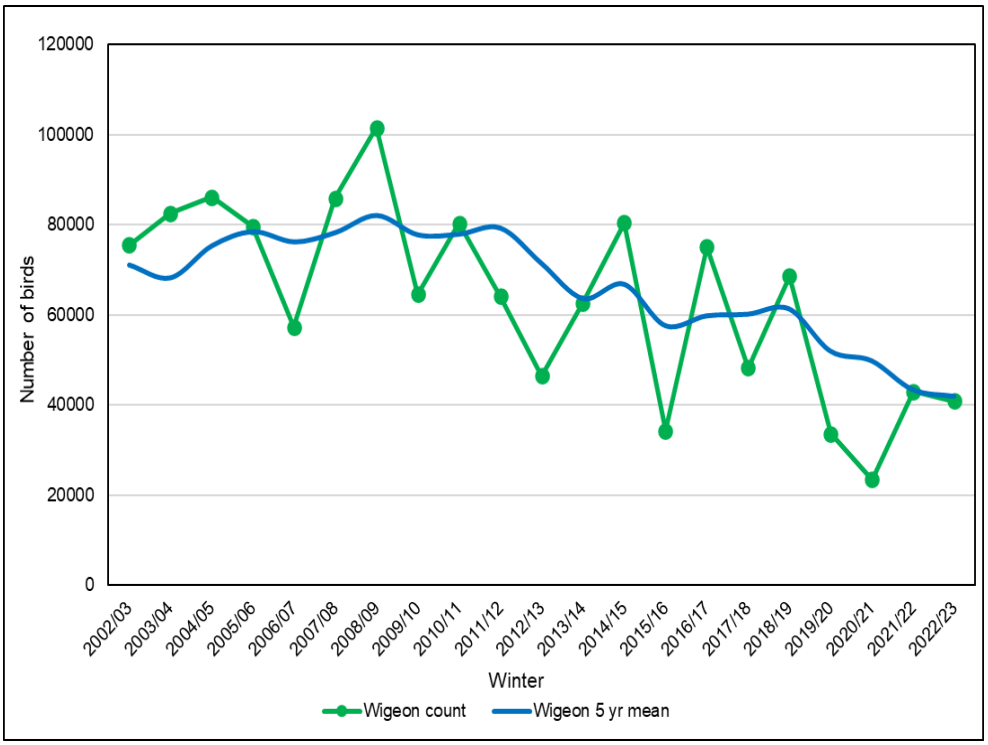

Figure A.28: The 20-year Ribble Estuary trend for wigeon (WeBS (Woodward *et al.*, 2024))

Teal

Teal are small ducks that breed in low numbers throughout the UK. Wintering teal are typically found in small groups and are dabbling ducks that feed in the water. They usually do not travel more than 2 km from their roost site to forage (Stroud *et al.*, 2016).

National trend

At the national level, teal trends have followed a similar initial pattern to those of wigeon, with a rise in numbers from the 1970s to the early 2000s (Figure A.29). Since then, the trend has remained broadly stable, although there have been significant fluctuations between years, along with several mini declines and increases.

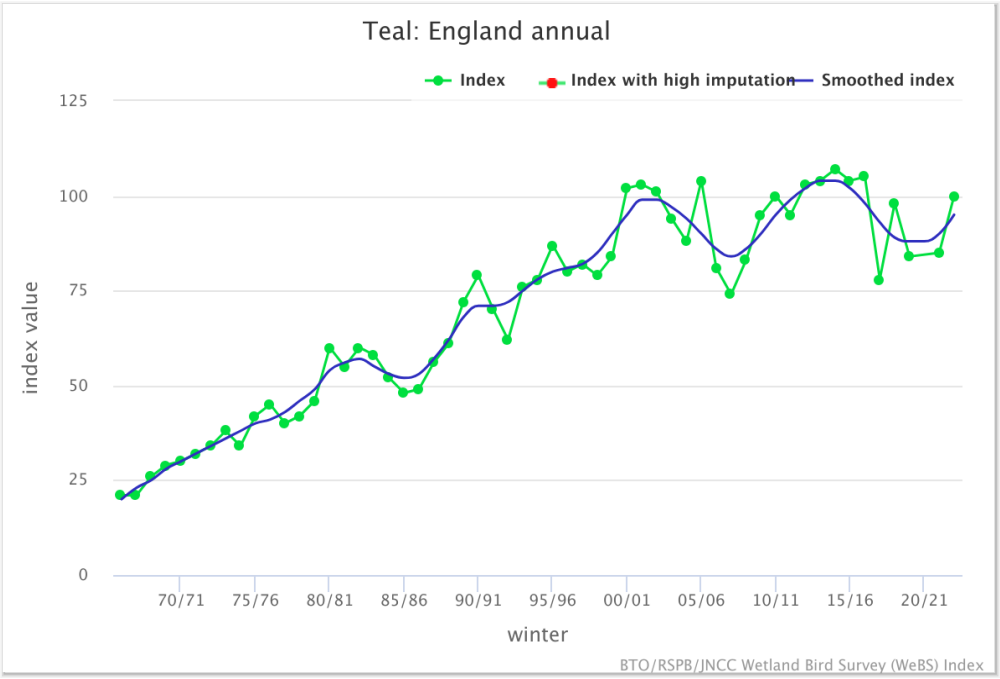

Figure A.29: The English population trend for teal (WeBS (Woodward *et al.*, 2024)). [1]

Regional trend

The 20-year trends for the Ribble Estuary have been broadly stable, averaging around 6,000 birds, although this number has fluctuated between approximately 4,000 and 10,000 (Figure A.30).

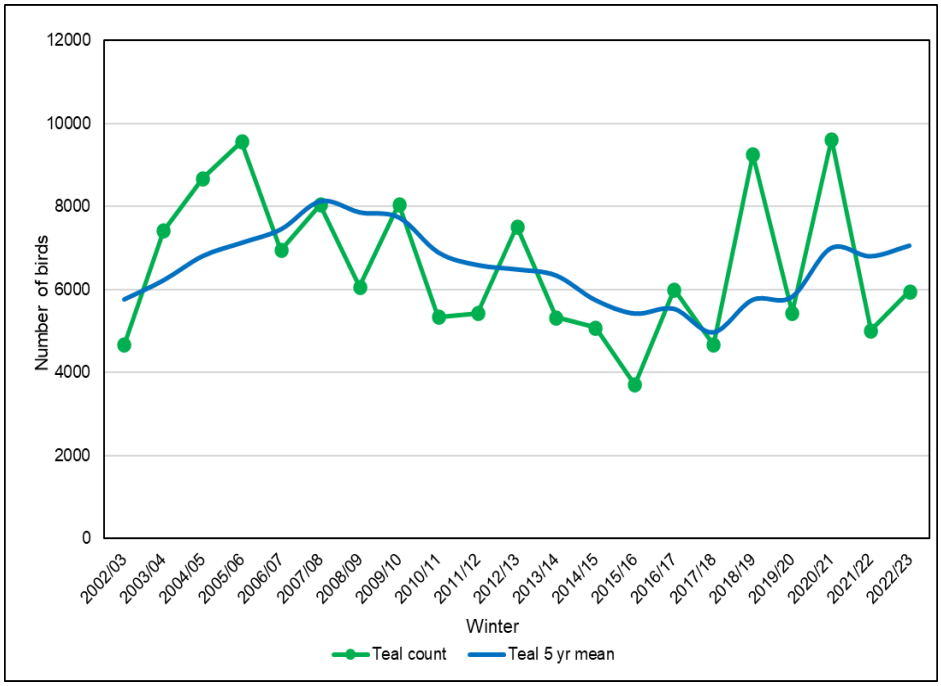

Figure A.30: The 20-year Ribble Estuary trend for teal taken (WeBS (Woodward *et al.*, 2024)).

Fylde Club Bird Data regarding ducks

The main concentrations of ducks were recorded within the estuary and at Newton Marsh SSSI adjacent to Warton Aerodrome (Figure A.31).

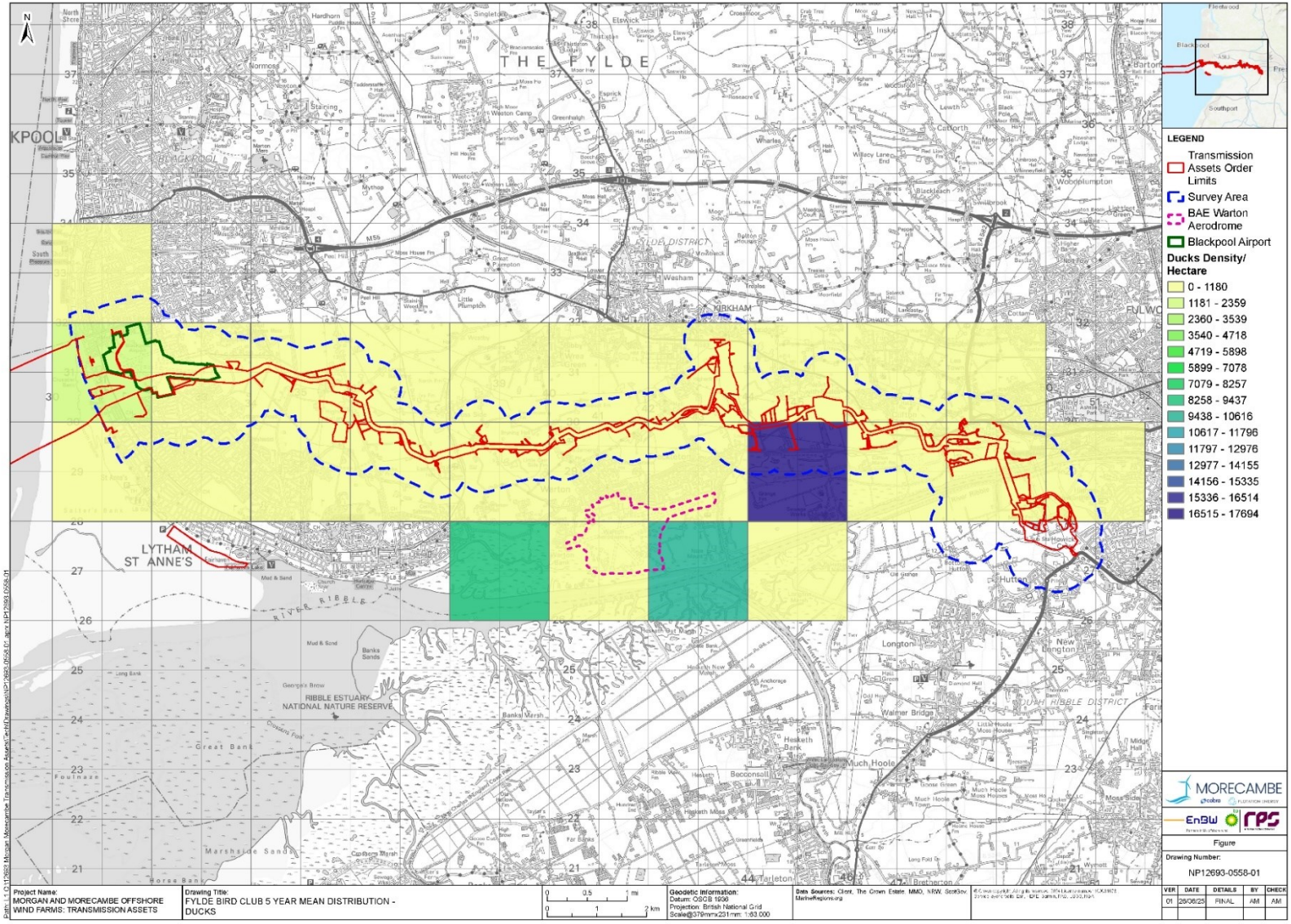

Figure A.31: Fylde Bird Club five-year average distribution of ducks from 2018/19 – 2022/23

The Applicant's Data regarding ducks

With wigeon being the most numerous duck species, the distribution of ducks is heavily skewed toward this species, although teal were often present alongside them. Key areas for ducks include Newton Marsh SSSI and the Ribble corridor. Significant numbers of ducks were also observed within the proposed mitigation area at Newton with Scales (Figure A.32). Mallard were found across all sizes of watercourses and water bodies throughout the survey area.

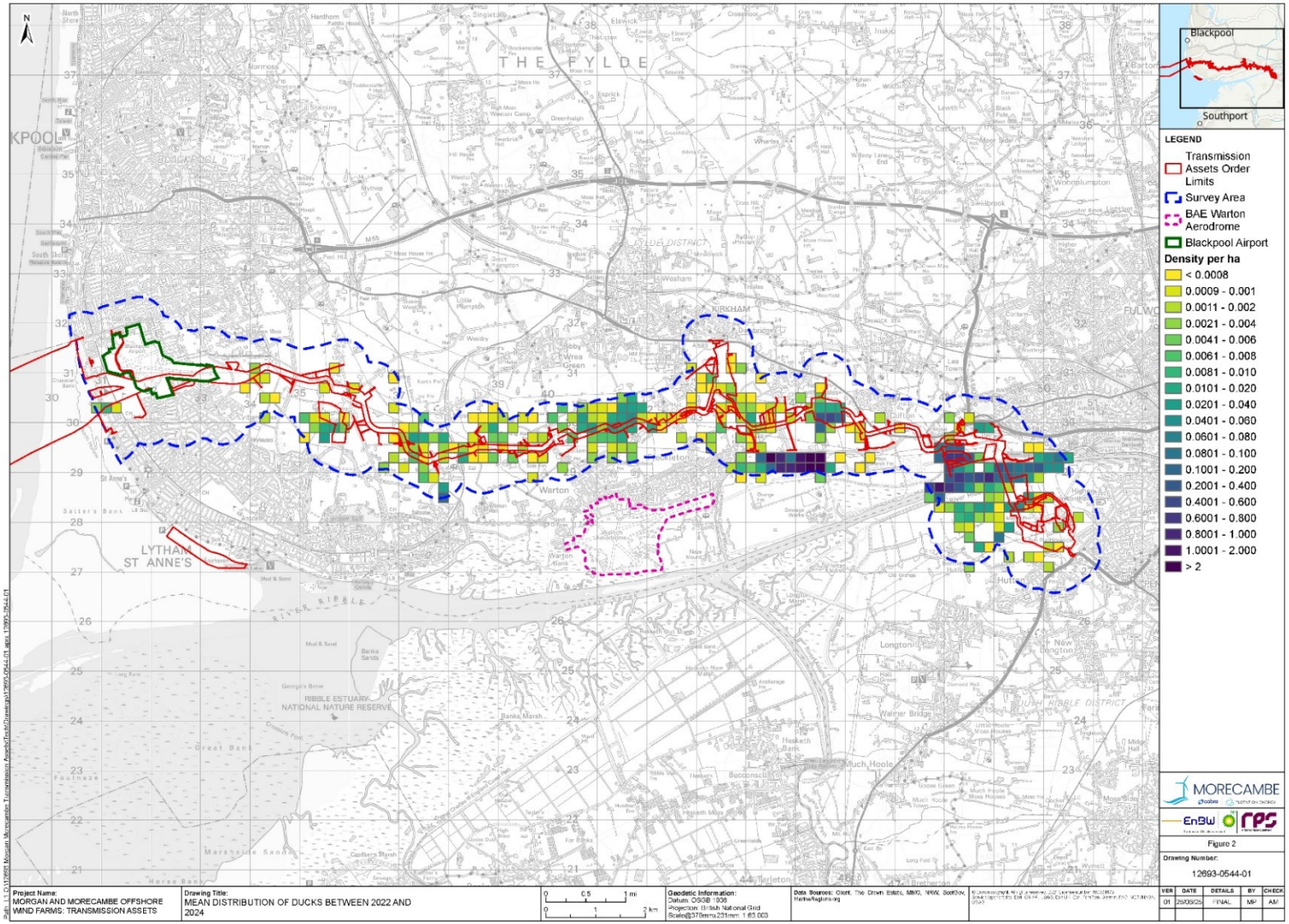

Figure A.32: The Applicants two-year average (2022 to 2024) distribution of ducks

Waders

Many waders are quite small birds with golden plover, lapwing, redshank and black-tailed godwit being below the weight of a woodpigeon (Table A.6). It would therefore be safe to assume that single strikes by these species would only cause minor damage to aircraft. However, many of these species do fly in flocks increasing the likelihood of multiple strikes. Many wader species are relatively low flying and often avoid flight except when necessary. Therefore, although often present in flocks these birds generally pose a much lower risk to aircraft safety. The exceptions to this are lapwing and golden plover which often congregate in large mixed flocks and may flush often and fly to reasonable heights.

Although many of the terrestrial wader species present are present year-round, during the breeding season the populations will be much lower than during the non-breeding season when hundreds of thousands of waders will pass through or overwinter in the Ribble and Alt Estuaries SPA. Most of these birds stick to the intertidal habitats at the coast and that, combined with their low flying habits (often within a few metres of the land or water), mean that they pose very little risk to aircraft safety. Therefore, only those species moving between roosts in the SPA and terrestrial habitats have been considered.

Table A.6: Wader facts and seasonality (BTO, 2025)

Species	Length	Wingspan	Weight	Seasonality in Blackpool area											
Oystercatcher	39 – 44 cm	72 – 83 cm	410 – 657 g	J	F	M	A	M	J	J	A	S	O	N	D
Golden plover	25 – 28 cm	53 – 59 cm	180 – 236 g	J	F	M	A	M	J	J	A	S	O	N	D
Lapwing	28 – 31 cm	67 – 72 cm	214 – 300 g	J	F	M	A	M	J	J	A	S	O	N	D
Redshank	24 – 27 cm	47 – 53 cm	126 – 184 g	J	F	M	A	M	J	J	A	S	O	N	D
Black-tailed godwit	37 – 42 cm	63 – 74 cm	240 – 360 g	J	F	M	A	M	J	J	A	S	O	N	D
Curlew	48 – 57 cm	89 – 106 cm	632 – 1000 g	J	F	M	A	M	J	J	A	S	O	N	D

Orange = present
Yellow= present in low numbers
Green = not present

Oystercatcher

Oystercatcher are large waders that utilize both intertidal and terrestrial habitats to feed on invertebrates found within the substrate. They typically congregate in groups outside of the breeding season, with roosts numbering in the thousands. Although they are present in the region year-round, there are significantly more birds during the winter months, as numbers are supplemented by individuals that breed further north in Scotland, Iceland, and Scandinavia.

National trend

At the national level, the overall population of oystercatcher has remained stable from the mid-1970s to the 2020s (Figure A.33). However, there was an increase in population during the 1990s, followed by a decline and a recent stabilization.

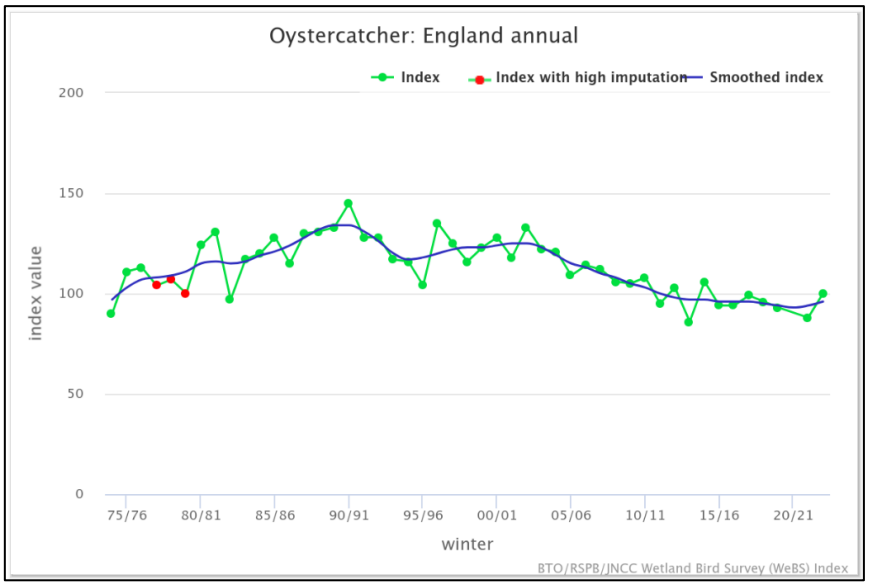

Figure A.33: The English population trend for oystercatcher (WeBS (Woodward *et al.*, 2024)[1])

Regional trend

Over the last 20 years, oystercatcher numbers in the Ribble Estuary have decreased from over 20,000 to just over 10,000 birds (Figure A.34). This decline was characterized by a steep drop in the 2000s, followed by a more stable trend with annual fluctuations.

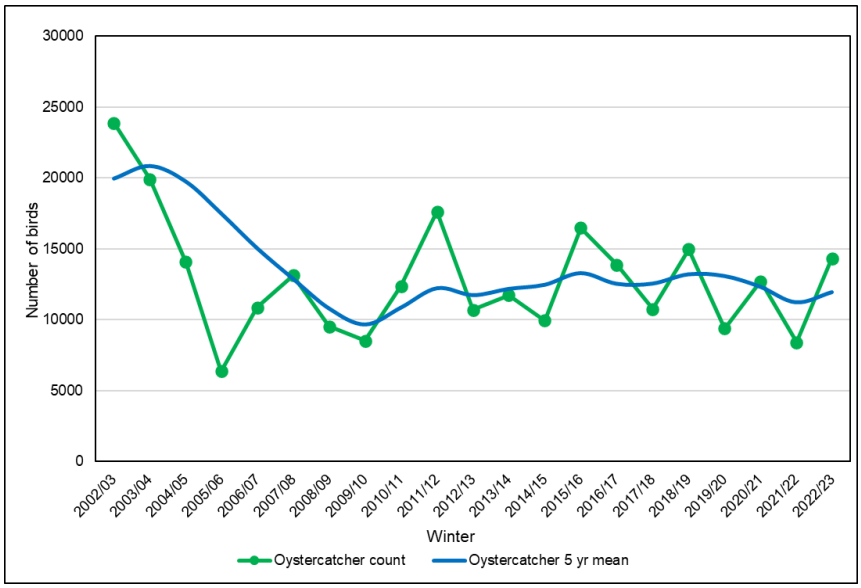

Figure A.34: The 20-year Ribble Estuary trend for oystercatcher (WeBS (Woodward *et al.*, 2024))

Golden plover

Golden plover are a small to medium sized wader that breed on upland bogs and tundra habitats in the UK and further north. During the winter the numbers of golden plover in the UK are swollen by Icelandic breeding birds. Golden plover generally roost on marshland and feed on pasture during the day and at night. They often move around in flocks and may also be regularly seen in mixed flocks with lapwing.

National level

At the national level, golden plover have seen their numbers double since the 1970s (Figure A.35). However, the initial increases have been tempered by more recent declines and fluctuations, and the current trend is downward.

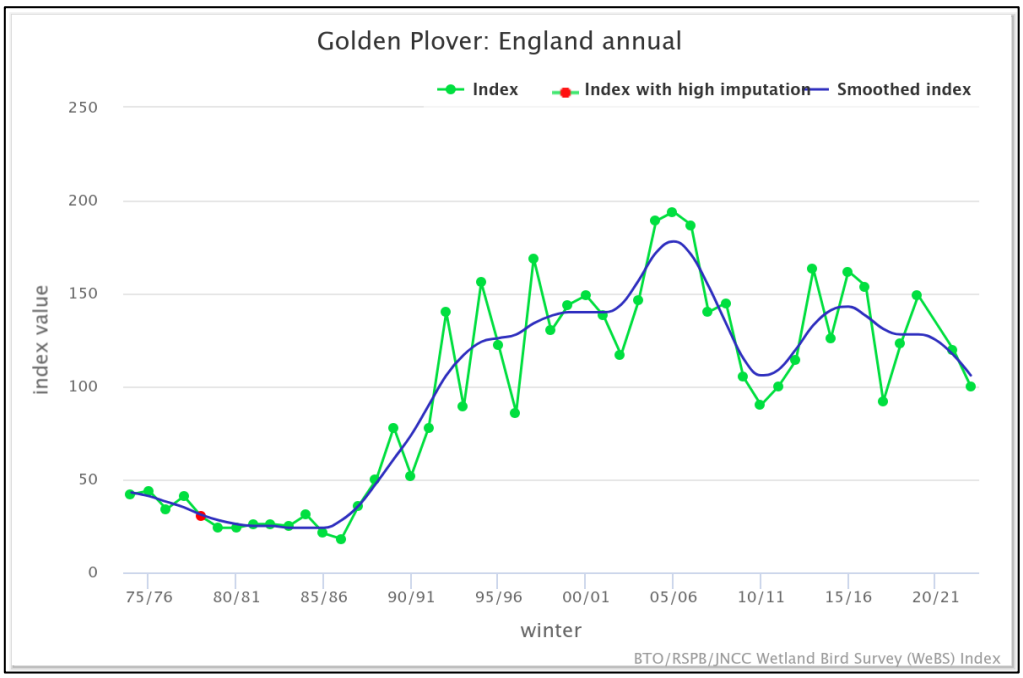

Figure A.35: The English population trend for golden plover (WeBS (Woodward *et al.*, 2024))[1]

Regional level

The golden plover population in the Ribble Estuary has doubled from around 3,000 to 6,000 (Figure A.36). However, there have been many fluctuations, and no clear trend has emerged, with numbers ranging from just above 1,000 to over 8,000.

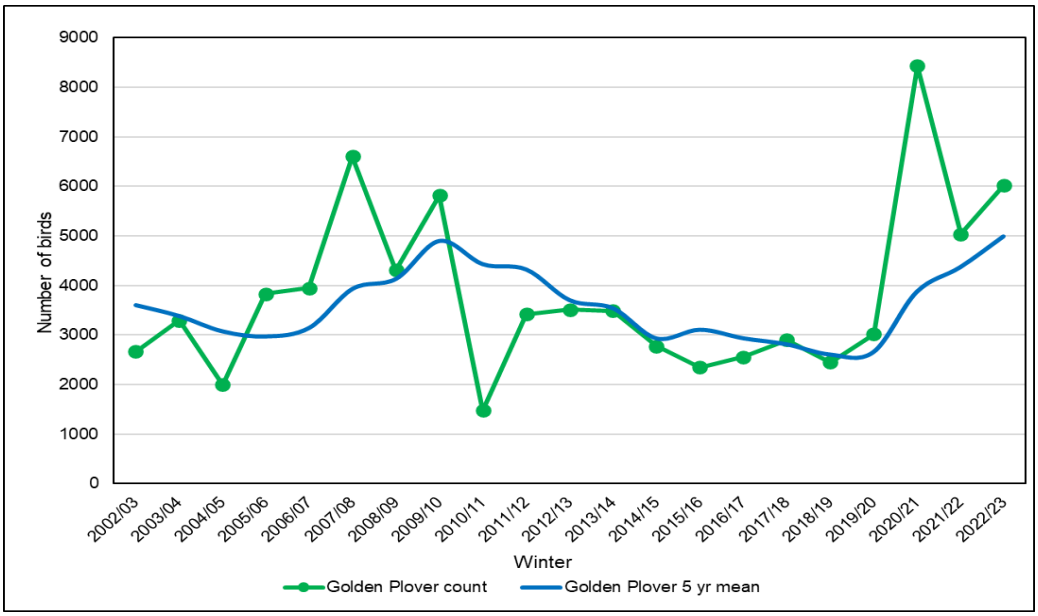

Figure A.36: The 20-year Ribble Estuary trend for golden plover (WeBS (Woodward *et al.*, 2024)

Lapwing

Lapwings are medium-sized waders that, like golden plovers, roost and feed on freshwater marshes and grasslands, such as pastures. Unlike golden plovers, lapwings do nest in lowland grassland habitats around the Ribble Estuary. However, their numbers are much higher in winter when local birds are joined by upland breeding birds and individuals from further east in Europe. They also tend to form large flocks during the winter, sometimes mixing with golden plovers.

National trend

At the national level, following steep increases in the 1990s, the lapwing population has generally been in decline, although there have been some plateaus and fluctuations (Figure A.37).

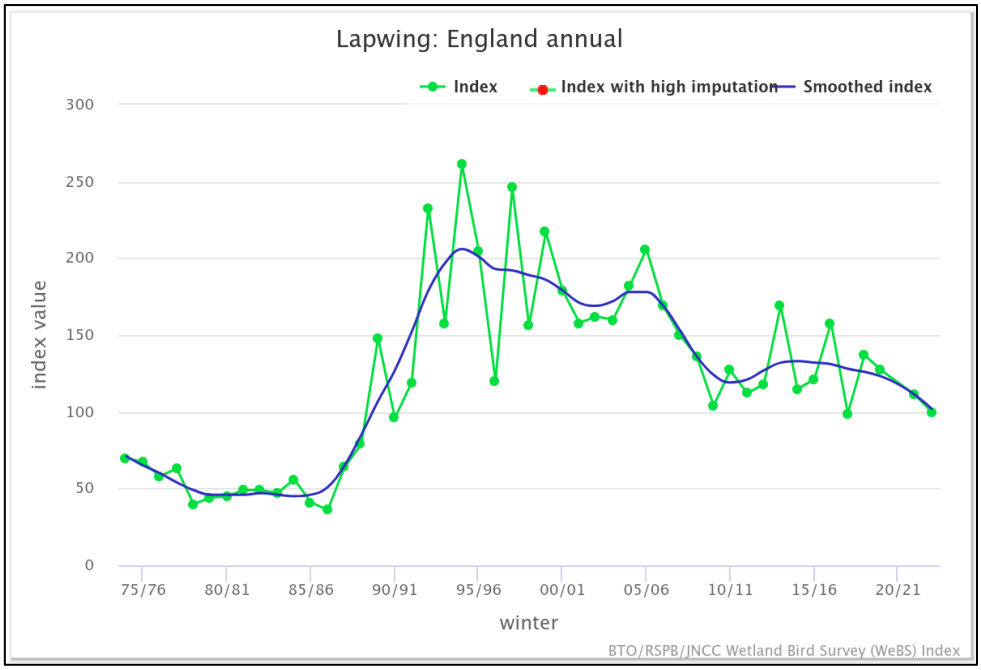

Figure A.37: The English population trend for lapwing taken (WeBS (Woodward *et al.*, 2024)).[1]

Regional trend

Over the 20-year period in the Ribble Estuary, the population has remained relatively stable at around 15,000 birds, although there have been fluctuations with both increases and declines during this time (Figure A.38). The current trend indicates an upward movement.

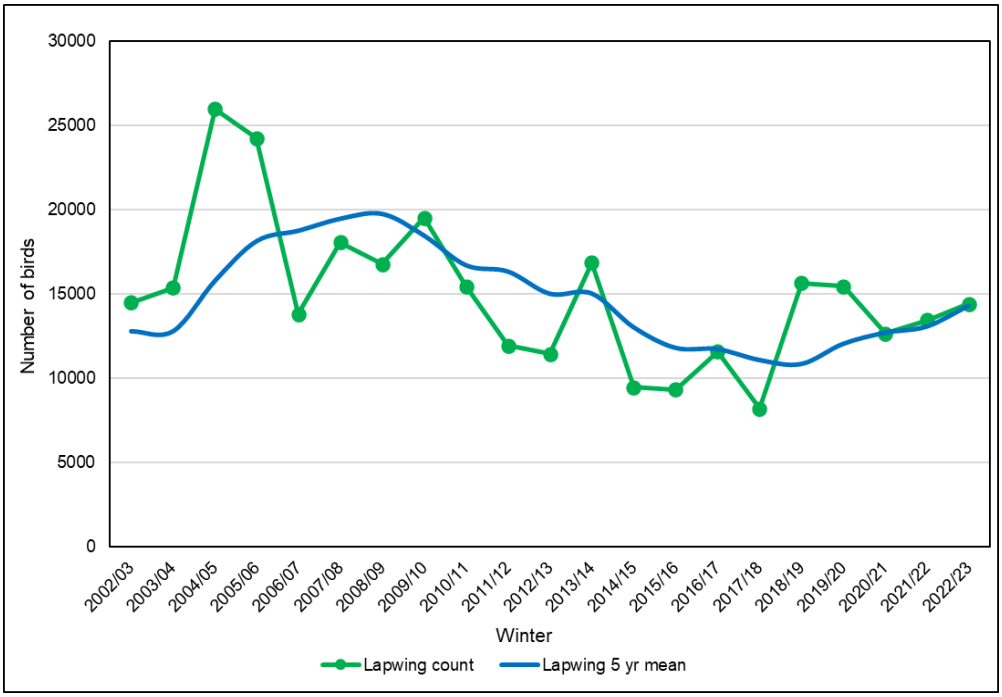

Figure A.38: The 20-year Ribble Estuary trend for lapwing (WeBS (Woodward *et al.*, 2024))

Redshank

Redshank are small to medium-sized waders that utilize both muddy coastal and estuarine habitats, as well as freshwater pools and scrapes inland. They are typically found foraging singly or in small, loose groups but can form large roosting groups along the coast.

National trend

At the national level, the English redshank population has remained relatively stable since the 1970s; however, there have been fluctuations during that period (Figure A.39). Currently, the trend is stable, with a slight recent increase.

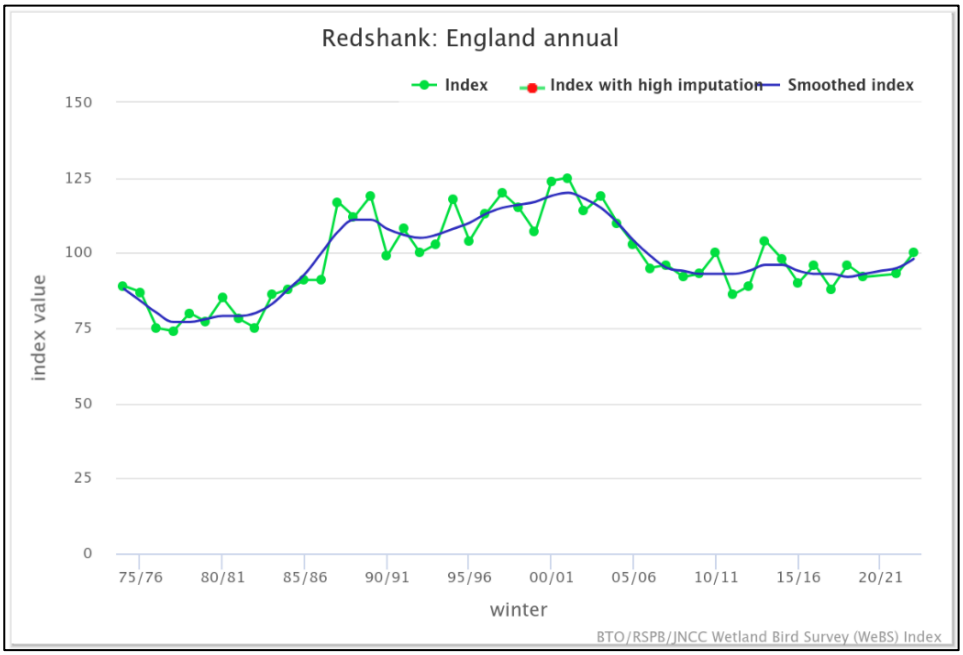

Figure A.39: The English population trend for redshank (WeBS (Woodward *et al.*, 2024)).[1]

Regional trend

Over the 20-year period from 2002/03, the redshank population in the Ribble Estuary has declined from around 4,500 birds to under 1,500 (Figure A.40). The current trend appears to be relatively stable.

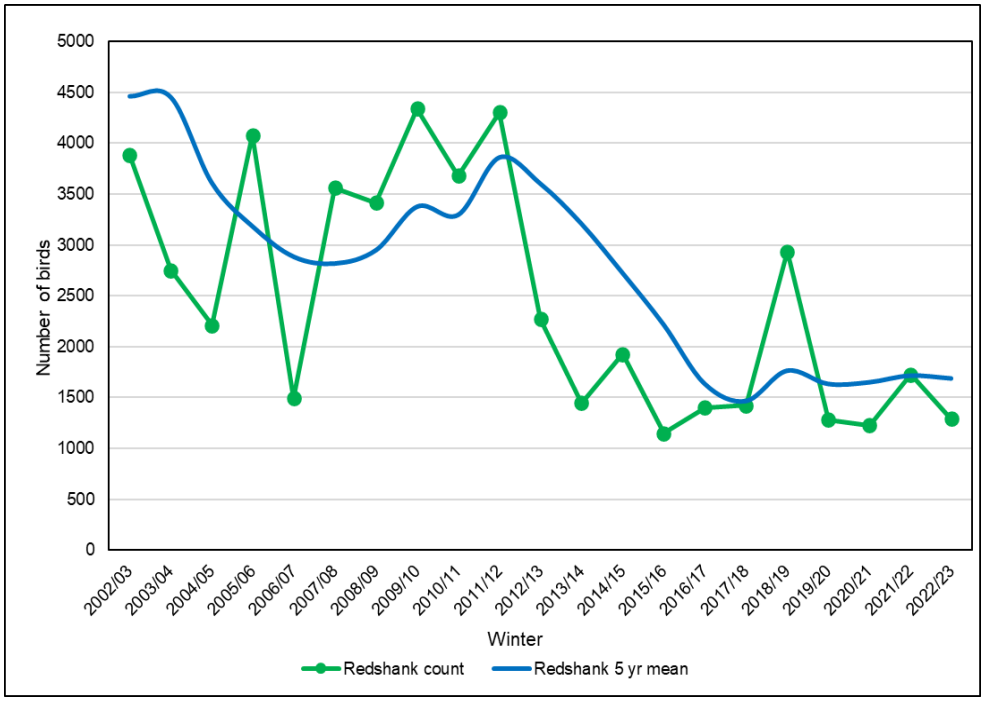

Figure A.40: The 20-year Ribble Estuary trend for redshank (WeBS (Woodward *et al.*, 2024))

Black-tailed godwit

Black-tailed godwit are medium-sized waders. Although there is a local breeding population, it consists of only a few pairs confined to Newton Marsh SSSI. This location is one of only two sites in the UK where black-tailed godwit breed, making them one of the UK's rarest breeding birds. During the non-breeding season, the UK hosts a large proportion of the Icelandic breeding birds. Black-tailed godwit feed in muddy tidal pools during the winter but often switch to pastures and freshwater pools or marshes in the spring to build up energy reserves before migration (Jourdan *et al*., 2022). During this period, they can be found in flocks of several hundred birds.

National trend

At the national level, the population of non-breeding black-tailed godwit has steadily increased since the 1970s, with the most recent trends continuing to show a steady rise (Figure A.41).

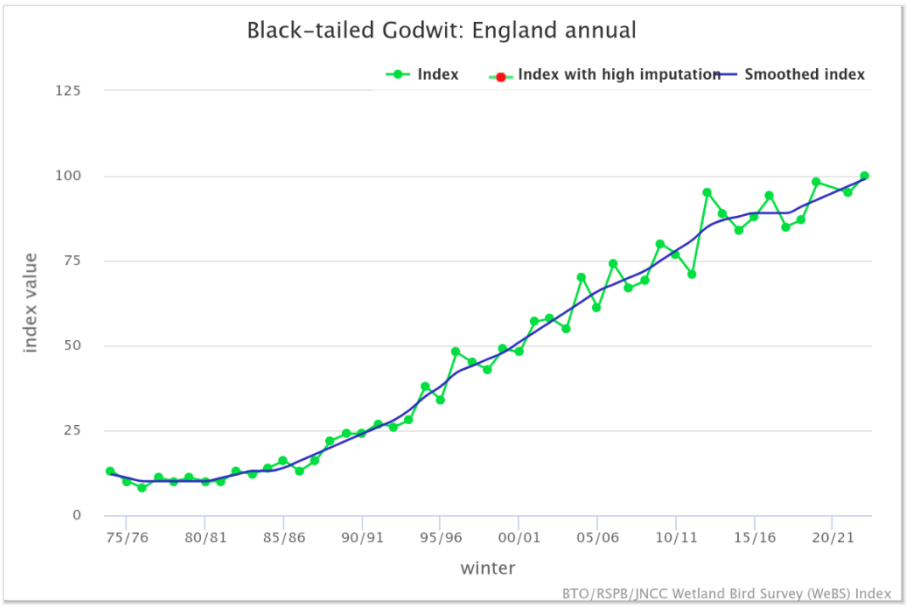

Figure A.41: The English population trend for black-tailed godwit (WeBS (Woodward *et al.*, 2024)) [1]

Regional trend

Within the Ribble Estuary, there has been significant fluctuation in the number of birds over the 20-year period, with lows below 2,000 and highs exceeding 6,000 (Figure A.42). The smoothed five-year average has indicated a slight increase in population during that time, but it is currently on a downward trend.

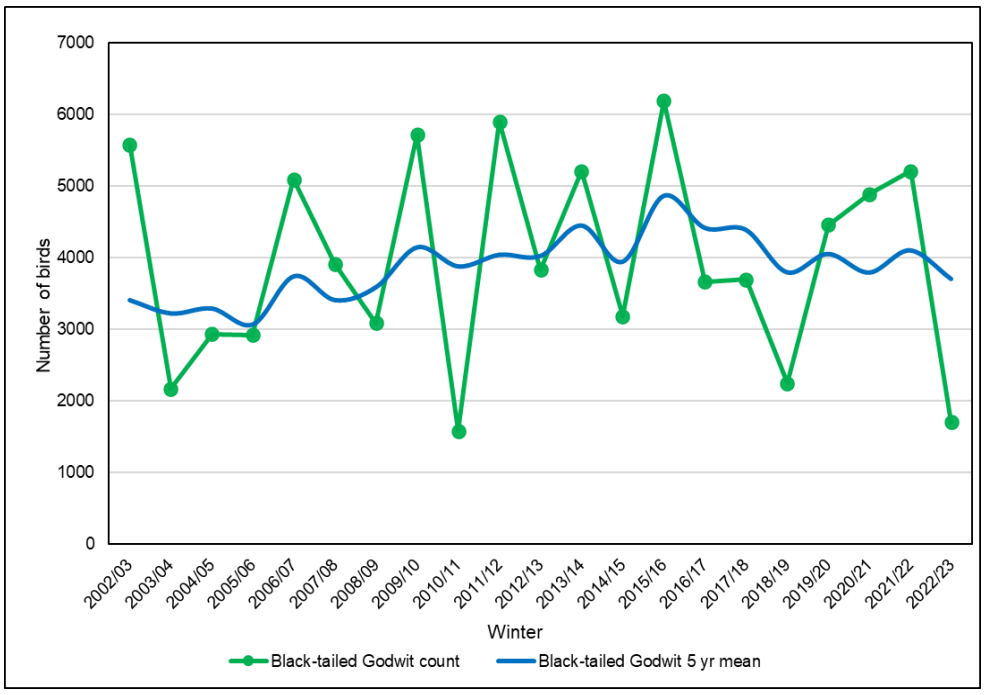

Figure A.42: The 20-year Ribble Estuary trend for black-tailed godwit (WeBS (Woodward *et al.*, 2024))

Curlew

Curlew are large waders that breed in the uplands of the UK. During the winter, these curlews migrate to the coast, where they are joined by birds from Scandinavia. They typically feed on muddy substrates in estuaries as well as on wet grassland habitats inland. Curlew usually form small flocks, typically consisting of only tens of birds.

National trend

At the national level, there has been a decline in the number of non-breeding curlew in England; however, the current population is at levels similar to those in the early 1980s (Figure A.43). Since then, there have been fluctuations, with both increases and decreases in numbers.

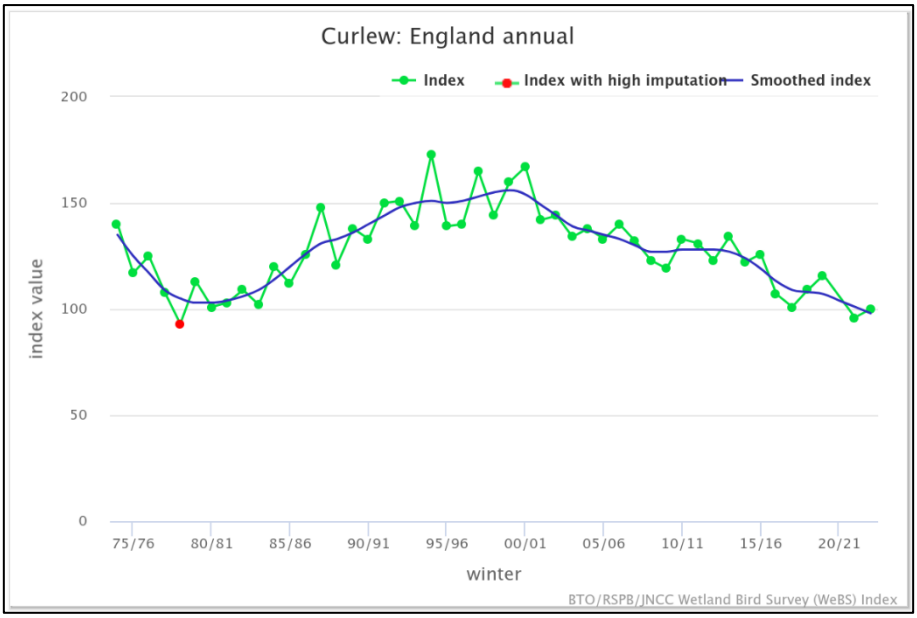

Figure A.43: The English population trend for curlew (WeBS (Woodward *et al.*, 2024))[1]

Regional trend

Curlew numbers in the Ribble Estuary have decreased over the recent 20-year period (Figure A.44). However, there has been significant fluctuation, and recent counts have revealed similar numbers (around 1,500 birds) to those present in 2002/03.

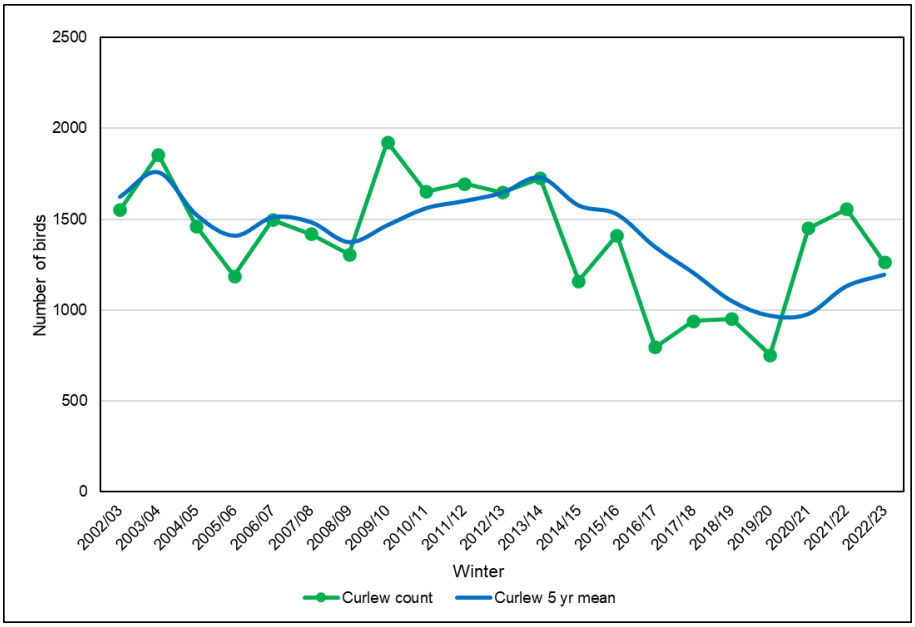

Figure A.44: The 20-year Ribble Estuary trend for curlew (WeBS (Woodward *et al.*, 2024))

Fylde Club Bird Data regarding waders

In addition to the high concentrations of waders at Newton Marsh SSSI (Figure A.45), there are also notable numbers of birds present within the saltmarshes. While some birds feed in the terrestrial habitats surrounding the estuary, their numbers are low in the context of SPA populations. Generally, terrestrial waders are found in small, scattered groups, with higher concentrations around the Lytham Moss area near Blackpool Airport.

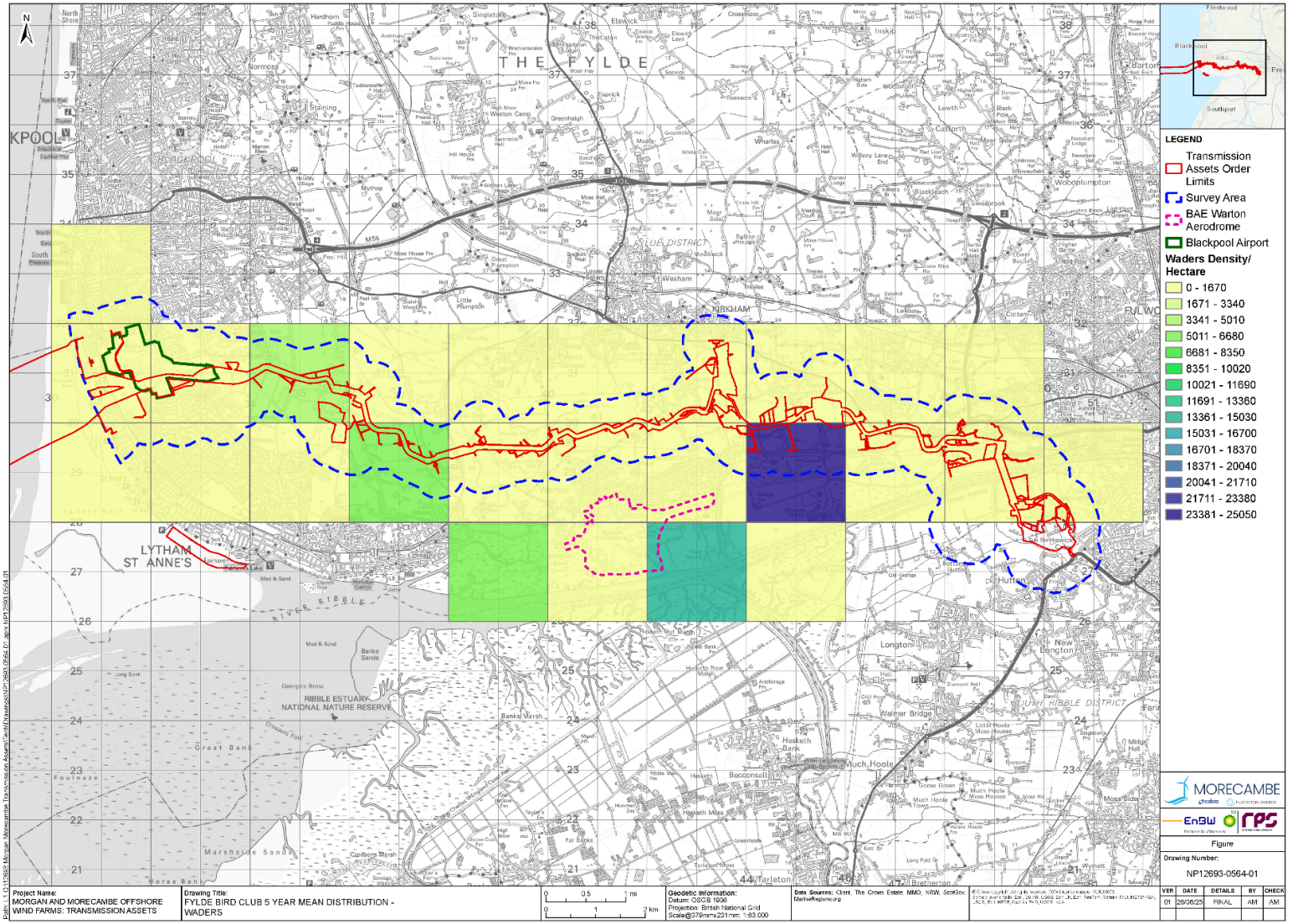

Figure A.45: Fylde Bird Club five-year average distribution of waders from 2018/19 – 2022/23

The Applicants' Data regarding waders

Lapwings were the most numerous wader species, and the areas that supported them also hosted other terrestrial feeding wader species. Key hotspots for wader activity included Lytham Moss, Newton Marsh SSSI, and the Ribble Estuary ((Figure A.46)).

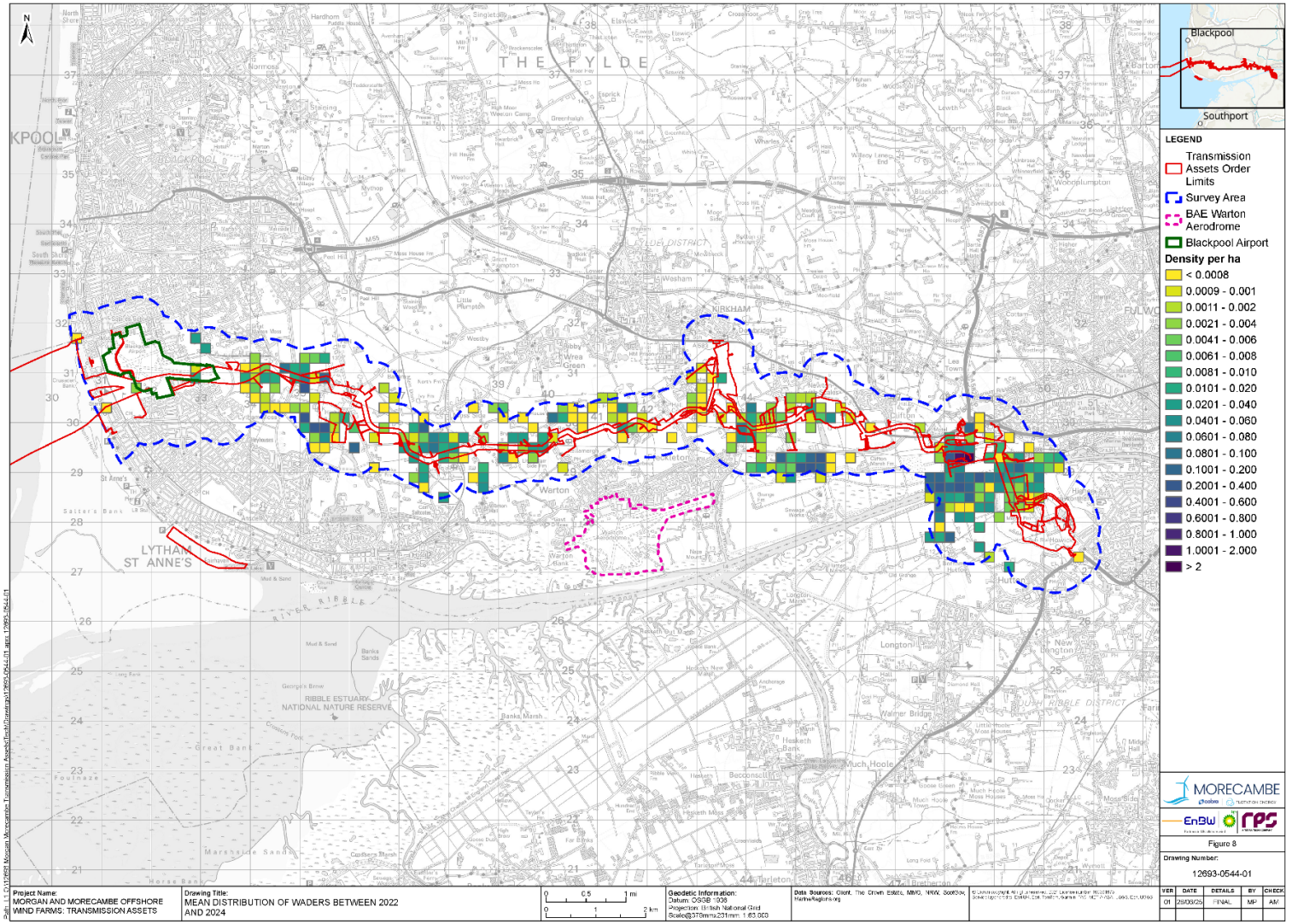

Figure A.46: The Applicants two-year average (2022 to 2024) distribution of waders

Gulls

Gulls pose the greatest risk to aircraft safety (Figure 1.6 and paragraph 0). They are medium to large in size, and many species are generalists that seek out scavenging opportunities near human activity. Additionally, they can form large groups. Some gulls, such as the common gull, are winter visitors, while others, like the herring gull, are present year-round Table A.7

Table A.7: Gull facts and seasonality (BTO, 2025)

Species	Length	Wingspan	Weight	Seasonality in Blackpool area											
Black-headed gull	35 – 39 cm	86 – 99 cm	200 – 348 g	J	F	M	A	M	J	J	A	S	O	N	D
Common gull	40 – 46 cm	100 – 115 cm	328 – 497 g	J	F	M	A	M	J	J	A	S	O	N	D
Herring gull	54 – 60 cm	123 – 148 cm	752 – 1,260 g	J	F	M	A	M	J	J	A	S	O	N	D
Lesser black-backed gull	48 – 56 cm	117 – 134 cm	686 – 999 g	J	F	M	A	M	J	J	A	S	O	N	D
Great black-backed gull	61 – 74 cm	144 – 166 cm	1,290 – 1,920 g	J	F	M	A	M	J	J	A	S	O	N	D

Orange = present
Yellow= present in low numbers
Green = not present

The population trends of gull species in England, particularly in the northwest region and the Ribble Estuary, have exhibited significant fluctuations over the past few decades. Burton *et al*. (2009) found declines in all five common species (Figure A.47).

As there has not been a published national winter gull survey in over 20 years, and the results of recent surveys are not yet publicly available, all trends have been derived from the Wetland Bird Survey (WeBS) data. While the WeBS data is robust, regularly collected, and continuous over a long period for primary wader and wildfowl species, the recording of gulls is optional. In busy count sectors, surveyors may prioritize counting primary species, and sub-adult gulls can be challenging to identify from a distance. For these reasons, the trends reported by WeBS may not accurately reflect actual population trends, and these results should be interpreted with caution.

The Seabird Monitoring Programme (SMP) monitors gulls at breeding colonies; however, since the primary concern for airports is during the winter mitigation period, and because the SMP does not monitor urban colonies—which likely constitute a significant portion of the herring gull population in the Ribble—SMP population trends have not been used to inform the baseline trend presented in this technical note.

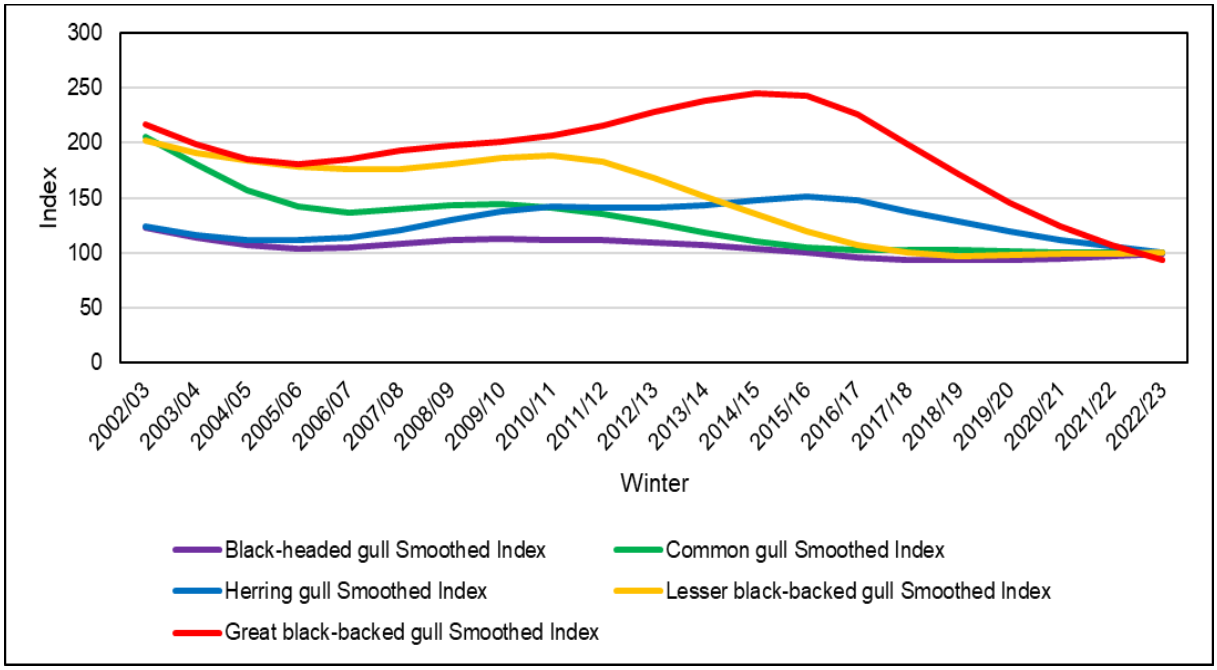

Figure A.47: The indexed and smoothed gull trends for England, as taken from the BTO.

Black-headed gull

The black-headed gull is a small to medium-sized gull. The summer breeding population increases during the winter when UK birds are joined by continental breeding populations. The saltmarshes and freshwater marshes surrounding the Ribble Estuary are particularly notable for their summer breeding colonies of black-headed gulls. This species is often found foraging in terrestrial habitats.

National trend

At the national level, the population index has generally declined since the early 2000s **(**Figure A.48**).** However, the most recent data indicates a stabilization at lower levels.

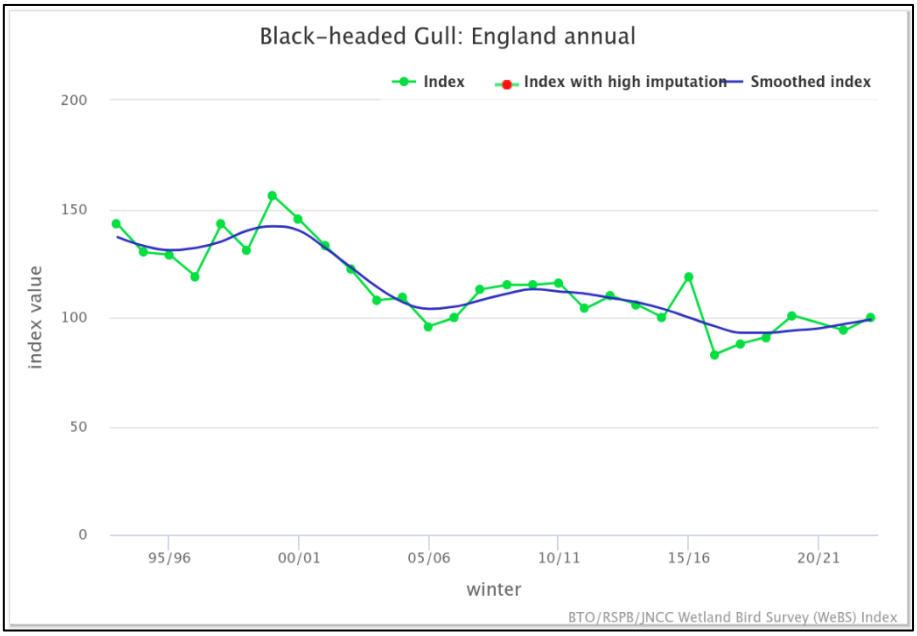

Figure A.48: The English population trend for black-headed gull (WeBS)[1]

Regional trend

The Ribble Estuary has experienced considerable fluctuations, with peak counts reaching over 16,000 birds in 2010/11 (Figure A.49). Recent years show a decline, with counts stabilizing in the low to mid thousands.

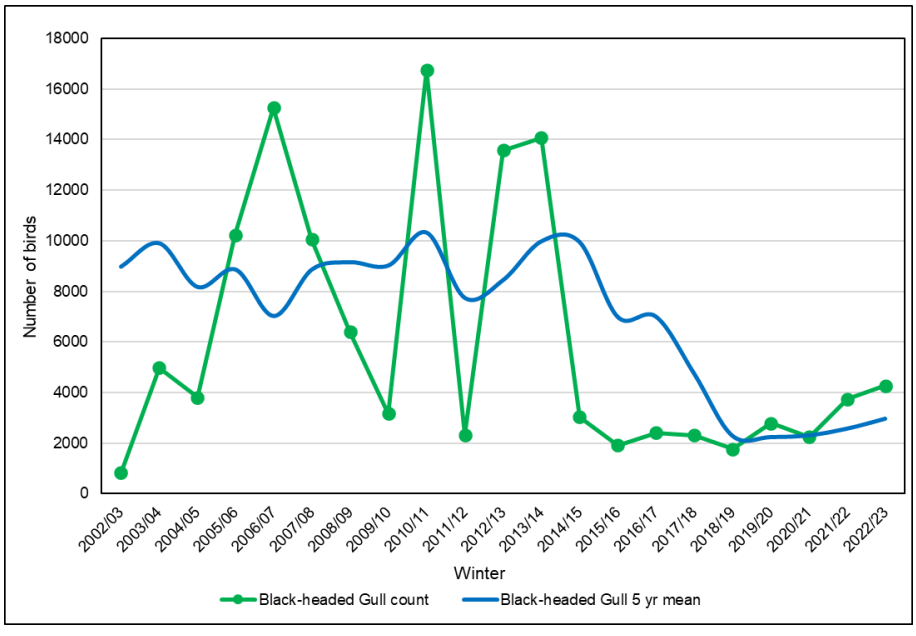

Figure A.49: The 20-year Ribble Estuary trend for black-headed gull (WeBS (Woodward *et al.*, 2024))

Common gull

This medium-sized gull is a winter visitor to England, although it is known to breed in low numbers in the North Pennines and breeds in greater numbers further north. During the winter, the UK population swells as continental breeding birds arrive. Common gulls can be found in both coastal and terrestrial habitats during this season, with terrestrial birds often drawn to coastal locations during cold snaps.

National trend

At the national level, the population index has shown a steady decline since the early 2000s, with the most significant drops occurring between 2000 and 2005 (Figure A.50). In recent years, the trend appears to have stabilized at lower levels.

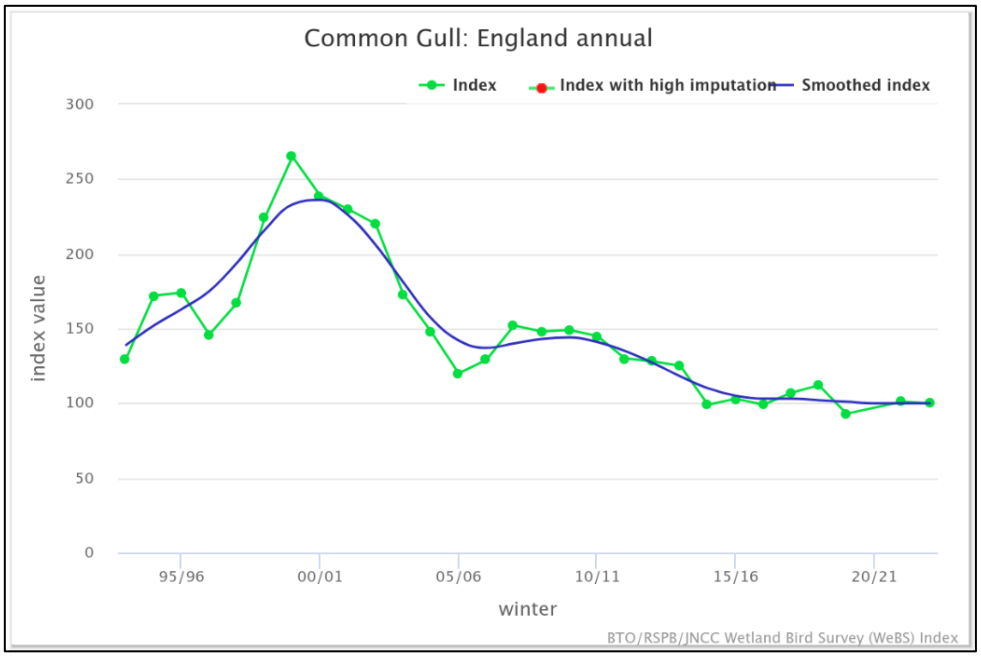

Figure A.50: The English population trend for common gull (WeBS (Woodward *et al.*, 2024))[1]

At the national level, the counts have varied significantly, with peaks in the mid-2000s (Figure A.51), but recent years show a marked decline, with current counts well below 2,000 birds.

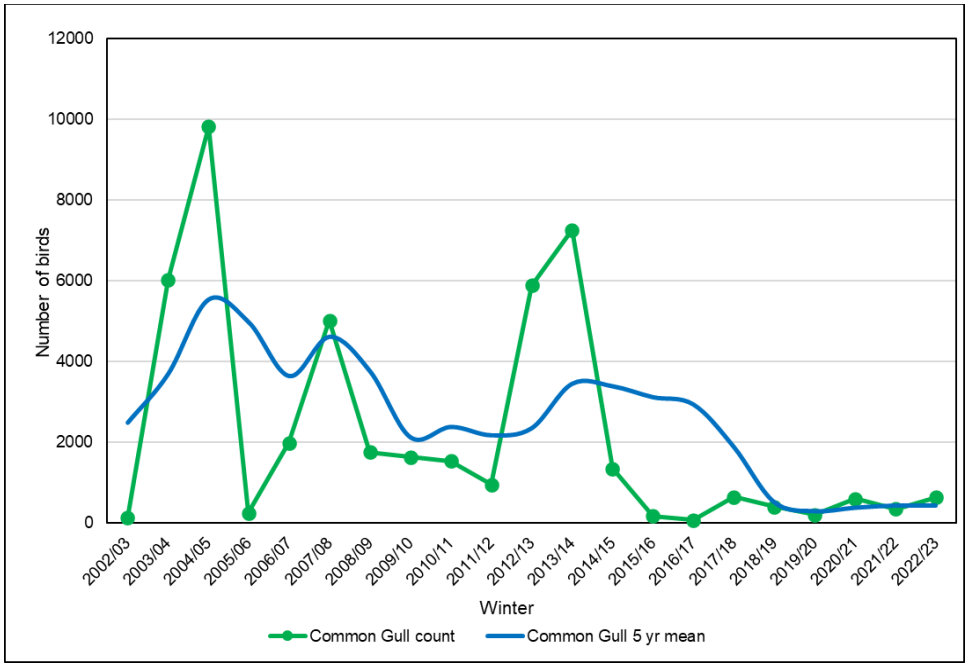

Figure A.51: The 20-year Ribble Estuary trend for common gull (WeBS (Woodward *et al.*, 2024))

Herring gull

The herring gull is a large gull commonly found in coastal areas, where it exploits both marine and terrestrial habitats. This species is of high conservation concern and has been placed on the red list due to significant population declines (Stanbury *et al*., 2021). In addition to these declines, there has been a notable shift from nesting in natural locations to nesting in urban environments. This change may be attributed to the safety of nesting on rooftops, along with the scavenging opportunities that arise from living near human populations.

Since 2000, declines in natural nesting herring gulls may have reached as high as 38%, while urban nesting birds now account for approximately 75% to 85% of the English population. Furthermore, there is a strong coastal bias, with between 77% and 97% of all herring gulls nesting within 5 km of the coast (Burnell, 2021). Consequently, although herring gulls are in decline, this shift toward urban nesting has led to significant conflicts with humans, particularly in coastal towns.

National trend

At the national level, the population index for herring gulls has exhibited a declining trend since the early 2000s, with fluctuations observed in the annual counts (Figure A.52). Following an upward trend from 2005 to 2006, the population experienced declines once again starting in 2016.

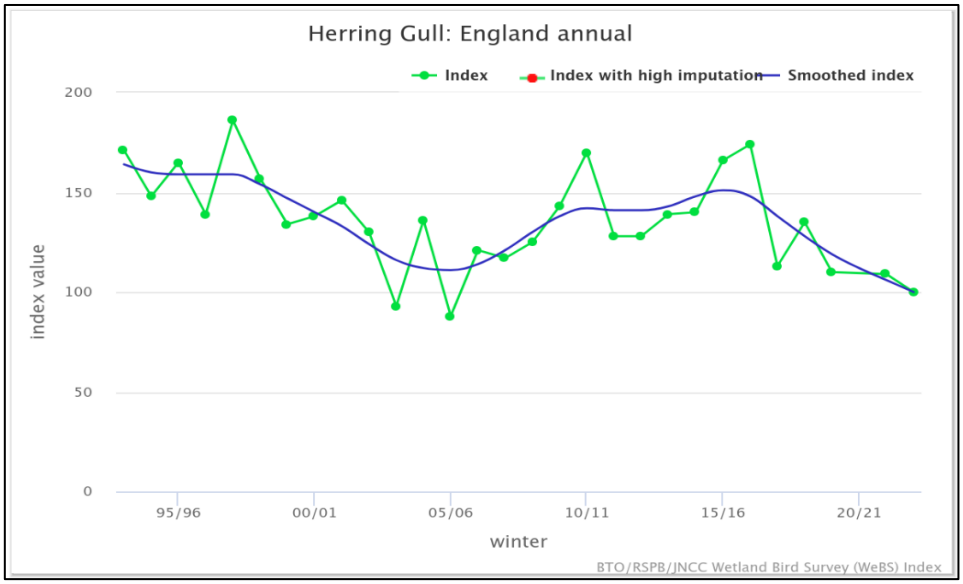

Figure A.52: The English population trend for herring gull (WeBS (Woodward *et al.*, 2024))[1]

Regional trend

The Ribble Estuary has experienced significant fluctuations in herring gull populations, with peak counts exceeding 30,000 birds in the mid-2000s (Figure A.53). Recent years have shown considerable variability, and while the population may currently be on the rise, the fluctuations are too pronounced to identify any definitive trends.

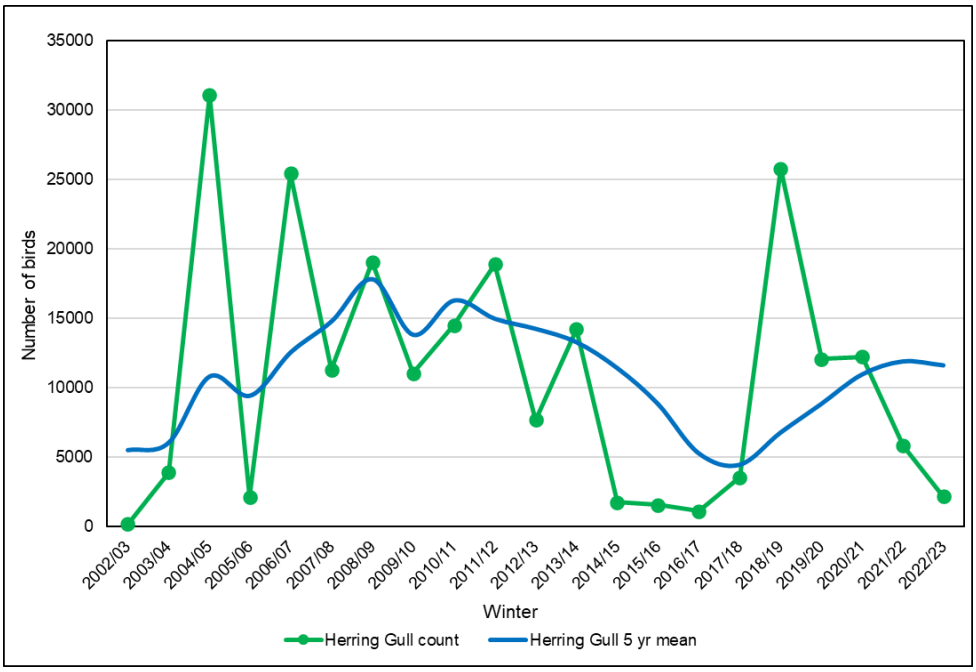

Figure A.53: The 20-year Ribble Estuary trend for herring gull (WeBS (Woodward *et al.*, 2024))

Lesser black-backed gull

Unlike the gulls discussed above, the lesser black-backed gull is more common during the breeding season, with most birds wintering further south. The Ribble Estuary hosts a breeding colony of lesser black-backed gulls, which was estimated to have 1,904 apparently occupied nests in 2024. This colony is part of the SPA and Ramsar citation, making breeding lesser black-backed gulls a species of high conservation concern in the area.

Lesser black-backed gulls have large foraging ranges, extending up to 533 km (Woodward et al., 2019), and can exploit both coastal/marine and terrestrial habitats. Like herring gulls, lesser black-backed gulls have experienced declines at the national level, but they have also increased in urban settings. Declines in natural nesting populations could be as high as 45%, while approximately 65% to 80% of birds are now nesting in urban environments. However, they are not as closely tied to the coast as herring gulls, with roughly half of all birds nesting more than 5 km from the shoreline.

National trend

At the national level, the population for lesser black-backed gull has shown a peak in the late 1990s, followed by a decline and recent gradual stabilisation (Figure A.54).

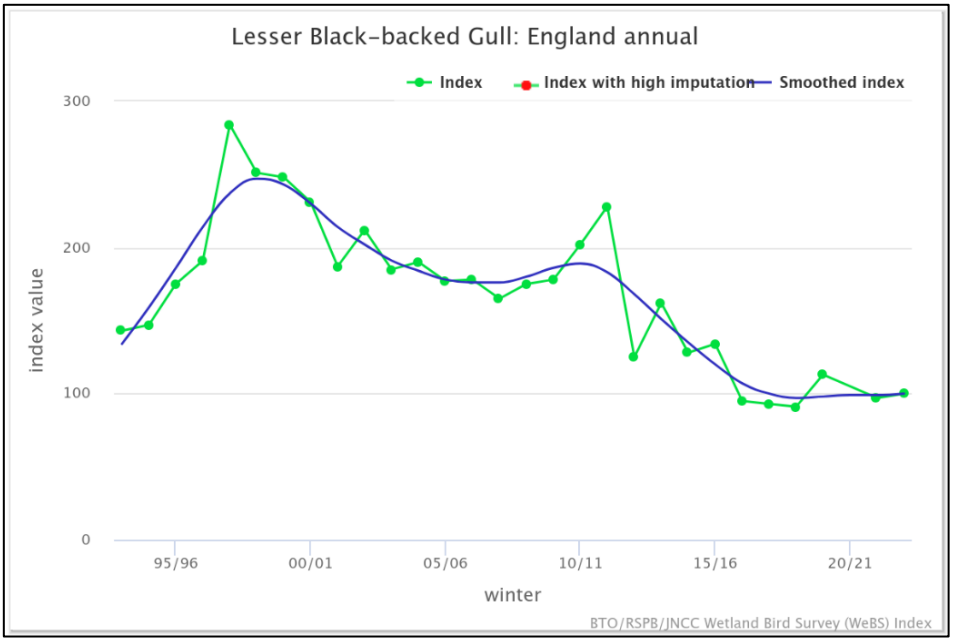

Figure A.54: The English population trend for lesser black-backed gull (WeBS (Woodward *et al.*, 2024))[1]

Regional trend

The Ribble Estuary has experienced significant fluctuations in lesser black-backed gull populations, with peak counts occurring around 2013/14. Recent data indicate a decline, with counts falling below 1,000 birds (Figure A.55). Lesser black-backed gulls are migratory, and the northwest of England is near the northern limit of their winter range. However, there are several nearby breeding colonies, and this species is much more prevalent in the Ribble Estuary between April and September. During this period,

mitigation measures will not be in effect, which will not create any additional attraction for lesser black-backed gulls.

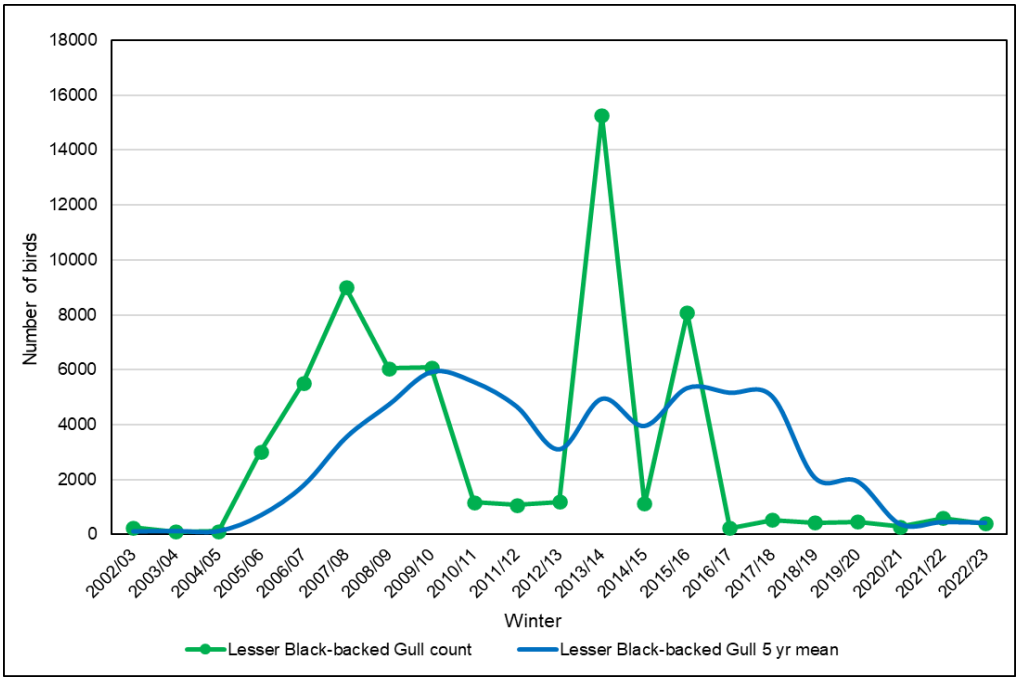

Figure A.55: The 20-year Ribble Estuary trend for lesser black-backed gull (WeBS ((Woodward *et al.*, 2024))

Great black-backed gull

This species is primarily coastal during the breeding season but will exploit inland areas during the winter. Great black-backed gulls are typically found alone and rarely form large groups or roosts. Due to their coastal and solitary habits, they pose a low risk to aviation. Blackpool Airport has not reported any bird strikes involving great black-backed gulls (Figure 1.7).

Fylde Club Bird data regarding gulls

The highest numbers of gulls are located within the river channel and along the coast (Figure A.56), where they feed and loaf on the intertidal zones. In some areas, higher concentrations were observed inland, primarily around Lytham Moss and near Blackpool Airport, where significant numbers of geese and swans were also recorded.

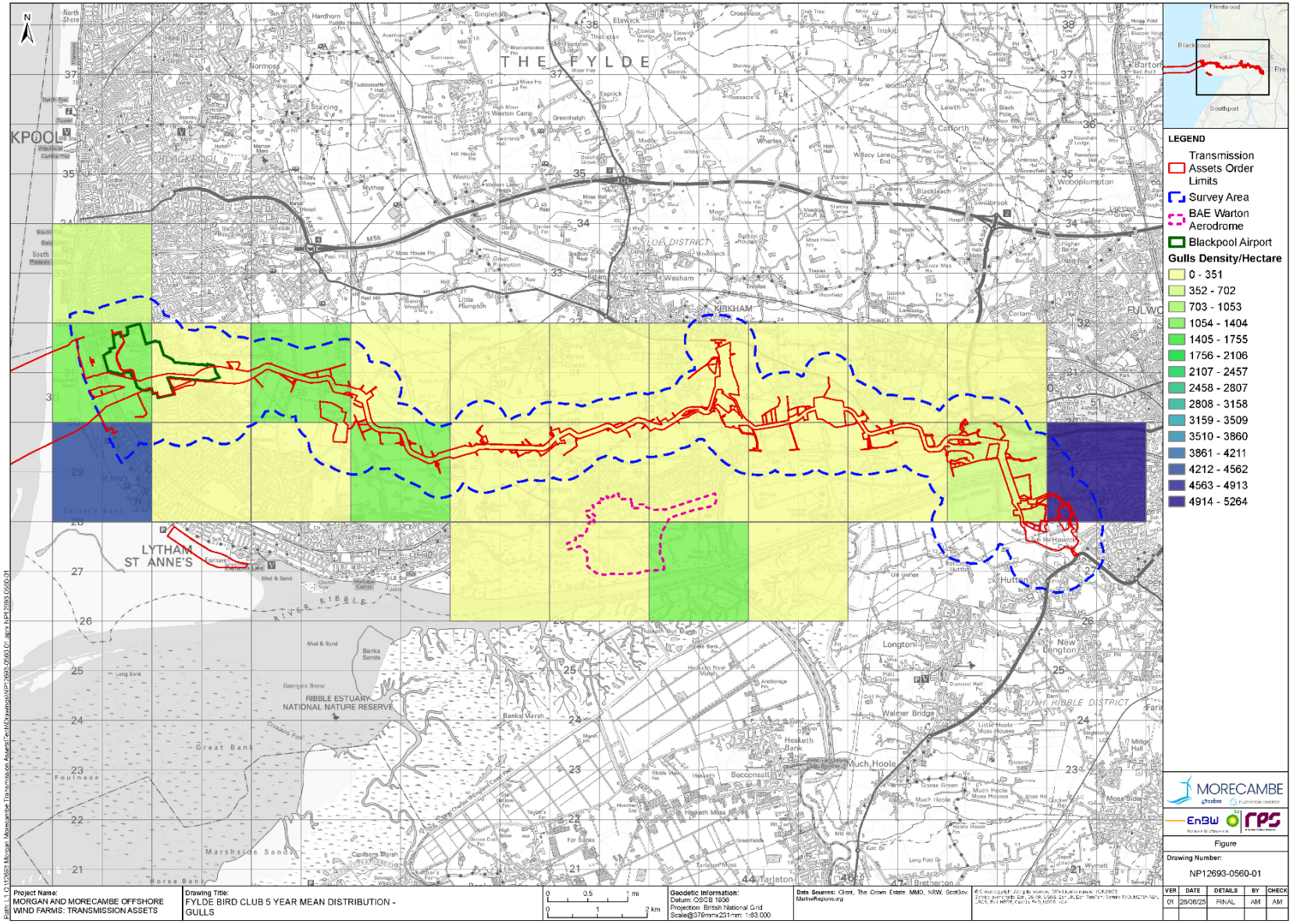

Figure A.56: Fylde Bird Club five-year average distribution of gull from 2018/19 – 2022/23

The Applicants' Data regarding gulls

Gulls were observed loafing, roosting, and foraging throughout the survey area (Figure A.57). Being mobile, especially during the non-breeding season, gulls are generalists that can exploit a wide range of habitats and food sources. As a result, their distribution is likely to change annually based on factors such as farm activity and land use.

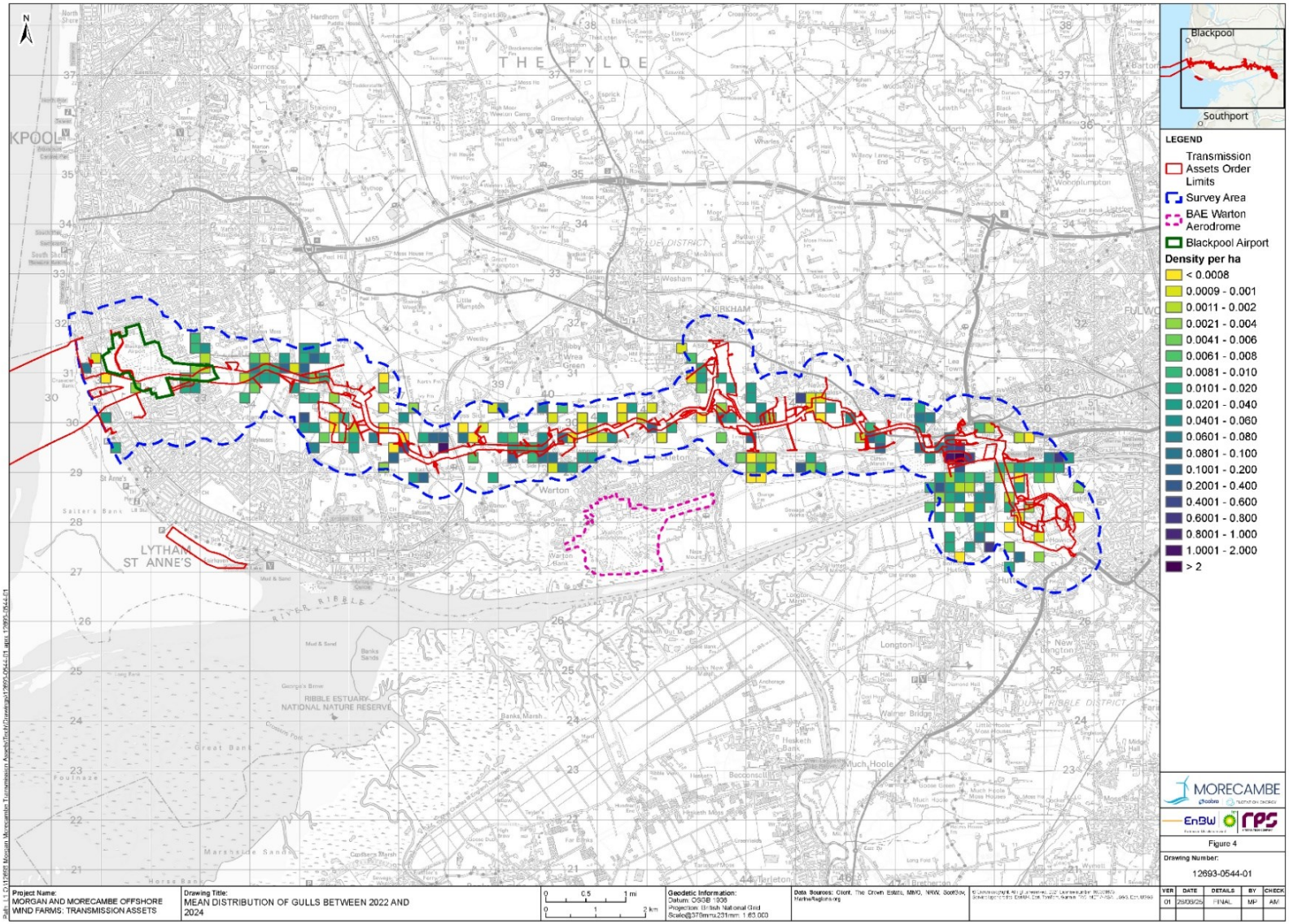

Figure A.57: The Applicants two-year average (2022 to 2024) distribution of gull

Corvids

Many corvids are widespread and common, and their size, along with the tendency of some species to congregate in groups, makes them a potential risk to aircraft safety (Table A.8).

Table A.8: Corvids facts and seasonality (BTO, 2025).

Species		Length	Wingspan	Weight	Seasonality in Blackpool area											
Magpie		40 – 51 cm	N/A	167 – 264 g	J	F	M	A	M	J	J	A	S	O	N	D
Jackdaw		30 – 34 cm	64 – 73 cm	196 – 265 g	J	F	M	A	M	J	J	A	S	O	N	D
Rook		41 – 49 cm	81 – 94 cm	360 – 550 g	J	F	M	A	M	J	J	A	S	O	N	D
Carrion crow		44 – 51 cm	84 – 100 cm	410 – 610 g	J	F	M	A	M	J	J	A	S	O	N	D

Orange = present

Due to the limited data available for inferring local trends for non-waterbird species, only the trends observed in England have been included.

Magpie

The magpie is a medium-sized, common, and widespread corvid (crow). As a generalist, it feeds on a diverse array of food sources. While magpies can thrive in various habitats, they prefer areas with tree cover or hedgerows. Typically, they are found singly, in pairs, or in small groups, and they rarely form larger gatherings.

National trend

In addition to significant fluctuations in numbers, the magpie population in England has experienced a slight increase since the mid-1990s (Figure A.58).

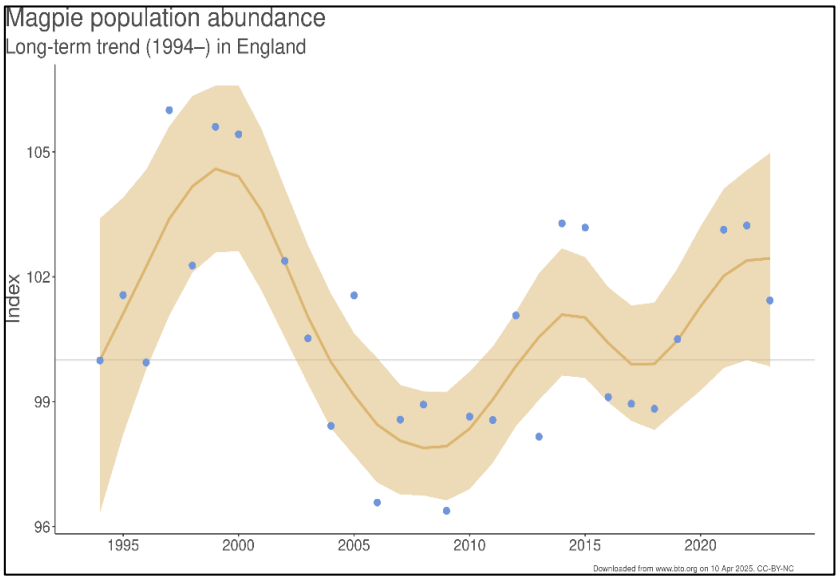

Figure A.58: The long-term trends for magpie in England (BTO BirdTrends)

Regional trend

No information is available.

Jackdaw

Jackdaw are a small to medium sized corvid. In the summer they split off to nest in tree cavities and similar, but in the autumn and through winter they congregate in large groups and feed and roost together.

National trend

At the national level, jackdaws have experienced a steady increase in population since the 1990s; however, this trend has recently been tempered by a levelling off and a slight decrease (Figure A.59).

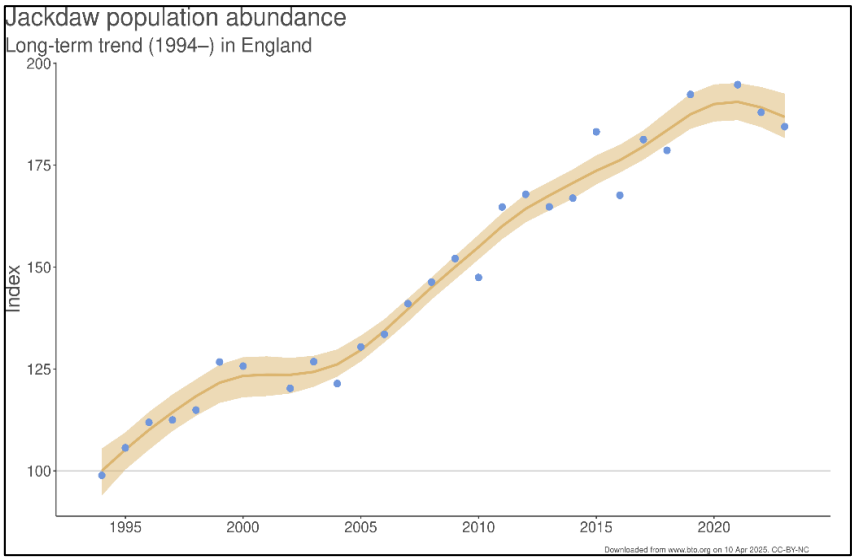

Figure A.59: The long-term trends for jackdaw in England (BTO Bird Trends)

Regional trend

No information is available.

Rook

Rooks are medium-sized corvids that live in colonies known as rookeries. In addition to nesting and breeding colonially, they often forage in large groups, frequently mingling with jackdaws.

National trend

At a national level, rook have seen an overall decline in numbers in England since the 1990s, and the trend is still a downward one (Figure A.60).

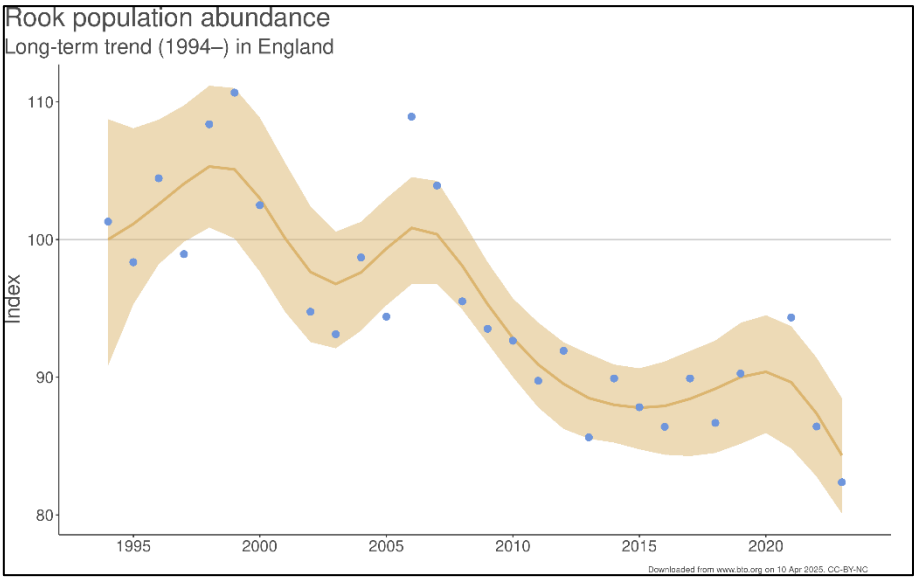

Figure A.60: The long-term trends for rook in England (BTO Bird Trends)

Regional trend

No information is available.

Carrion crow

Carrion crow are a mid to large corvid. They are generalists and exploit a wide range of food sources and can be found singly, in small groups, or in large groups.

National trend

At the national level, carrion crows have seen an increase in numbers in England since the 1990s. However, the initial steep rise has somewhat plateaued in recent years (Figure A.61).

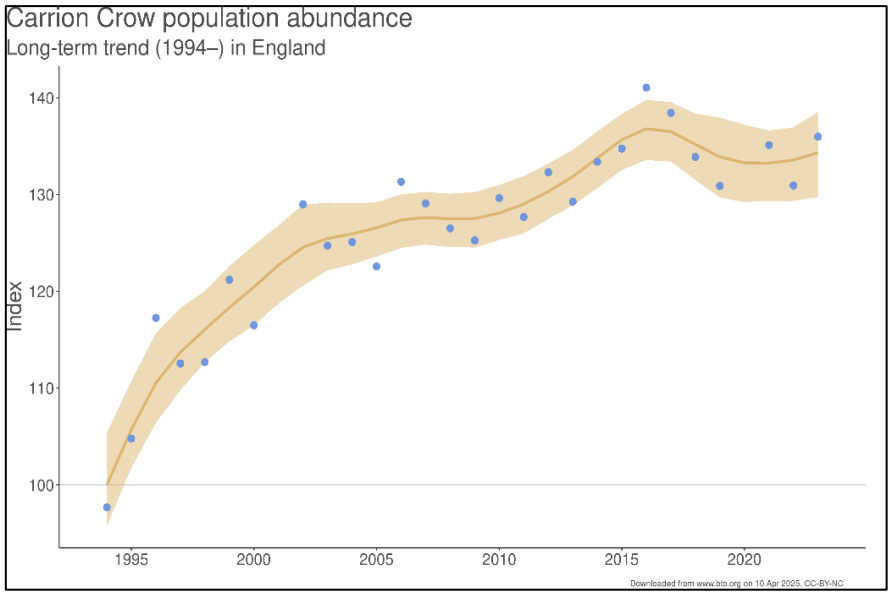

Figure A.61: The long-term trends for carrion crow in England (BTO Bird Trends)

Regional trend

No information is available.

Fylde Club Bird Data regarding corvids

Corvids are distributed throughout the terrestrial habitats, with particularly high concentrations at Lytham Moss near Blackpool Airport (Figure A.62). This is likely due to the proximity of a nearby rookery.

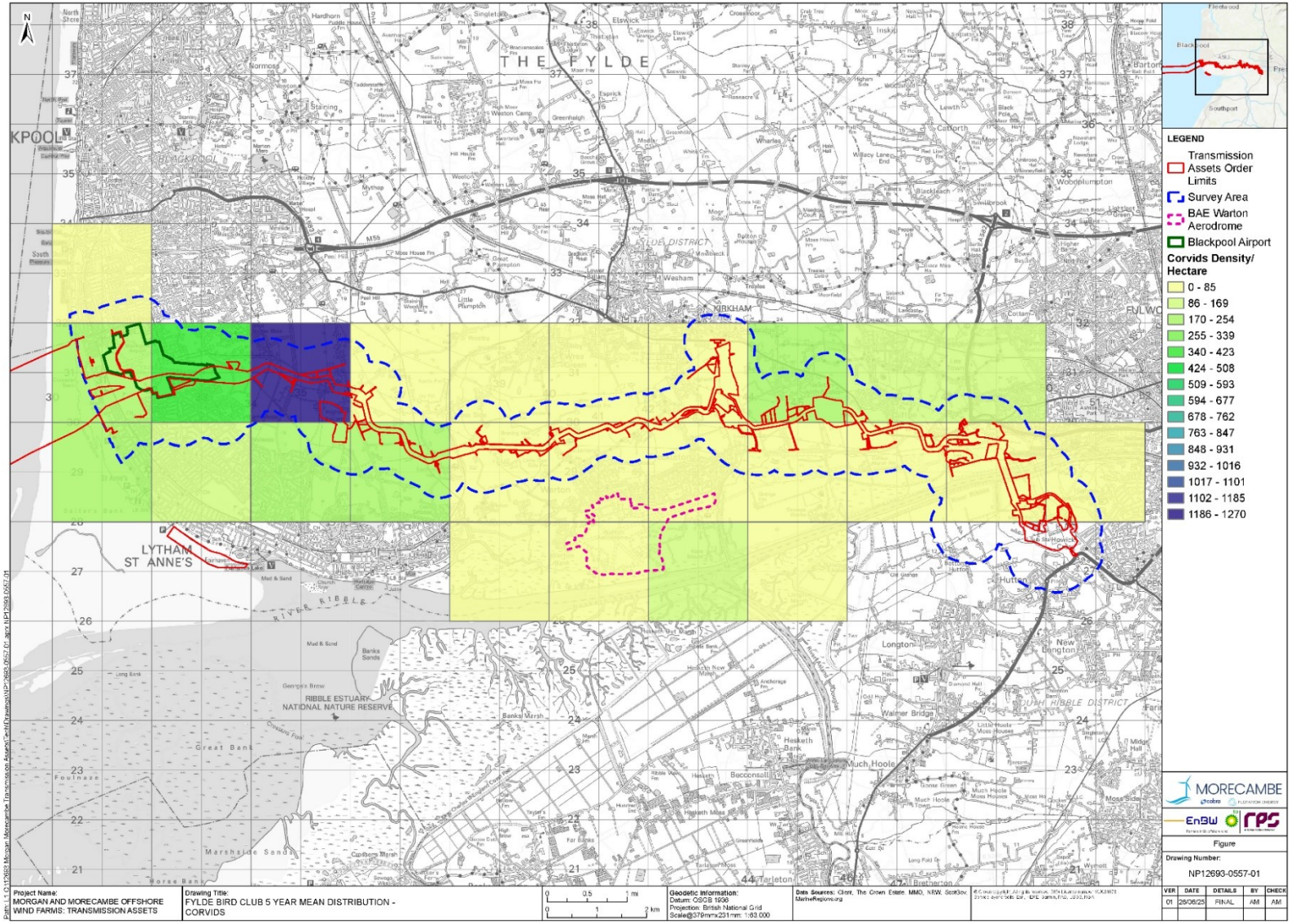

Figure A.62: Fylde Bird Club five-year average distribution of corvids from 2018/19 – 2022/23

The Applicant's data regarding corvids

Although corvids were widely distributed throughout the survey area, the Applicants, like Fylde Bird Club, found higher concentrations around Lytham Moss (Figure A.63). This is likely due to the presence of a nearby rookery.

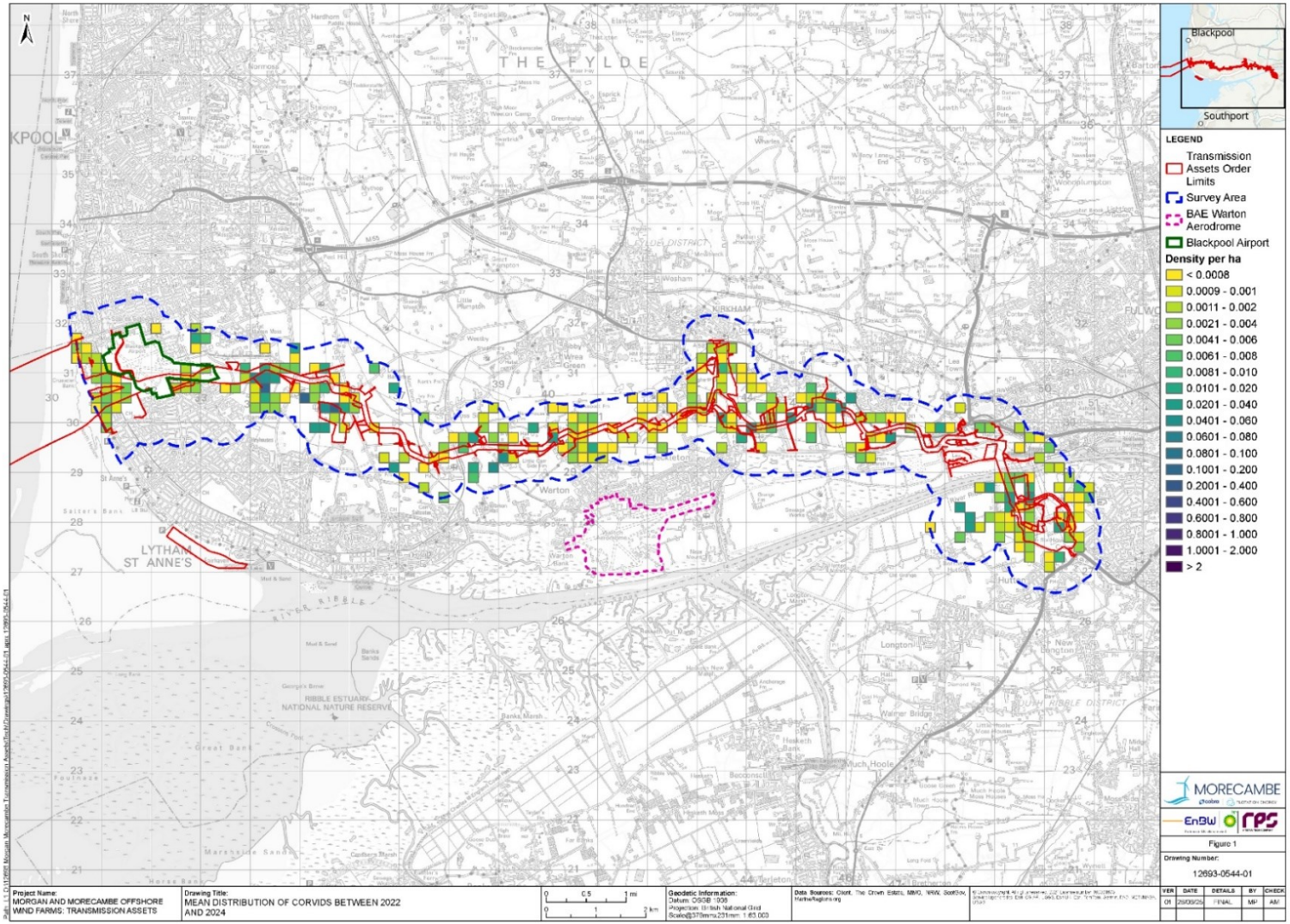

Figure A.63: The Applicants two-year average (2022 to 2024) distribution of corvids

Pigeons

Pigeons are present year round, however woodpigeons only form large flocks outside of the breeding season so they are likely to present less risk in the spring and early summer.

Table A.9: Pigeon facts and seasonality

Species	Length	Wingspan	Weight	Seasonality in Blackpool area											
Woodpigeon	38 – 43 cm	68 – 77 cm	269 – 620 g	J	F	M	A	M	J	J	A	S	O	N	D

Orange = present

Woodpigeon

The woodpigeon is a medium-sized pigeon that is present year-round. During the breeding season, woodpigeons nest in trees. During migration and throughout the winter, continental birds join the UK population, leading to the formation of large flocks. Woodpigeon typically forage in fields.

National trend

At the national level, the woodpigeon population in England has increased since the 1990s, although this growth has somewhat plateaued since 2010 (Figure A.64**)**.

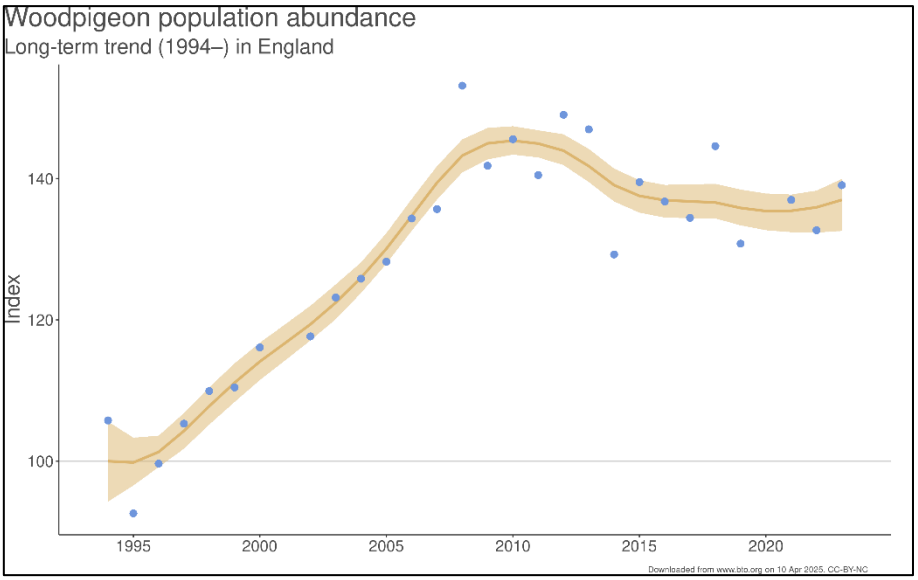

Figure A.64: The long-term trends for woodpigeon in England taken from the BTO BirdTrends

Regional trend

No information is available.

Fylde Club Bird Data regarding pigeons

Pigeons are well distributed throughout (Figure A.65) although they too are found in higher numbers around Lytham Moss, as the geese and swans are also feeding in this area it may be that there are more food resources to be found here.

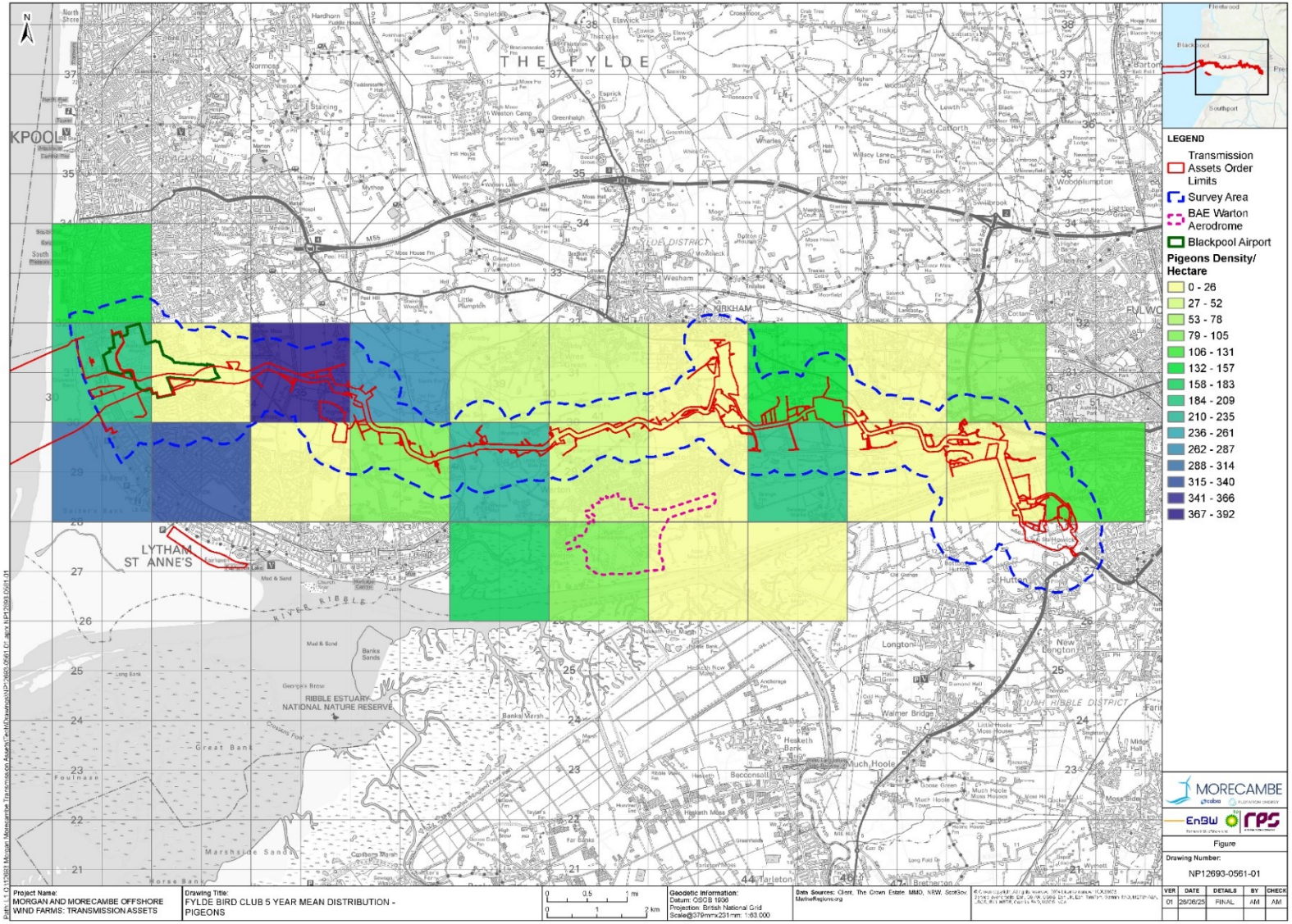

Figure A.65: Fylde Bird Club five-year average distribution of pigeons from 2018/19 – 2022/23

The Applicant's data regarding pigeons

Pigeons were widely distributed throughout the survey area with no clear pattern of usage (Figure A.66).

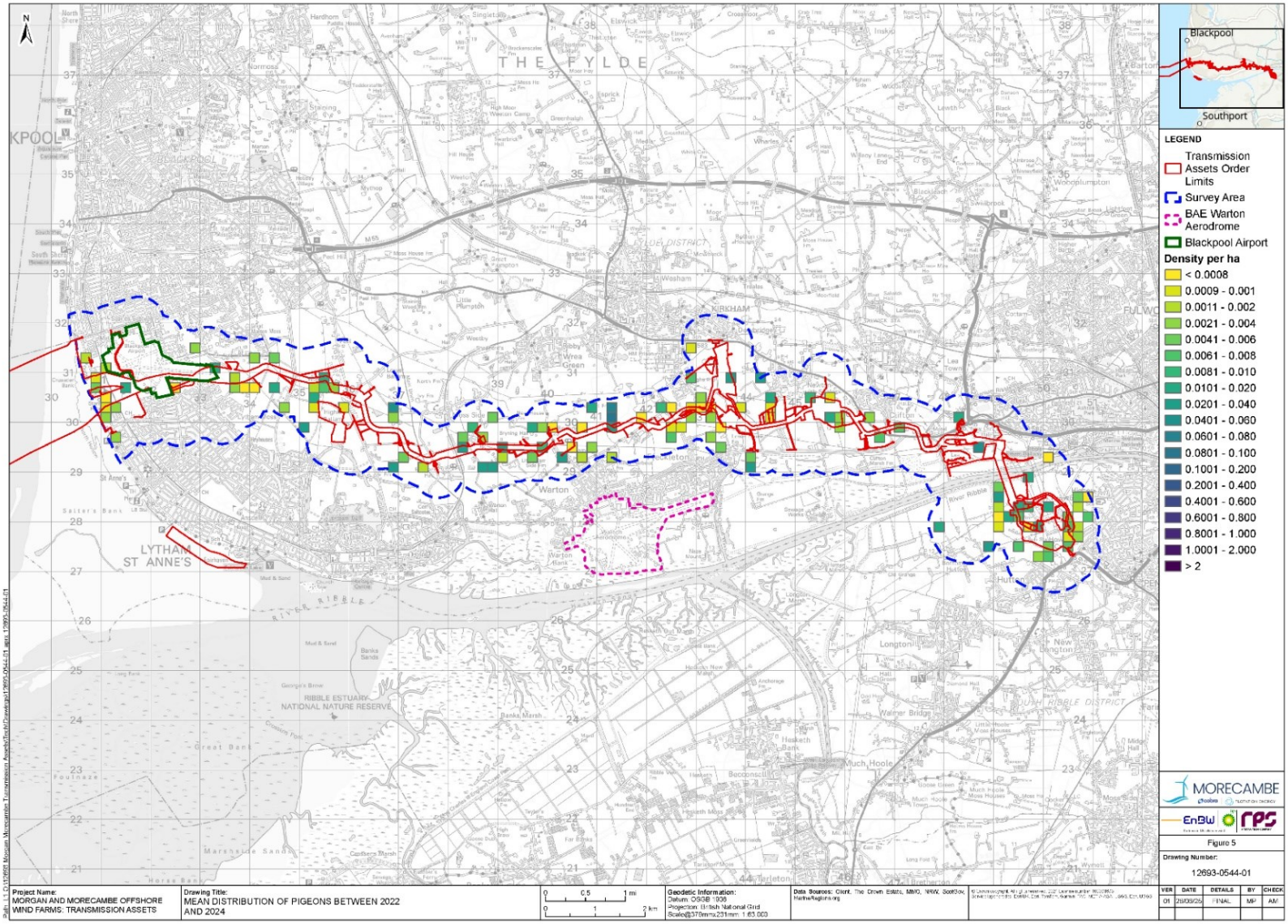

Figure A.66: The Applicants two-year average (2022 to 2024) distribution of pigeons

Starlings

Like woodpigeon, starlings are present year round. However, when breeding they are normally only found singly and in pairs. After the young fledge they start to form flocks which can reach many thousands of birds by winter with an influx of continental birds. Therefore, although present all year, starlings present a greater risk during the non-breeding season.

Table A.10: Starling facts and seasonality (BTO, 2025)

Species	Length	Wingspan	Weight	Seasonality in Blackpool area											
Starling	19 – 22 cm	N/A	72 – 98 g	J	F	M	A	M	J	J	A	S	O	N	D

Orange = present

Yellow = present in low numbers

Starling

The starling is a small passerine bird that forms breeding pairs during the breeding season and nests in tree holes and similar structures. Outside of the breeding season, starlings congregate in large flocks, which can reach impressive sizes, especially when they gather to roost in the evening. Starlings can be found foraging in a variety of environments, but they often prefer agricultural land.

National trend

At the national level, starlings have experienced long-term declines in England, with the population now approximately one-third of what it was in the 1990s. Although this decline has recently slowed, the overall trend remains downward (Figure A.67).

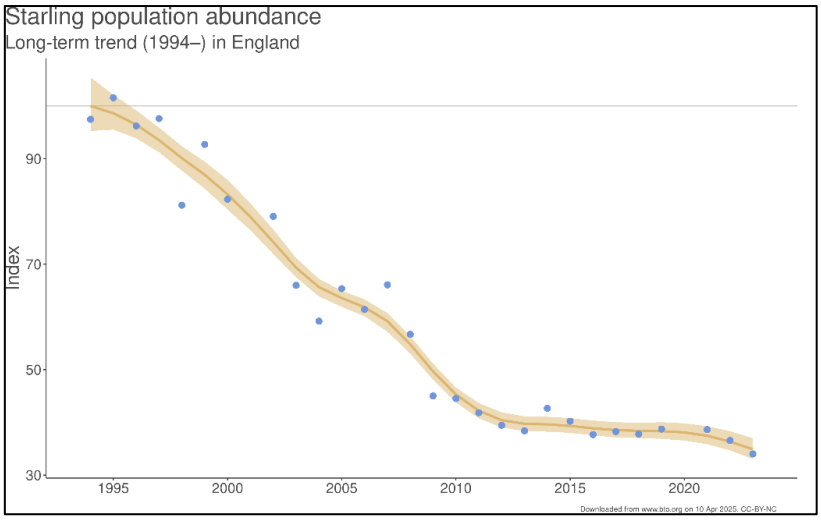

Figure A.67: The long-term trends for starling in England taken from the BTO BirdTrends

Regional trend

No information is available.

Fylde Bird Club Data regarding starlings

The highest concentrations of starlings were found in two areas: one at Lytham Moss and the other on the saltmarshes south of Warton (Figure A.68).

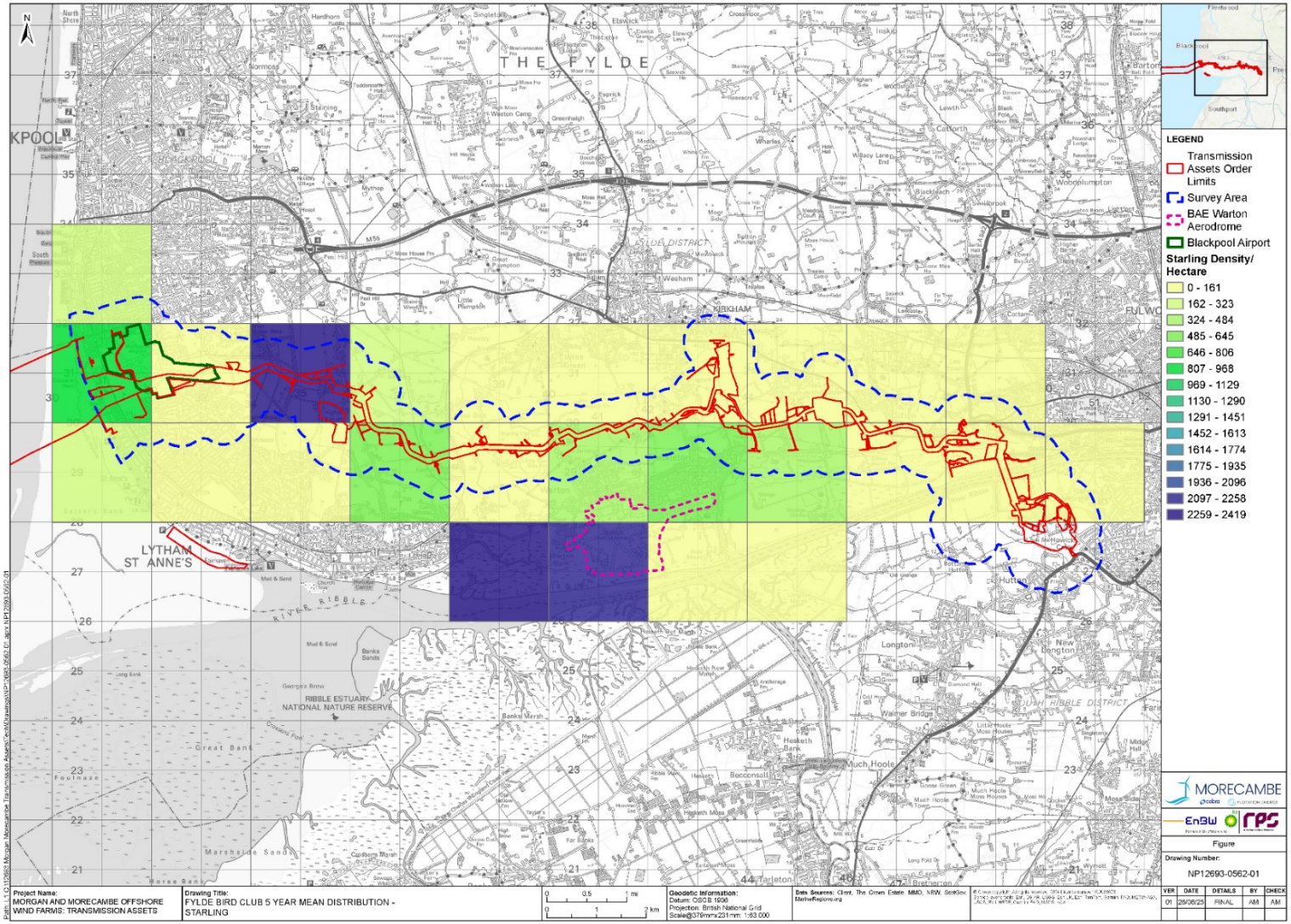

Figure A.68: Fylde Bird Club five-year average distribution of starling from 2018/19 – 2022/23

The Applicants' data regarding starlings

Starling were widely distributed throughout the survey area although with higher densities towards the coast (Figure A.69).

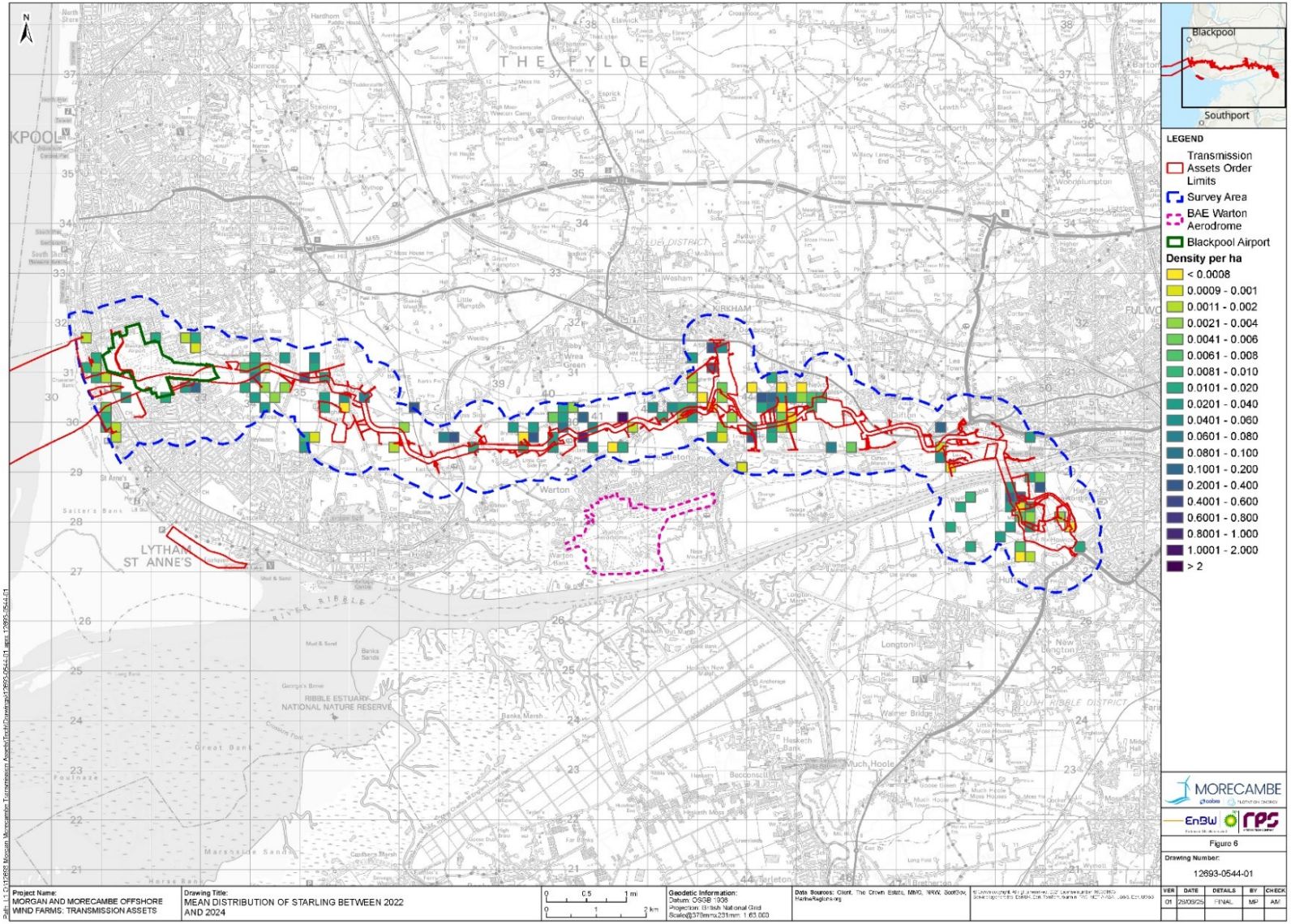

Figure A.69: The Applicants two-year average (2022 to 2024) distribution of starling

Winer thrushes

Winter thrushes, such as fieldfares and redwings, may be present in high numbers during the winter, especially when berry trees in Scandinavia are scarce, however they are very rare breeding birds and are not likely to be present in the area during the breeding season.

Table A.11 Winter thrush facts and seasonality (BTO, 2025)

Species	Length	Wingspan	Weight	Seasonality in Blackpool area											
Redwing	19 – 23 cm	N/A	50 – 84 g	J	F	M	A	M	J	J	A	S	O	N	D
Fieldfare	22 – 27 cm	N/A	91 – 127 g	J	F	M	A	M	J	J	A	S	O	N	D

Orange = present

Yellow = present in low numbers

Green = not present

Redwing

The redwing is another winter thrush with habits similar to those of the fieldfare. Like the fieldfare, its winter numbers are influenced by berry crops in Scandinavia.

National and regional trend

No information is available

Fieldfare

The fieldfare is a small to medium-sized bird belonging to the thrush family. Although a few individuals breed in the UK, they are primarily winter visitors. Their numbers fluctuate from year to year, depending on berry crops in their breeding areas. As a result, the number of fieldfares in the UK during any given winter is difficult to predict and relies on factors outside the country. Fieldfares can gather in large groups and primarily feed on berries, but they can also be found foraging in agricultural fields.

National and regional trend

No information is available

Fylde Bird Club data regarding winter thrushes

The winter thrush data is heavily influenced by seawatching counts (Figure A.70). However, it is important to note that their distribution in any given year is affected by food sources, such as berry trees. Since these trees do not produce consistent berry crops annually, predicting the distribution of winter thrushes is challenging.

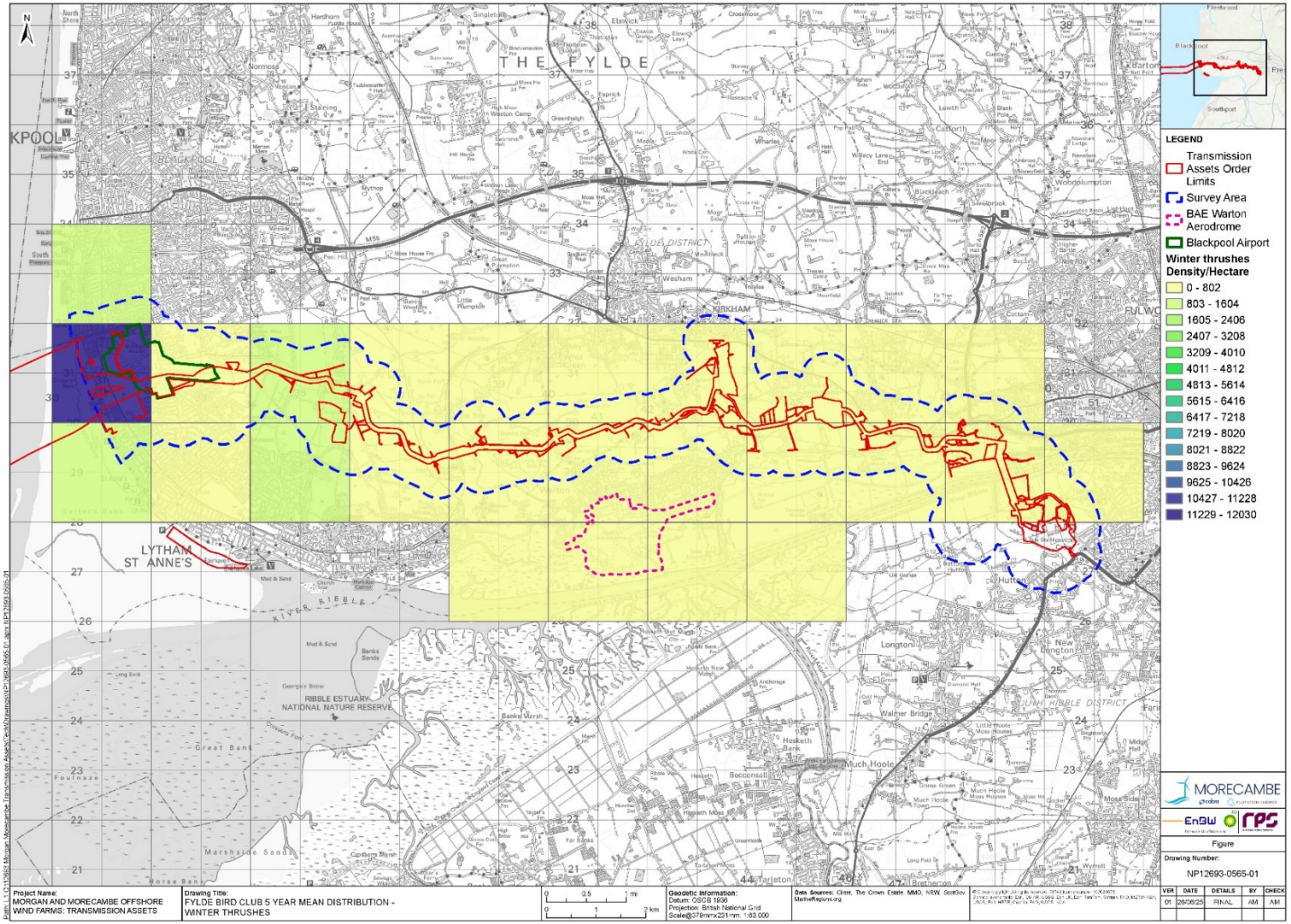

Figure A.70: Fylde Bird Club five-year average distribution of winter thrushes from 2018/19 – 2022/23

The Applicants' data regarding winter thrushes

Winter thrushes were concentrated in the area north of Warton (Figure A.71), likely due to the high availability of berries in the winter of 2023/24. This distribution is expected to vary significantly in the future based on resource availability and Scandinavian winter weather conditions in any given year.

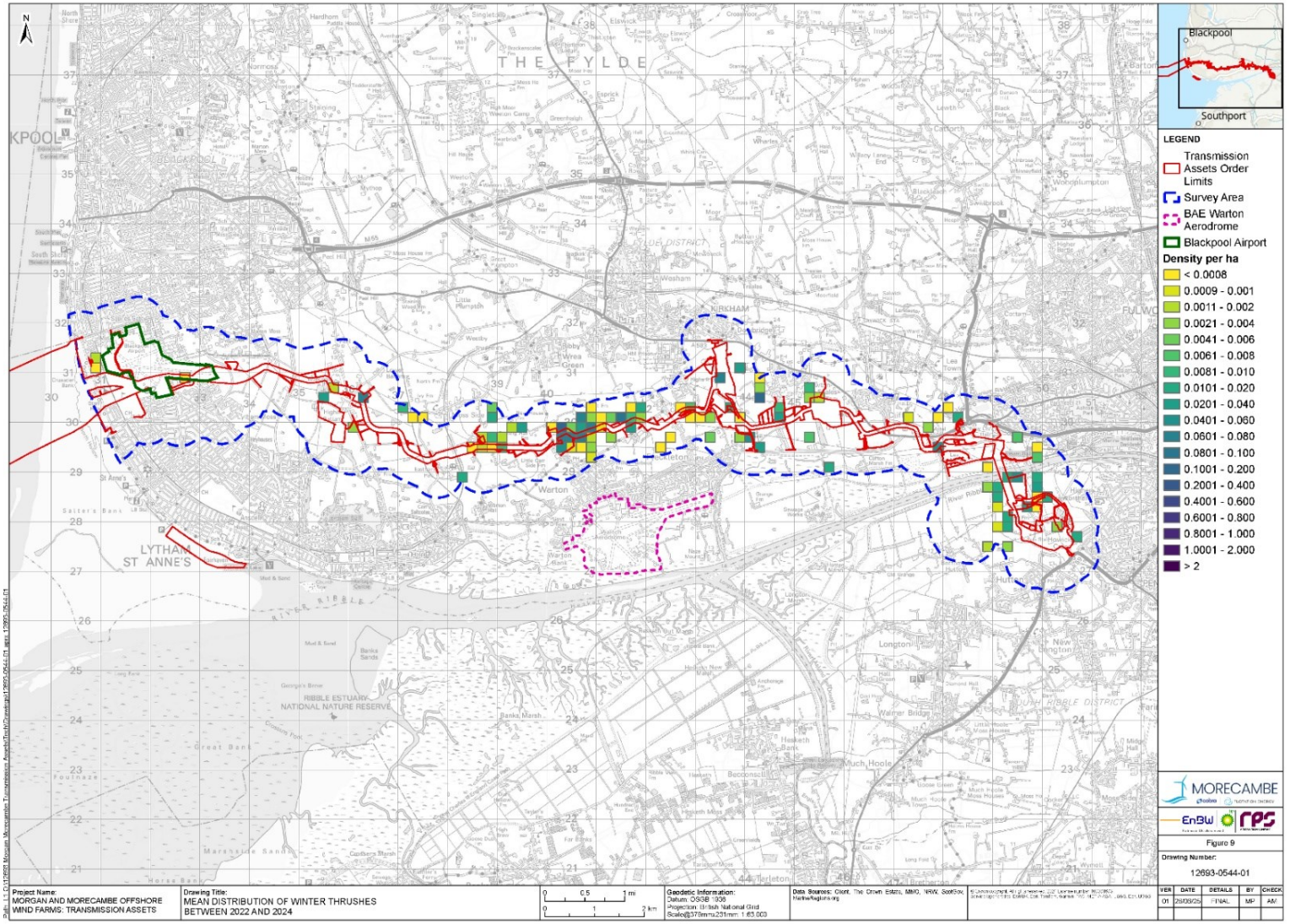

Figure A.71: The Applicants two-year average (2022 to 2024) distribution of winter thrushes.

Table A.12: The five-year monthly averages as taken from the Fylde Bird Club data from December 2018 – November 2023

Species group	Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Swans	Mute swan	19	7	12	17	7	15	8	14	11	13	33	11
	Bewick's swan	0	1	0	0	0	0	0	0	0	0	0	0
	Whooper swan	337	396	1,180	42	2	0	0	0	3	364	262	134
Geese	Canada goose	333	191	83	81	192	456	86	472	686	227	112	69
	Greylag goose	26	28	23	18	9	16	0	37	70	102	15	9
	Pink-footed goose	13,468	9,431	18,944	3,803	178	0	0	2	7,026	17,486	10,412	10,830
Ducks	Shelduck	226	274	198	309	192	289	327	441	335	137	161	100
	Mallard	261	82	110	138	111	51	47	229	137	181	226	88
	Wigeon	5,425	4,811	6,261	109	10	0	0	15	1,136	1,363	4,872	3,797
	Teal	1,286	897	687	169	7	6	7	166	1,310	2,413	1,914	1,443
Waders	Oystercatcher	292	321	90	179	27	51	161	544	249	77	88	331
	Golden plover	1,814	1,263	1,395	212	1	0	19	224	538	815	389	703
	Lapwing	7,248	5,131	403	159	64	107	1,008	713	860	1,213	3,516	6,120
	Redshank	157	138	158	83	31	67	808	1,586	1,036	199	90	99
	Black-tailed godwit	4,583	1,657	4,150	895	103	10	182	100	439	202	821	3,788
	Curlew	747	591	100	38	9	66	124	223	248	401	398	432
Gulls	Black-headed gull	1,900	550	314	80	46	120	588	947	723	1,155	757	2,532
	Common gull	256	83	77	11	0	6	16	62	81	169	145	131
	Herring gull	3,172	251	86	202	104	204	320	446	438	297	117	336
	Lesser black-backed gull	11	49	130	147	54	85	130	240	88	13	18	16

Species group	Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Great black-backed gull	15	9	15	15	5	18	16	25	15	4	4	24
Corvids	Magpie	40	21	38	26	31	12	7	6	9	17	13	31
	Jackdaw	150	50	31	41	50	9	52	83	41	627	145	188
	Rook	124	50	242	498	45	20	76	290	57	104	25	16
	Carrion crow	31	42	49	65	20	14	8	12	21	76	22	38
Pigeons	Feral pigeon	37	40	44	111	39	52	47	19	33	226	233	46
	Woodpigeon	284	322	304	310	122	44	37	115	125	135	100	109
Starling	Starling	987	1,334	1,516	196	127	230	1,736	143	213	3,216	1,128	343
Winter thrushes	Redwing	322	158	134	1	0	0	0	0	0	12,477	367	261
	Fieldfare	1,474	1,053	484	43	1	0	0	0	0	2,456	799	774

Table A.13: The Applicants site-specific survey results

Species group	Species	2022 – 2024 survey peak
Swans	Mute swan	24
	Whooper swan	132
Geese	Canada goose	636
	Greylag goose	517
	Pink-footed goose	8,319
Ducks	Shelduck	374
	Mallard	273
	Wigeon	1,647
	Teal	312
Waders	Oystercatcher	126
	Golden plover	381
	Lapwing	2,081
	Redshank	62
	Black-tailed godwit	423
	Curlew	696
Gulls	Black-headed gull	5,330
	Common gull	461
	Herring gull	1,009
	Lesser blacked-backed gull	205
Corvids	Magpie	90
	Jackdaw	325
	Rook	905
	Carrion crow	312
Others	Woodpigeon	687
	Starling	7,579
	Redwing	196
	Fieldfare	1,325