

MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Passage birds at Landfall: Technical Note



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Glossary

Term	Meaning
Intertidal Infrastructure Area	The area within which all components between Mean High Water Springs (MHWS) and Mean Low Water Springs (MLWS) of the Transmission Assets will be located.
Coastal survey area	The area at the proposed landfall that was surveyed during the intertidal bird surveys. This area includes the Intertidal Infrastructure Area seaward of Highest Astronomical Tide buffered by 500 m to account for disturbance as described within Volume 3, Annex 4.4: Onshore and intertidal ornithology methodologies (APP-095) of the ES.
Landfall	The area in which the offshore export cables make landfall (come on shore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area at Lytham St. Annes between Mean Low Water Springs and the transition joint bays inclusive of all construction works, including the offshore and onshore cable routes, intertidal working area and landfall compound(s).
Spring passage	The period during which birds are travelling from their wintering grounds to their breeding grounds. This runs during the months of April to June (inclusive).
Autumn passage	The period during which birds are returning from their breeding grounds to their wintering grounds. This runs during the months of July to October (inclusive).
Passage period	Composed of both the spring and autumn passage periods and runs during the months of April to October (inclusive).
Winter period	The months of November to March (inclusive).

Morgan and Morecambe Offshore Wind Farms: Transmission Assets ('Transmission Assets')

Reference: Transmission Assets Pre Examination: Passage birds at the landfall

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This document was provided to Natural England on 4 April 2025 as part of pre-examination discussions relating to effects of cable installation at the landfall on passage species and the use of Fairhaven saltmarsh as part of the mitigation strategy to minimise effects on these features of the Ribble and Alt Estuaries SPA. The content of this note was discussed with Natural England on 25 July 2025 during which Natural England suggested this note should be submitted into Examination. Since this note was provided to Natural England, further commitments have been made with respect to passage species as set out in Volume 1, Annex 5.3: Commitments Register (F05).

1 Introduction

- 1.1.1.1 The Applicants note that Natural England have made Relevant Representations (RR-1601) regarding the conclusions of no adverse effect on site integrity of the Ribble and Alt Estuaries presented in the Habitat Regulations Assessment (HRA) application materials.
- 1.1.1.2 The Applicants thank Natural England for a productive meeting on 20 February 2025. The main aim of the meeting was to discuss appropriate measures (i.e., seasonal restriction) to support the Applicants' conclusions of no adverse effect on site integrity of the Ribble and Alt Estuaries. At the meeting on 20 February 2025, the Applicants informed Natural England that they have committed to avoiding any construction works on the intertidal and upper beach, at Lytham St Annes, during the wintering period (between November and March (inclusive)). Therefore, there will be no potential impact upon the wintering features of the Ribble and Alt Estuaries SPA and Ramsar.
- 1.1.1.3 Whilst there will be no potential impact upon the wintering features of the Ribble and Alt Estuaries SPA and Ramsar, the only potential impacts may be upon the passage and breeding features that use tidal flat and supratidal habitats at the landfall. The Applicants committed at the meeting on 20 February 2025 to provide additional information on the potential impacts of construction activities during the passage and breeding period.
- 1.1.1.4 This technical note aims to:
- Provide further detail (temporal and spatial usage) on the passage features using the landfall and refining the period (**Section 3.1.9**) during which construction activities at the landfall might adversely impact passage birds at the SPA level;
 - Provide further detail on the proposed mitigation area at Fairhaven Saltmarsh – How this area is linked to the birds present at the landfall, how the Transmission Assets aims to reduce potential impacts in this area on a comparable basis with the potential impacts at the landfall, and how the Transmission Assets has/aims to involve other stakeholders to ensure that the mitigation stands a high chance of success. (**Section 4**);
 - Provide further detail (temporal and spatial usage) on the passage features using the proposed mitigation at Fairhaven saltmarsh (**Section 4**); and
 - Define the potential impacts to birds (i.e., construction methods and period) during the passage period.
- 1.1.1.5 **Table 1**, below provides details on the features of the Ribble and Alt Estuaries SPA and Ramsar site.
- 1.1.1.6 The landfall area comprises the area within the Transmission Assets Order Limits between MLWS and the TJBs, inclusive (i.e., Work Nos 4A/4B, 5A/5B, 6A/6B, 7A/7B, 8A/8B, 9A/9B, 10A/10B, 14A/14B, 18A/8B, 19A/19B, 34A/34B, 36A/36B, 38A/38B, 42A/42B, 43A/43B, 47A/47B on Figure 3.11, Volume 1: Figures). However, the area where

intertidal waders may be impacted is composed of the intertidal and supratidal habitats contained within 4A4B and 5A5B only. This is the area highlighted in **Figure 1**.

Table 1 : All features of the SPA and Ramsar

Species	Habitat used	Period	Designation
Bewick's Swan <i>Cygnus columbianus bewickii</i>	Saltmarsh and Terrestrial	Winter	SPA, Ramsar
Whooper Swan <i>Cygnus cygnus</i>	Saltmarsh and Terrestrial	Winter	SPA, Ramsar
Pink-footed Goose <i>Anser brachyrhynchus</i>	Saltmarsh and Terrestrial	Winter	SPA, Ramsar
Wigeon <i>Mareca penelope</i>	Saltmarsh and Terrestrial	Winter	SPA, Ramsar
Teal <i>Anas crecca</i>	Saltmarsh and Aquatic habitats	Winter	SPA, Ramsar
Pintail <i>Anas acuta</i>	Fresh and brackish aquatic habitats	Winter	SPA, Ramsar
Golden plover <i>Pluvialis apricaria</i>	Saltmarsh and Terrestrial	Winter	SPA
Shelduck <i>Tadorna tadorna</i>	Saltmarsh and Terrestrial	Winter	SPA
Black-tailed Godwit <i>Limosa limosa islandica</i>	Saltmarsh and Terrestrial	Winter	SPA
Bar-tailed Godwit <i>Limosa lapponica</i>	Tidal flats	Winter	SPA, Ramsar
Oystercatcher <i>Haematopus ostralegus</i>	Tidal flats	Winter	SPA, Ramsar
Grey Plover <i>Pluvialis squatarola</i>	Tidal flats	Winter	SPA, Ramsar
Knot <i>Calidris canutus islandica</i>	Tidal flats	Winter	SPA, Ramsar
Sanderling <i>Calidris alba</i>	Tidal flats	Winter	SPA
Dunlin <i>Calidris alpina alpina</i>	Tidal flats	Winter	SPA
Redshank <i>Tringa totanus</i>	Tidal flats	Winter	SPA
Ringed Plover <i>Charadrius hiaticula</i>	Tidal flats	Passage	SPA, Ramsar
Dunlin <i>Calidris alpina</i>	Tidal flats	Passage	Ramsar
Sanderling <i>Calidris alba</i>	Tidal flats	Passage	SPA, Ramsar
Redshank <i>Tringa totanus</i>	Tidal flats	Passage	SPA, Ramsar
Black-tailed godwit <i>Limosa limosa islandica</i>	Saltmarsh and Terrestrial	Passage	Ramsar
Ruff <i>Calidris pugnax</i>	Terrestrial	Breeding	SPA
Lesser Black-backed Gull <i>Larus fuscus graellsii</i>	Saltmarsh, Terrestrial, Tidal flats and Marine	Breeding	SPA
Common Tern <i>Sterna hirundo</i>	Saltmarsh, Upper beach and Marine	Breeding	SPA

1.1.1.7 Spring passage is defined as the period from April to June (as defined by the Wetland Bird Survey (BTO, 2025), autumn passage between July and October (as defined by the Wetland Bird Survey (BTO, 2025), and the breeding season between April and July (Table 2). This is a broad period of seven months, and these key periods are discussed further with specific consideration of site-specific survey data obtained at the landfall in **Section 3.1.9**.

Table 2: The standard bird seasons allocated through the calendar year

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wintering period										Wintering period	
			Spring and autumn passage period								
			Breeding period								

1.1.1.8 The following passage and breeding features therefore have potential to be impacted by the Transmission Assets:

- Passage period
 - Ringed plover
 - Dunlin
 - Sanderling
 - Redshank
- Breeding period
 - Lesser black-backed gull
 - Common tern

1.1.1.9 The Habitats Regulations Assessment Stage 2 Information to Support an Appropriate Assessment Part Three – Special Protection Areas (SPA) and Ramsar Site assessments (APP-017) concluded no adverse effect on site integrity of the SPA breeding features. Lesser black-backed gull have a very large foraging range of 127 ± 109 km (Woodward *et al.*, 2019), will utilise terrestrial and marine habitats, are generalist and can exploit a wide variety of food sources, and are very tolerant of disturbance. Therefore, there are predicted to be negligible effects on the LBBG's that utilise the landfall area at Lytham St Annes beach for foraging and/or loafing.

1.1.1.10 Common tern were recorded foraging in low numbers, and very infrequently during the breeding season. The peak count, which was recorded in August 2023, was a mixed flock of sandwich tern and common tern that were loafing and roosting on the mid beach. These are thought to represent post-breeding passage birds. Due to low numbers during the breeding period and infrequency of recording during site-specific surveys, it is concluded that the landfall is of low importance for common tern during the breeding period. WeBS data for

the sector overlapping with the landfall is presented within table 1.8 of Volume 3, Annex 4.3: Intertidal birds technical report (APP-094).

- 1.1.1.11 All bird data presented within this technical note (i.e., distribution and tidal abundances) were collected during the passage period (April – October). Winter distributions and tidal abundances are not presented here due to the lack of impact pathways as a result of the Applicants commitment of avoiding any construction works on the intertidal and upper beach, at Lytham St Annes, during the wintering period (between November and March (inclusive)).

2 Survey and study areas

2.1 The landfall

2.1.1 Description

- 2.1.1.1 The landfall is situated at the northern edge of the Ribble and Alt Estuaries SPA, between Blackpool and Lytham St Annes (**Figure 1**). It is a sandy strip that narrows as it approaches Blackpool. The primary habitat at the landfall is tidal sandflats (**Plate 1**).
- 2.1.1.2 This area of beach is a popular location for recreational activities, in particular during weekends and holidays. For example, a peak count of 210 persons and 57 dogs was recorded on 31st May 2023 across the landfall during one snapshot count. Snapshot counts of potential disturbance sources were made during the ornithological baseline characterisation surveys conducted between September 2021 and August 2023 (inclusive). The average number of disturbance sources recorded per month at the landfall are presented within **Table 3**. Furthermore, a JCB which appears to clear the beach on a daily basis.



2.1.1.3 The landfall is a key habitat for a number of passage features of the Ribble and Alt Estuaries SPA and Ramsar site, this is supported by the results of the site-specific surveys conducted at the landfall (see **Section 3.1**). These species forage along the coast and feed on invertebrate prey found both within the substrate and washed up by the sea. At high tide, birds that have been foraging, gather to roost in large numbers. These birds are pushed into a decreasing area of beach as the tideline encroaches, and into closer proximity to people using the beach for recreational activities.

2.1.1.4 The landfall does not support any regular high tide roosts, likely due to the level of disturbance from recreational activities (with the exception of a small redshank and turnstone roost within the tidal defences at Blackpool which holds below 1% of the SPA population of redshank and is mostly present during the wintering period (November – March)), which is outwith the Transmission Assets Order Limits. Although the area is subject to substantial recreational disturbance, the commencement of the proposed construction works associated with the Transmission assets in the intertidal infrastructure area could subject birds in this area to additional disturbance.

Table 3: Average number of potential disturbance sources recorded during snapshot counts carried out between September 2021 and August 2023. A total of 24 snapshot counts were made during each calendar month.

Month	Disturbance source		
	Walkers	Dogs	Kite surfers/wind surfers
January	23	14	1
February	17	11	1
March	16	10	0
April	18	10	0
May	33	13	1
June	13	5	0
July	25	8	1
August	69	10	1
September	21	20	0
October	9	5	1
November	16	10	0
December	10	7	0



Plate 1: Photographs of the typical habitats at the landfall.

2.1.2 Site-specific surveys methodology

- 2.1.2.1** Surveys were undertaken at the landfall between September 2021 and August 2023 (inclusive). These surveys followed a through-the-tidal cycle count methodology whereby 12 hourly counts were undertaken every month over the two-year period to fully represent every stage of the tidal cycle. The survey duration and frequency were considered appropriate to characterise both, annual and monthly fluctuations, and bird usage during different tidal states.

2.2 Fairhaven saltmarsh – area of proposed mitigation

2.2.1 Description

2.2.1.1 Fairhaven saltmarsh is an area of developing saltmarsh approximately 2.75 km to the south and east of the landfall (see Figure 2 and Figure 3). It has been identified as the closest significant high-tide roost to the landfall through desktop sources (Still *et al.*, 2013) and site-specific surveys carried out.

2.2.1.2 This area of approx. 72,500m² of saltmarsh habitat is a key roosting area for a number of wader species which roost in a narrow strip seaward the saltmarsh around the high tide period. Species reported roosting in this location (from Still, *et al.*, 2015) include oystercatcher, grey plover (in nationally important numbers), knot, sanderling (in nationally important numbers), dunlin, redshank, bar-tailed godwit (in nationally important numbers), and curlew. This is corroborated by the findings of the WeBS and site-specific surveys (see **section 4**), and many of these species are also the receptors of potential impacts from construction works at the landfall. As this is an important roost in the SPA, and as it is the closest high tide roost site to the landfall, it is likely that the birds that were recorded loafing, foraging and/or roosting at the landfall are the same birds that roost at the Fairhaven saltmarsh.

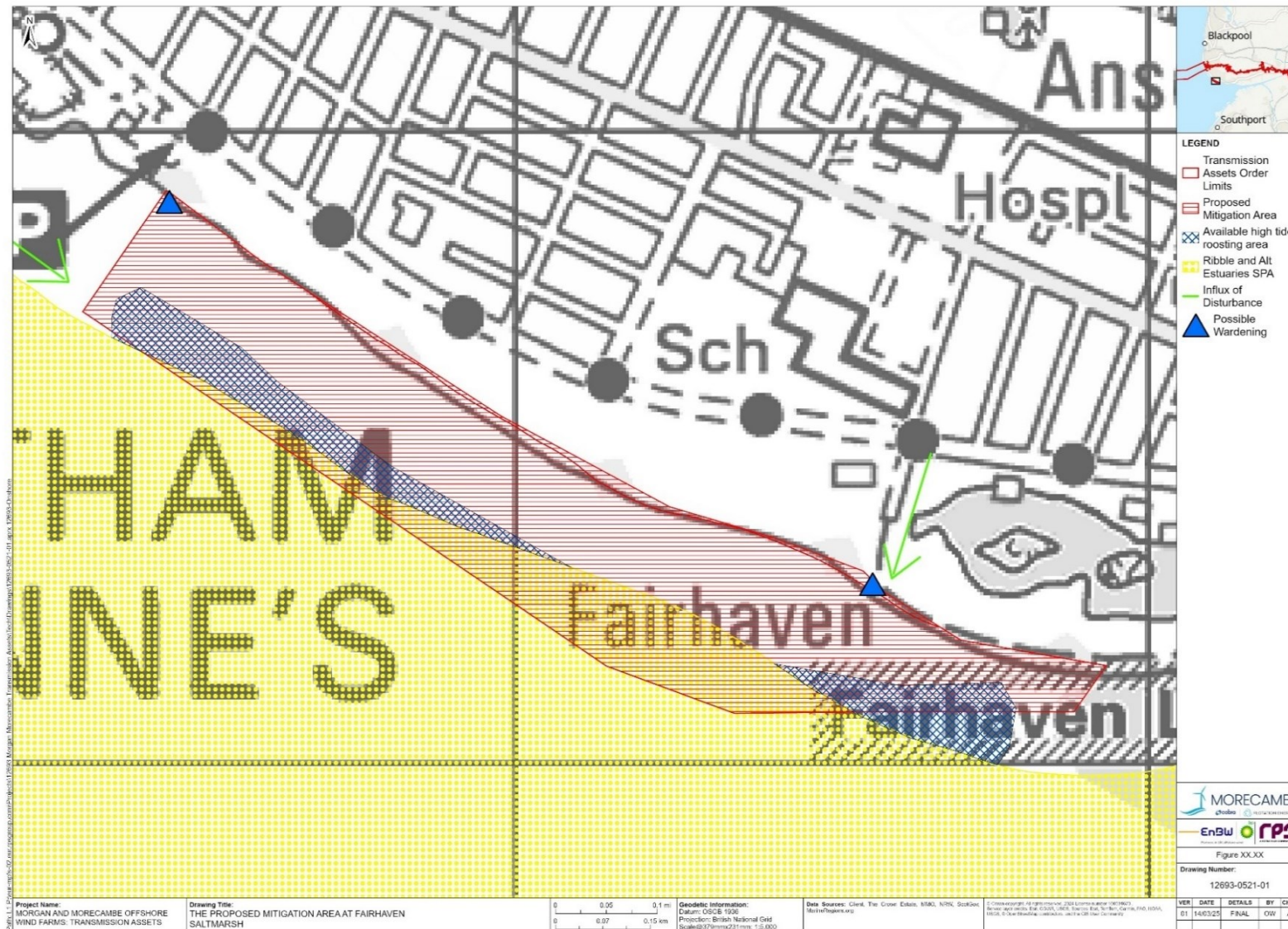


Figure 2: The proposed mitigation area at Fairhaven saltmarsh (not to scale)

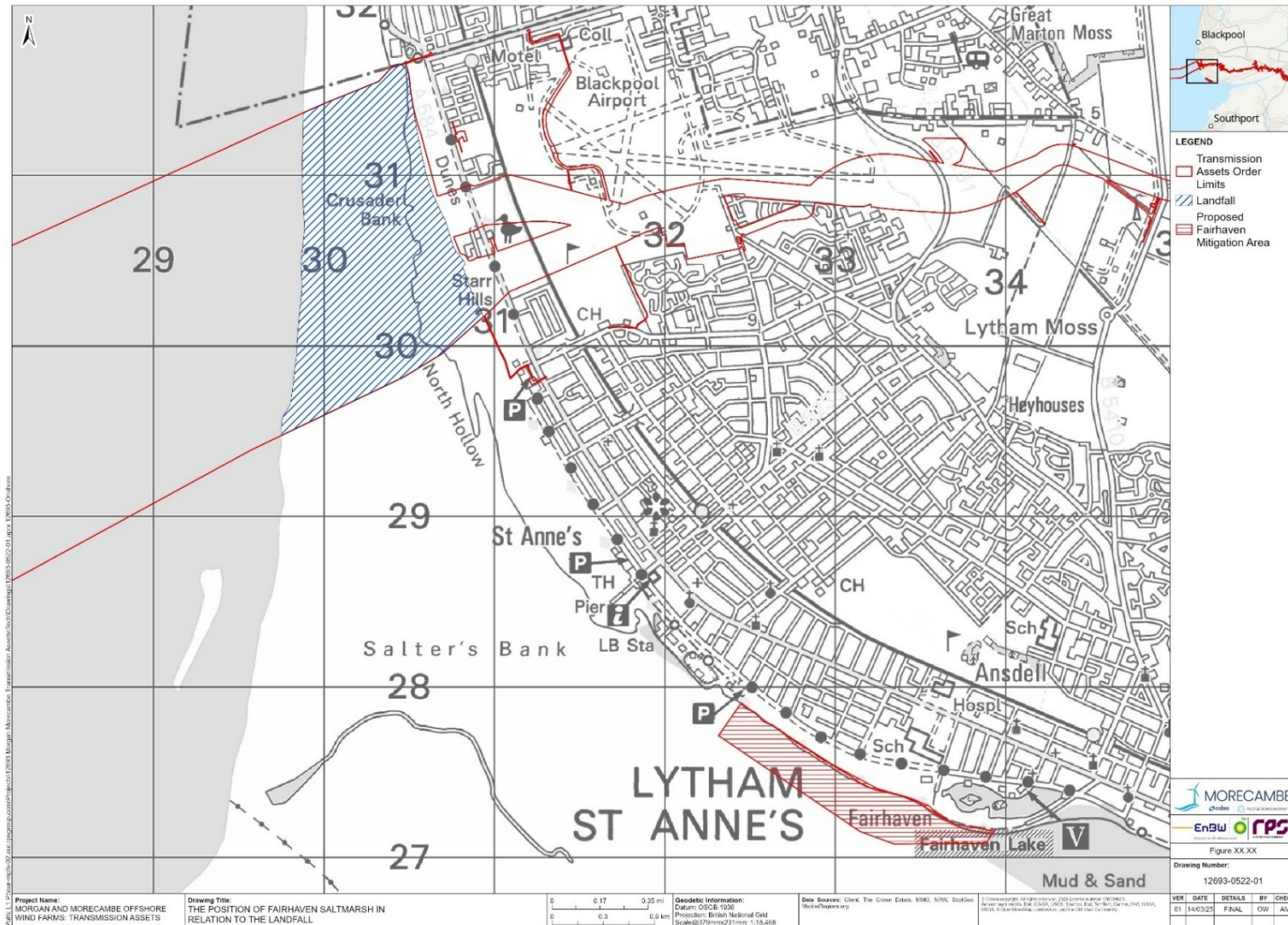


Figure 3: The position of Fairhaven saltmarsh in relation to the landfall (not to scale)

- 2.2.1.3 Disturbance at Fairhaven saltmarsh is currently very high as the area is frequented daily by large numbers of people. Whilst many people stick to the footpath that runs along the toe of the sand dunes, there are others who walk through the saltmarsh or along the tideline where the birds are roosting. Due to the high numbers of birds present, one dog walker walking along the tideline can disturb 10,000+ birds, with some of those possibly being flushed on multiple occasions over one high tide period. Examples of this disturbance are illustrated within Plate 2.
- 2.2.1.4 The number of disturbance events due to walkers and dogs recorded during bird surveys at Fairhaven saltmarsh is presented within Table 4 and it is possible that disturbance events upon the roosting birds at Fairhaven saltmarsh are the cause of the occasional high numbers of birds that were found roosting at the landfall. There is a wealth of evidence across the literature illustrating the impacts of recreational disturbance on non-breeding waders. These effects include increased energy expenditure (Burton et al., 2002a; Kolk, 2021), a shortage of safe roosting areas (Liley and Sutherland, 2007), and changes in abundance and behaviour.

Table 4: The number of monthly disturbance events recorded during a single snapshot count at the Fairhaven saltmarsh. High tide roosts are carried out between September 2023 and October 2024).

Month	Disturbance events	
	Walkers	Dogs
January	2	2
February	7	4
March	1	1
April	No survey was undertaken	No survey was undertaken
May	1	3
June	17	1
July	Disturbance was not recorded	Disturbance was not recorded
August	Disturbance was not recorded	Disturbance was not recorded
September	7	8
October	Disturbance was not recorded	Disturbance was not recorded
November	0	0
December	6	6



Plate 2: Photographs of the habitats at the Fairhaven saltmarsh.

2.2.1.5 The rationale in selecting this site for mitigation is that, as daily energy budgets may be increased due to temporary habitat loss and

disturbance at the landfall, energy savings made by reducing disturbance at the roost site could make up for these losses. Implementing regulatory signs (i.e., signs informing and instructing members of the public to avoid areas containing sensitive birds) has been demonstrated to reduce the proximity of visitors to nesting colonies of birds, thus reducing disturbance (Quinn et al., 2020). Another study reports high compliance rates with beach closures, reducing egg-crushing rates within the protected areas (Weston et al., 2012). Whilst the measures suggested at Fairhaven saltmarsh are set to be implemented during the non-breeding season, it is hoped that they will reduce disturbance in a similar fashion. Furthermore, a Natural England report conducted by Liley and Sutherland (2007) recommends the implementation of measures including enhanced signage and access restrictions to mitigate disturbances and protect bird populations.

2.2.2 Site-specific surveys methodology

2.2.2.1 Monthly surveys commenced at Fairhaven saltmarsh in September 2023 and will be used to inform the monitoring of the proposed mitigation. These surveys followed a high tide (core) count methodology whereby the abundance of birds present at Fairhaven saltmarsh was recorded during the two hours either side of high tide every month in order to characterise the bird assemblage in the area around high water. In total 20 high tide counts have been completed to date. The data collected gives a detailed insight into the abundance, behaviour and variation of bird species during the high tide period at Fairhaven saltmarsh and is considered appropriate to characterise both monthly and seasonal fluctuations. Details of the survey findings can be found in Section 4.

3 Spatial and of temporal usage of passage features

3.1 Landfall

3.1.1.1 Both the WeBS data and the site-specific surveys conducted at the landfall identified the presence of four passage features: ringed plover, sanderling, dunlin (Ramsar feature only) and redshank.

3.1.2 WeBS data

3.1.2.1 Data were provided by WeBS, a Partnership jointly funded by the British Trust for Ornithology, Royal Society for the Protection of Birds and Joint Nature Conservation Committee, in association with The Wildfowl and Wetlands Trust, with fieldwork conducted by volunteers.

3.1.2.2 The St Anne's Beach WeBS sector includes the landfall. This count sector extends from Squire's Gate in the north to St Anne's Pier in the south. Due to the difference in scale, WeBS data cannot be directly compared with the site-specific surveys however they can be used to indicate the importance and usage patterns of the general area for bird

species, particularly those Ribble and Alt Estuaries SPA/Ramsar site qualifying passage wader species previously identified.

3.1.2.3 Table 5 presents five-year average monthly counts for the passage period of 2017 to 2022 from the WeBS data at Lytham St Annes. The records indicate sporadic use of the sector by ringed plover, dunlin and redshank however sanderling are more regularly recorded in the area. For all four species the greatest numbers are recorded in the autumn passage period (September). For sanderling however, high counts are frequent outside of the summer months.

Table 5: Five-year average monthly counts between 2017 and 2022 (the peak five-year average monthly count is highlighted in yellow) at St Anne's Beach WeBS sector.

Species	April	May	June	July	August	September	October
Ringed Plover	3	N/C	0	0	2	48	3
Dunlin	8	N/C	0	0	0	61	15
Sanderling	715	N/C	0	193	550	2,385	762
Redshank	0	N/C	1	0	0	11	1

N/C – no count occurred in these months.

Table 6: Five-year spring passage peak counts and the month in which they occurred (the highest spring passage peak count is highlighted in yellow) at St Anne's Beach WeBS sector.

Species	2017/18	2018/19	2019/20	2020/21	2021/22
Ringed plover	3 (Apr)	N/C	N/C	N/C	2 (Apr)
Dunlin	15 (Apr)	N/C	N/C	N/C	0
Sanderling	765 (Apr)	N/C	N/C	N/C	665 (Apr)
Redshank	0	N/C	N/C	N/C	0

N/C – no count occurred in these months.

Table 7: Five-year autumn passage peak counts and the month in which they occurred (the highest autumn passage peak count is highlighted in yellow) at St Anne's Beach WeBS sector.

Species	2017/18	2018/19	2019/20	2020/21	2021/22
Ringed plover	0	0	N/C	N/C	48 (Sep)
Dunlin	0	0	N/C	N/C	61 (Sep)
Sanderling	386 (Jul)	0	N/C	N/C	2,385 (Sep)
Redshank	0	0	N/C	N/C	11 (Sep)

N/C – no count occurred in these months.

3.1.3 Site-specific surveys at the landfill

3.1.3.1 The monthly peak counts are shown in Table 8. April appears to be the key passage month for three of the four wader features recorded with peak counts of dunlin, sanderling and redshank occurring in April 2022. The exception is ringed plover which had a peak in August 2023. Sanderling were present in good numbers during multiple months.

Table 8: The peak monthly survey counts for the landfill

Species	2021		2022							2023				
	Sep	Oct	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr	May	Jun	Jul	Aug
Ringed Plover	9	14	0	0	0	7	0	33	0	2	0	0	4	93
Dunlin	0	7	1,031	7	0	3	0	12	20	120	0	0	0	19
Sanderling	21	152	2,134	115	0	220	5	800	220	450	35	0	9	121
Redshank	0	8	13	0	0	0	0	0	10	0	0	0	0	0

N/C – no count occurred in these months.

3.1.4 Frequency of occurrence

3.1.4.1 **Figure 4** shows the frequency of occurrence during the passage period. Sanderling were recorded regularly between April – October. However, dunlin and ringed plover were recorded in more months than their frequency by survey count data suggests. This is likely due to them being more likely to be present only during certain periods of the tidal cycle and therefore only recorded during a small number of counts within a survey visit rather than during every count within a survey visit.

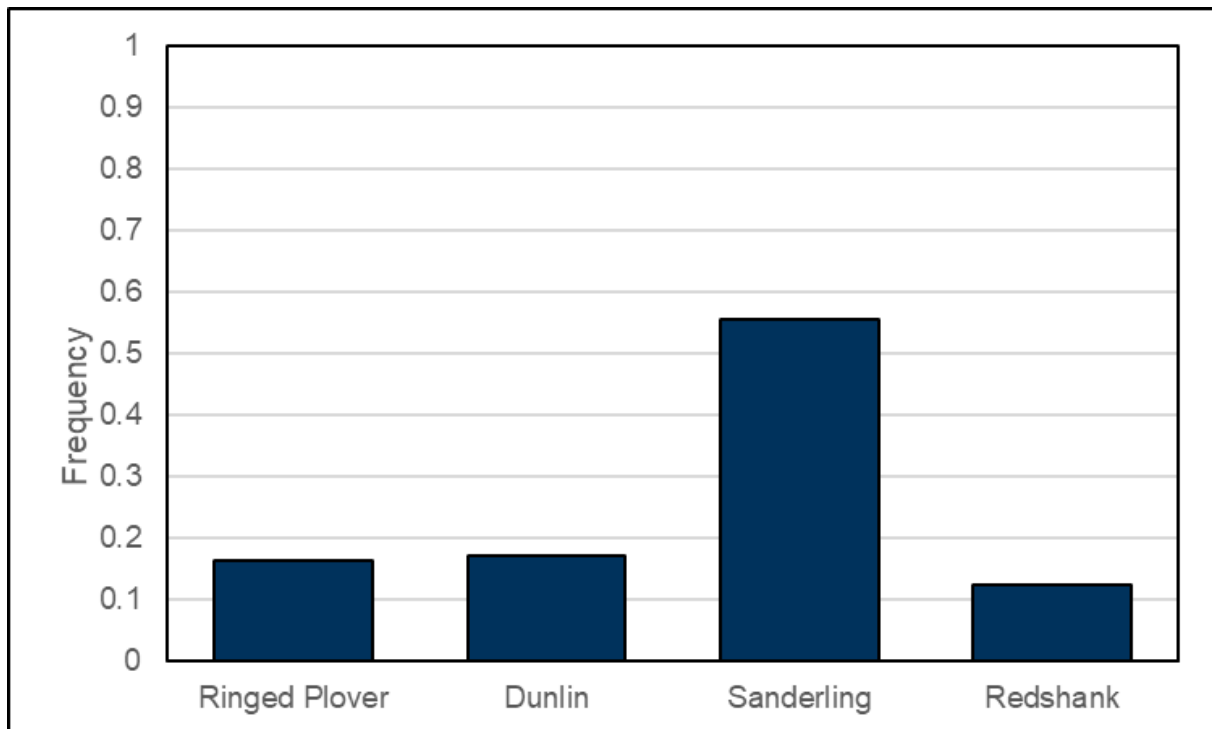


Figure 4: The frequency of occurrence by counts during the passage period at the landfall.

3.1.5 Importance of the landfall (in comparison to the SPA population)

3.1.5.1 Using both the peak counts, and the average number of birds, Table 9 shows the relative importance of the landfall for the features present.

- Both the peak count and mean count for redshank equate to less than 1% of the citation counts and current SPA estimate. Due to the low number of birds present it is likely that the landfall is of low importance for redshank.
- Although the ringed plover and dunlin peaks are over 1% of the SPA population, the mean monthly peak of birds over the passage period is below 1% and these birds were not frequently recorded, therefore the landfall is of occasional importance to these features.
- The landfall is regularly used by sanderling in high numbers. The landfall area is therefore of high importance to this feature.

Table 9: The relative importance of the landfall to passage and breeding features

Species	Peak count	Mean monthly passage count	Citation count	WeBS count	Peak as a % of citation	Peak as a % of WeBS count	Mean as a % of citation	Mean as a % of WeBS count
Ringed plover	93	11.6	1,657	4,334	5.6	2.1	0.7	0.3
Dunlin	1,031	87.1	38,196	57,757	2.7	1.8	0.2	0.2
Sanderling	2,134	305.9	6,535	8,016	32.7	26.6	4.7	3.8
Redshank	13	2.2	3,247	2,470	0.4	0.5	0.1	0.1

3.1.6 Sensitivity to disturbance

- 3.1.6.1 Table 10 shows the sensitivity of the features recorded during the site-specific surveys:
- Sanderling are the feature that have the lowest sensitivity to disturbances (Cutts et al., 2013). This tolerance to disturbance may explain why these features were regularly recorded at the landfall, which is frequented by the public.
 - Both redshank and dunlin are considered to have medium sensitivity to disturbance as defined by Goodship and Furness (2022).
 - Ringed plover are the feature that has the highest sensitivity to disturbance, however, there is the possibility that redshank and dunlin could also be disturbed up to 300 m from source (Goodship and Furness, 2022).
- 3.1.6.2 The most frequent and most abundant species at the landfall are generally those that are most tolerant of disturbance. Those that are less tolerant of disturbance were recorded less frequently and in lower numbers (relative to the SPA populations).
- 3.1.6.3 Table 10 also highlights the amount of the SPA that will be lost to species at any one time through disturbance caused by construction at the landfall. These figures show that there will be plenty of available habitats throughout the SPA, and for disturbance tolerant species such as sanderling, even large parts of the landfall will still be available during construction.

Table 10: The sensitivity of the passage and breeding features and how that relates to the assumed foraging ranges or the proportion of the SPA affected. The are subject to potential disturbance is based upon the area of works at any one time, plus the appropriate disturbance buffer

Species	Sensitivity to disturbance*	Disturbance distance* (metres)	Area subject to potential disturbance (m2)	Area of the SPA (m2)	% of SPA/range impacted
Ringed plover	High	100-300	444,698 – 1,352,160	124,123,100	0.36 – 1.09
Dunlin	Medium	150-300	648,367 – 1,352,160	124,123,100	0.52 – 1.09
Sanderling	Low	50	256,493	124,123,100	0.21
Redshank	Medium	200-300	867,501 – 1,352,160	124,123,100	0.70 – 1.09

*Taken from Goodship and Furness (2022) where data were available. Sanderling taken from Cutts et al (2013)

3.1.7 Bird behaviour

- During the site-specific surveys, behaviour was recorded as:
 - Foraging – Actively seeking food
 - Non-foraging – e.g., loafing, preening, resting, etc
 - Roosting – Displaying roosting characteristics, e.g., on one leg, gathered in group, head tucked beneath wing, etc.
- The proportion of birds counted displaying certain behaviours differed by species with both ringed plover and dunlin spending a significant amount of their time spent at the landfall either roosting or displaying non-foraging behaviours, whilst sanderling and redshank spent a greater proportion of time foraging.

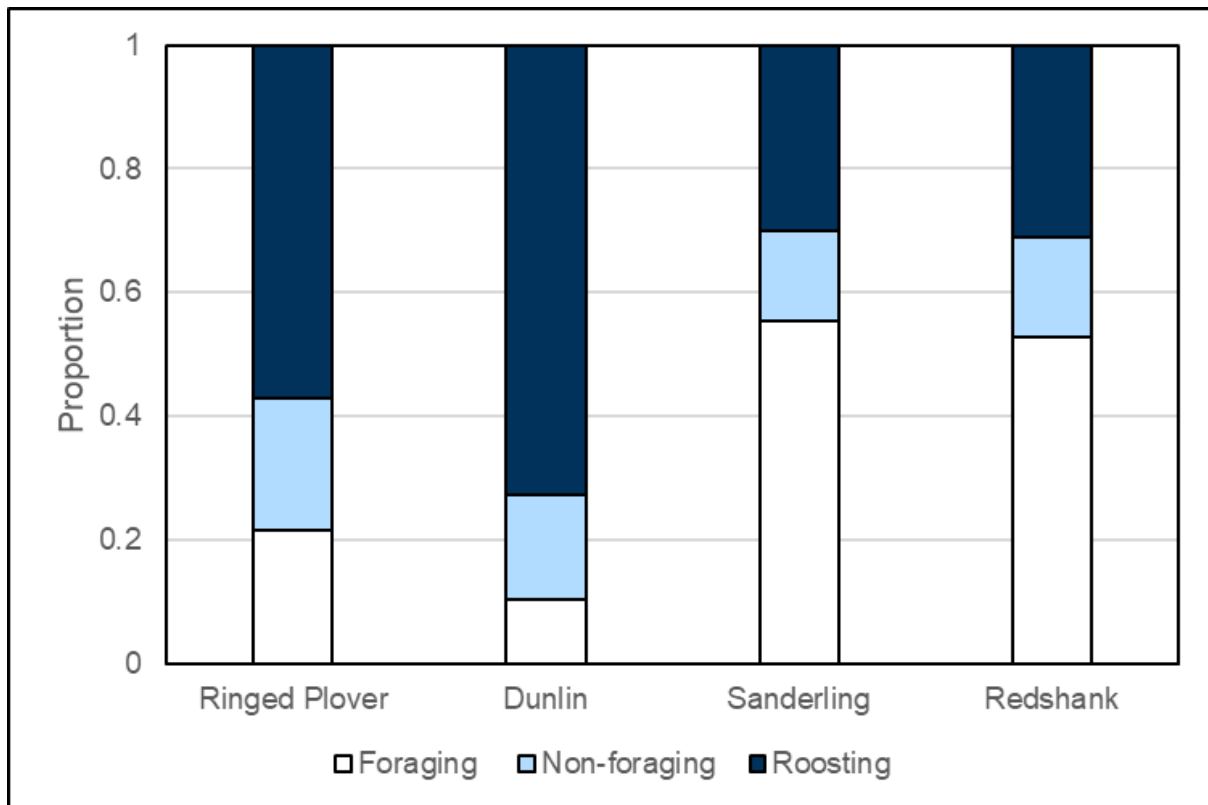


Figure 5: The proportion of recorded behaviours made over all counts in the passage period.

3.1.8 Passage feature species accounts

Ringed plover

- Ringed plover were generally recorded infrequently and in low numbers, exceptions to this were during September 2022 and August 2023 (Figure 6).
- Ringed plover were only recorded once and in low numbers during the spring passage period with the landfall being of higher importance for autumn passage birds.
- Ringed plover were present in the highest numbers during the flood and ebb periods where they roosted on the intertidal in the central section of the landfall between MHWS and MLWS (Figure 7).
- Ringed plover were not recorded as using the area as a regular high tide roost or foraging area. However, the high peak count of ringed plover was largely composed of roosting birds (Figure 8).
- Ringed plover mean distribution during the passage period can be seen in Figure 9, an area of beach at the south of the landfall was favoured in both years.

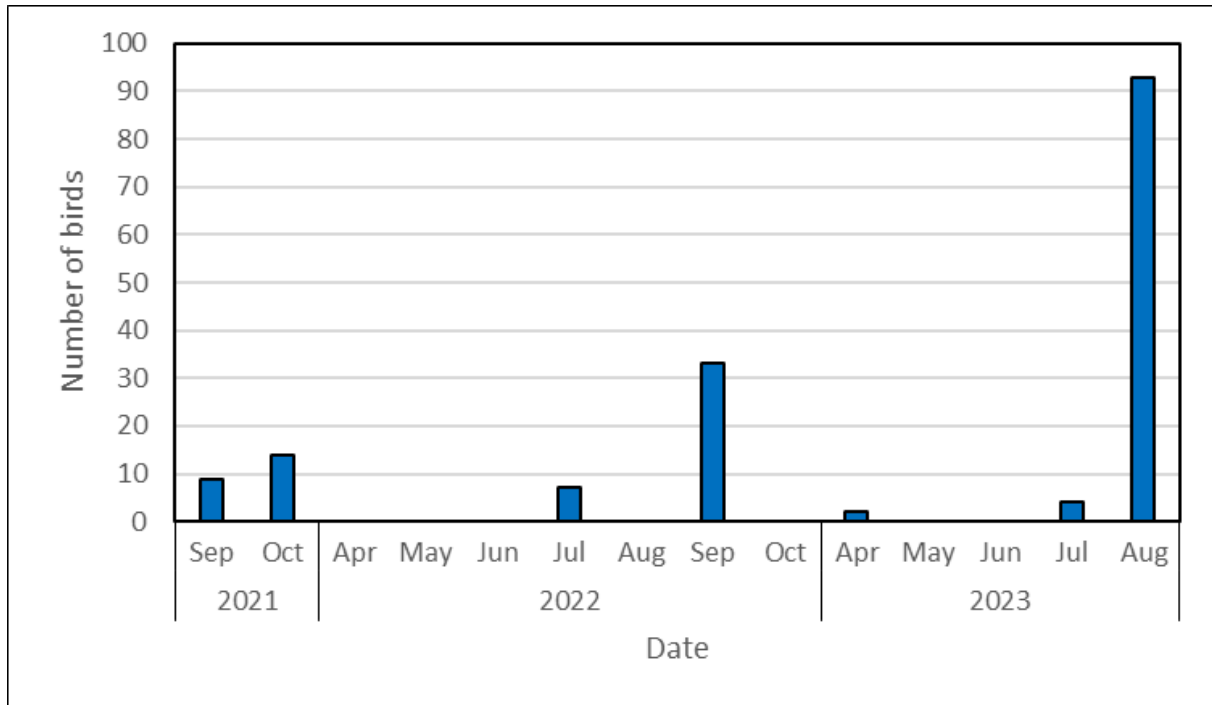


Figure 6: Monthly peak counts for ringed plover

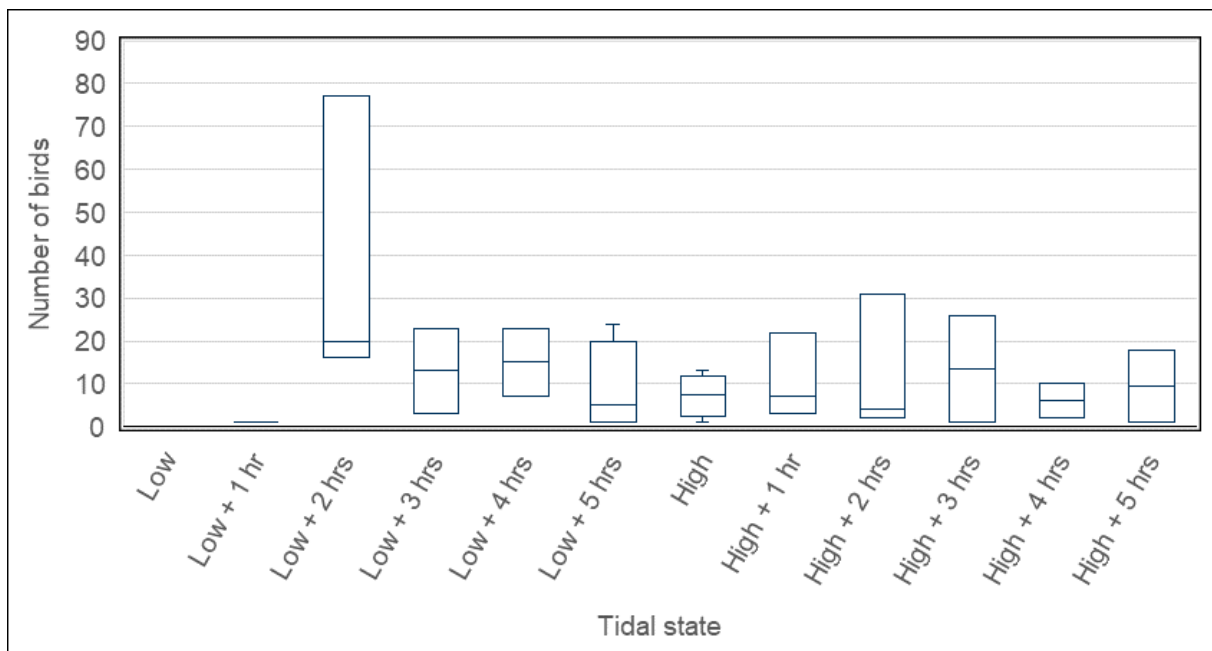


Figure 7: Tidal variation in passage ringed plover abundance

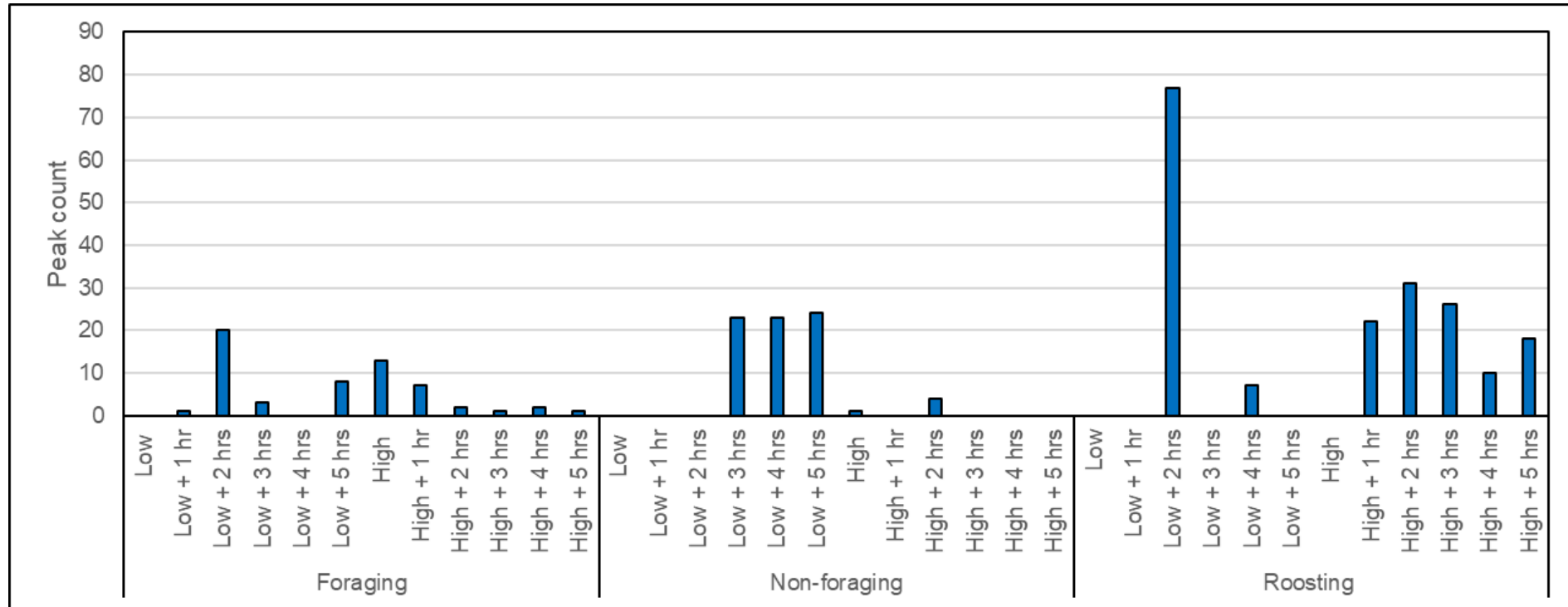


Figure 8: Passage ringed plover behaviours expressed as peak counts through the tidal cycle



Figure 9: Distribution of ringed plover during the passage period (not to scale)

Dunlin

- 3.1.8.1 Dunlin were infrequently recorded. However, the two annual peak counts were both in April (Figure 10), it therefore appears that the landfall may be of greater importance during spring passage than autumn, however there is much variability in numbers even within this limited period.
- 3.1.8.2 The peak numbers of dunlin were recorded within the two hours before high tide (Figure 11), indicating that this consisted of groups of birds looking to roost, this is confirmed by the recorded behaviour (Figure 12). The low numbers recorded during high tide reflect that this is a very busy beach and that birds squeezed into an ever-smaller strip of dry land are more likely to encounter disturbance from the numerous people and/or dogs.
- 3.1.8.3 As the landfall was not regularly used by dunlin, or roosting birds, it is probable that disturbance at the regular high tide roost (probably the closest high tide roost at Fairhaven saltmarsh) displaced birds and forced them to move into this sub-optimal roosting area. This could also provide an explanation as to why other species were occasionally found roosting in high numbers (see sanderling).
- 3.1.8.4 The distribution of dunlin (Figure 13) is based upon the two annual peak flocks, one of which was to the south of the landfall and one of which was at the centre, both were located at the mid to upper beach. It is notable that the peak numbers of birds seen to the south of the landfall would be beyond the 300 m from which dunlin could be disturbed.

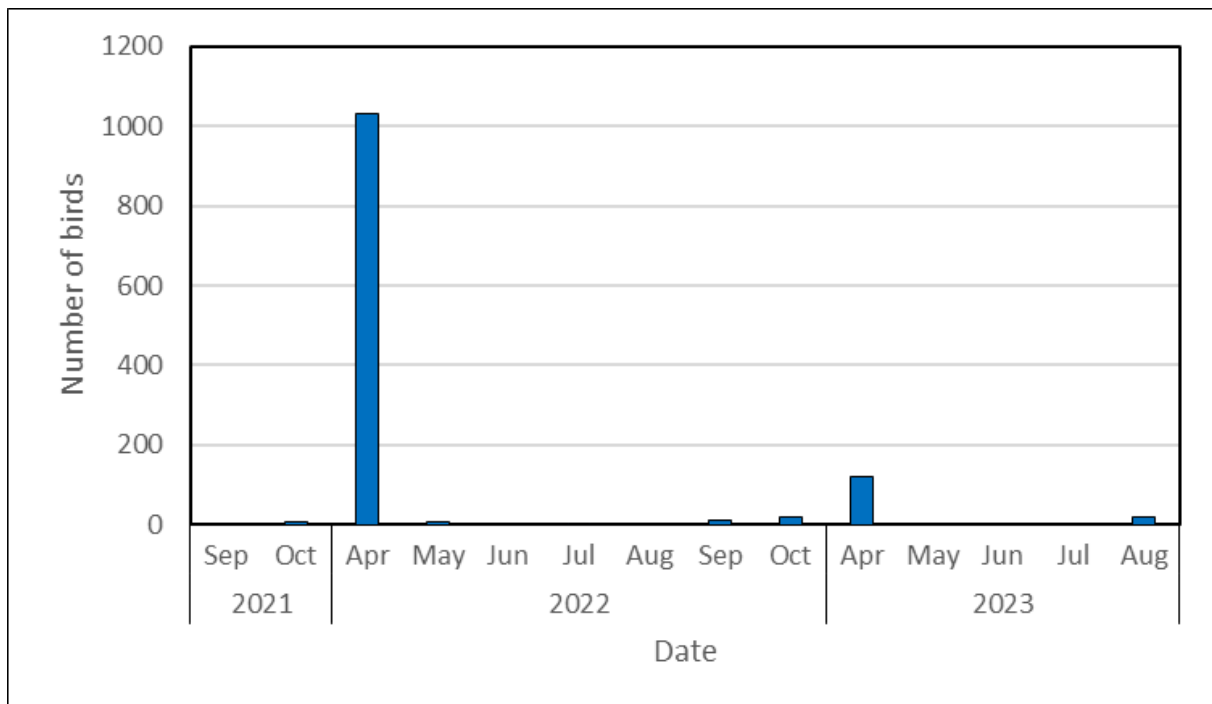


Figure 10: Monthly peak counts for dunlin

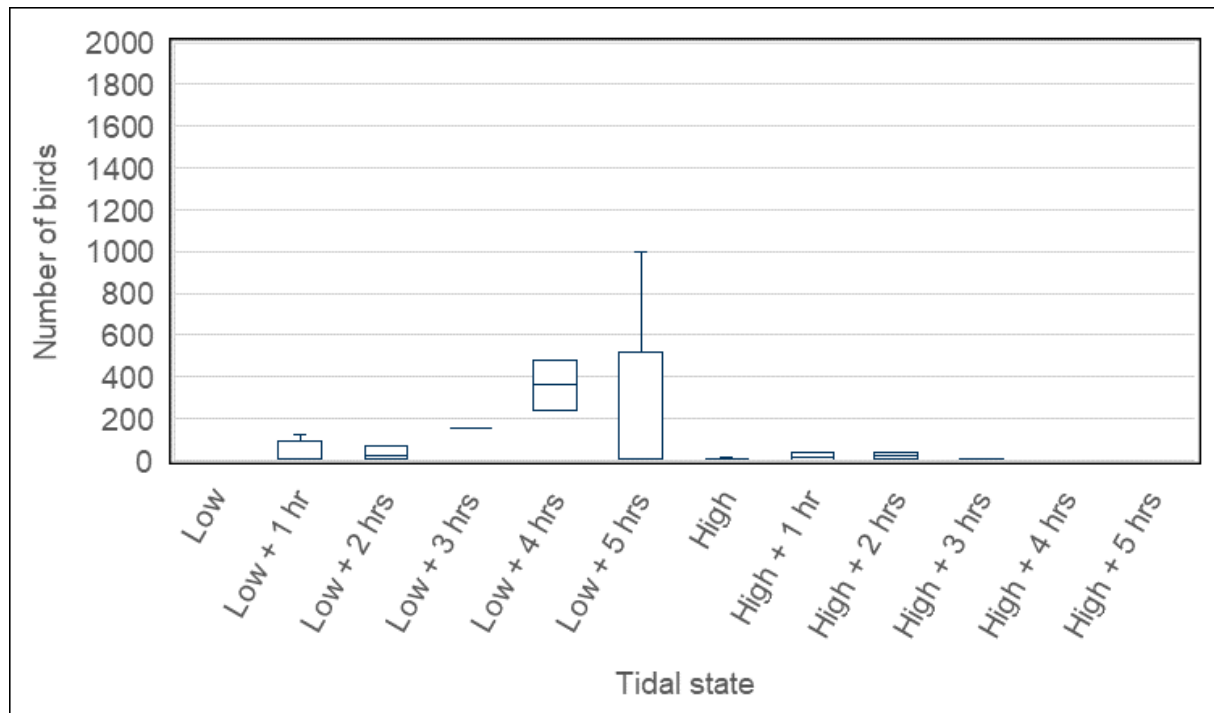


Figure 11: Tidal variation in passage dunlin abundance

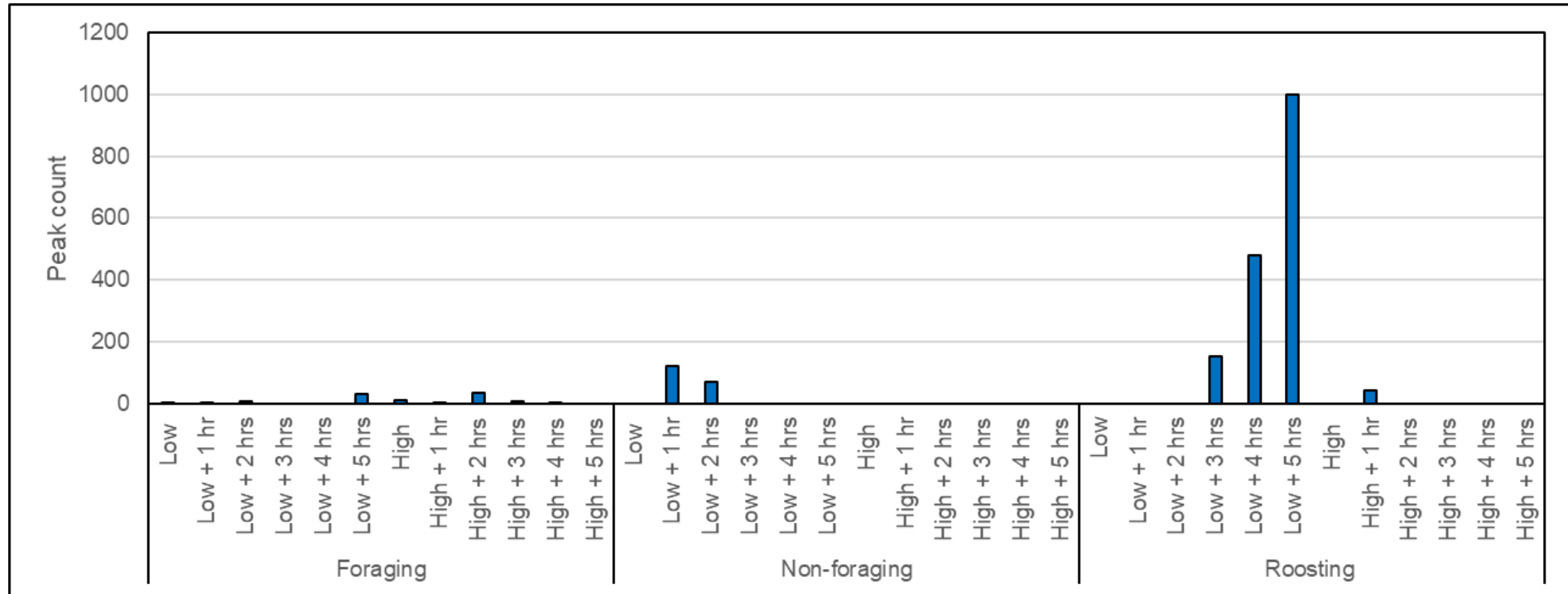


Figure 12: Passage dunlin behaviours expressed as peak counts through the tidal cycle

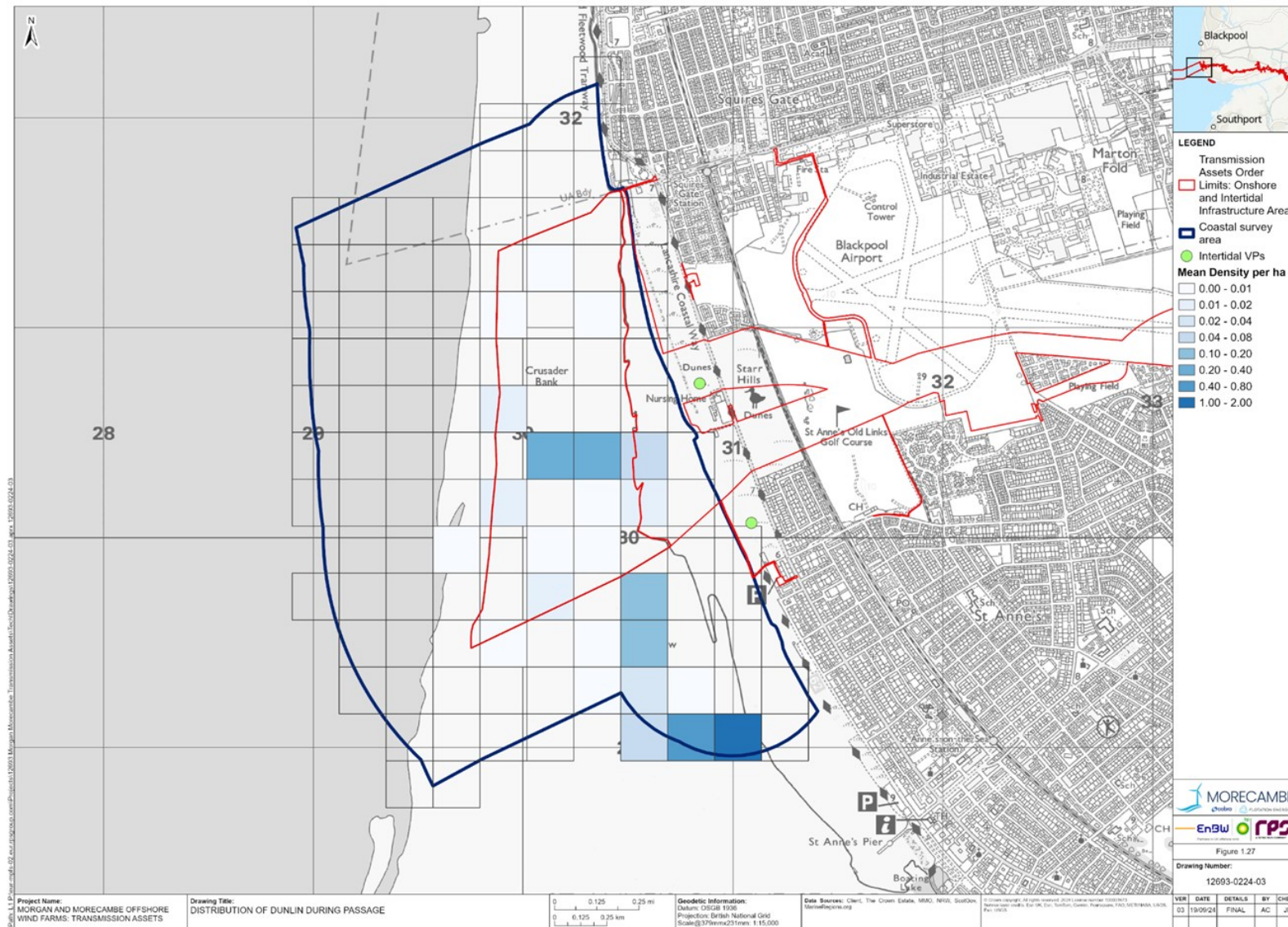


Figure 13: Distribution of dunlin during the passage period (not to scale)

Sanderling

- Sanderling were frequently recorded (approx. 50% of all counts) in high numbers relative to the SPA population (Figure 14), however many of these high peaks are outliers in the data (Figure 15) and more generally the landfall is used on a regular basis by less than 200 sanderling birds (Figure 16).
- There was inter-annual and inter-monthly variation with sanderling using the area during both spring and autumn passage.
- The tidal pattern of sanderling abundance showed that sanderling were present throughout the tidal cycle, however there were two peaks, one at low water and another around high water. The highest outlier peaks were all recorded around high water indicating that on occasion larger numbers of sanderling may use the landfall as a makeshift roost, this has been confirmed by the behaviour data (Figure 17).
- This occasional use of the landfall, with the high peak in April, coincided with the same survey and count as the dunlin (both on 21/04/2022 at Low + 5 hrs). These were a mixed flock of roosting birds and due to the lack of a regularly roosting birds at the landfall, it is likely that these birds were disturbed elsewhere (possibly at the Fairhaven high tide roost) and subsequently forced to move into this sub-optimal roosting area.
- Generally sanderling are mobile, and this is reflected in the distribution which shows sanderling using most of the intertidal area (Figure 18). The peak densities are likely to have been biased by the occasional roosts of higher numbers of birds.
- As sanderling are tolerant of disturbance (50 m), and as cables will be installed one at a time, there will still be plenty of available habitats for them to use for foraging and/or roosting at the landfall whilst construction takes place. Similarly to dunlin, the peak numbers of birds seen to the south of the landfall would be beyond the 50 m from which sanderling could be disturbed.

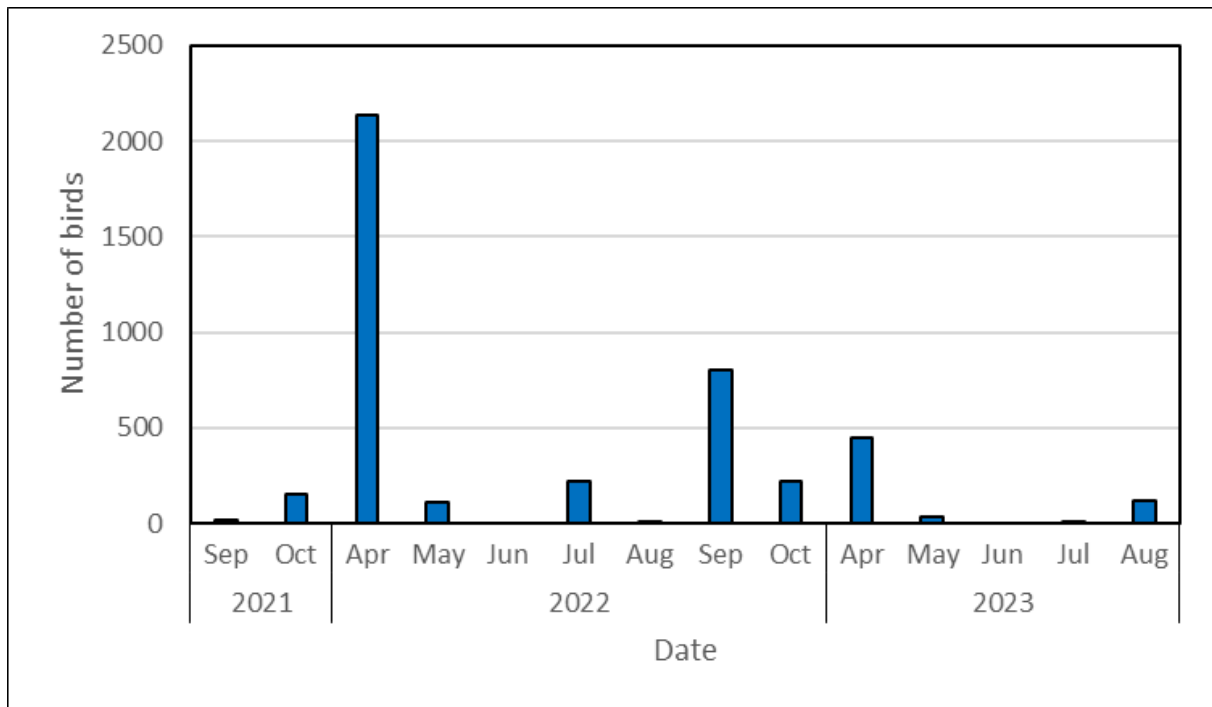


Figure 14: Monthly peak counts for sanderling

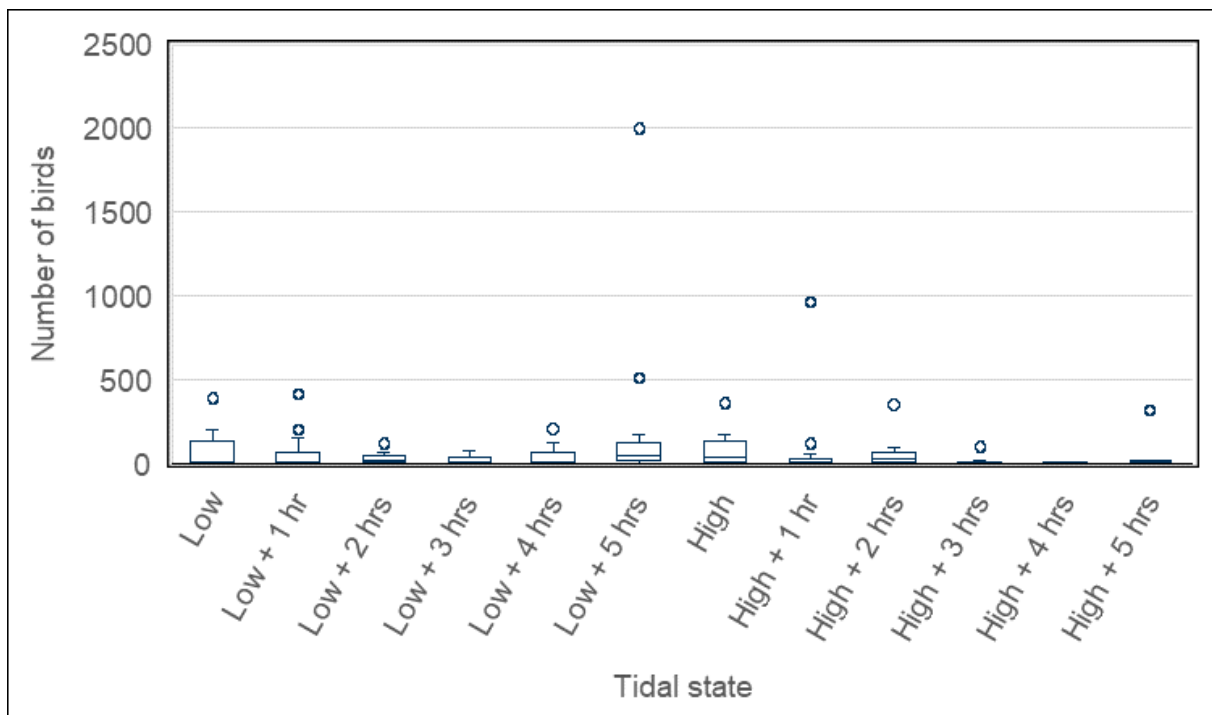


Figure 15: Tidal variation in passage sanderling abundance with the outlier data included

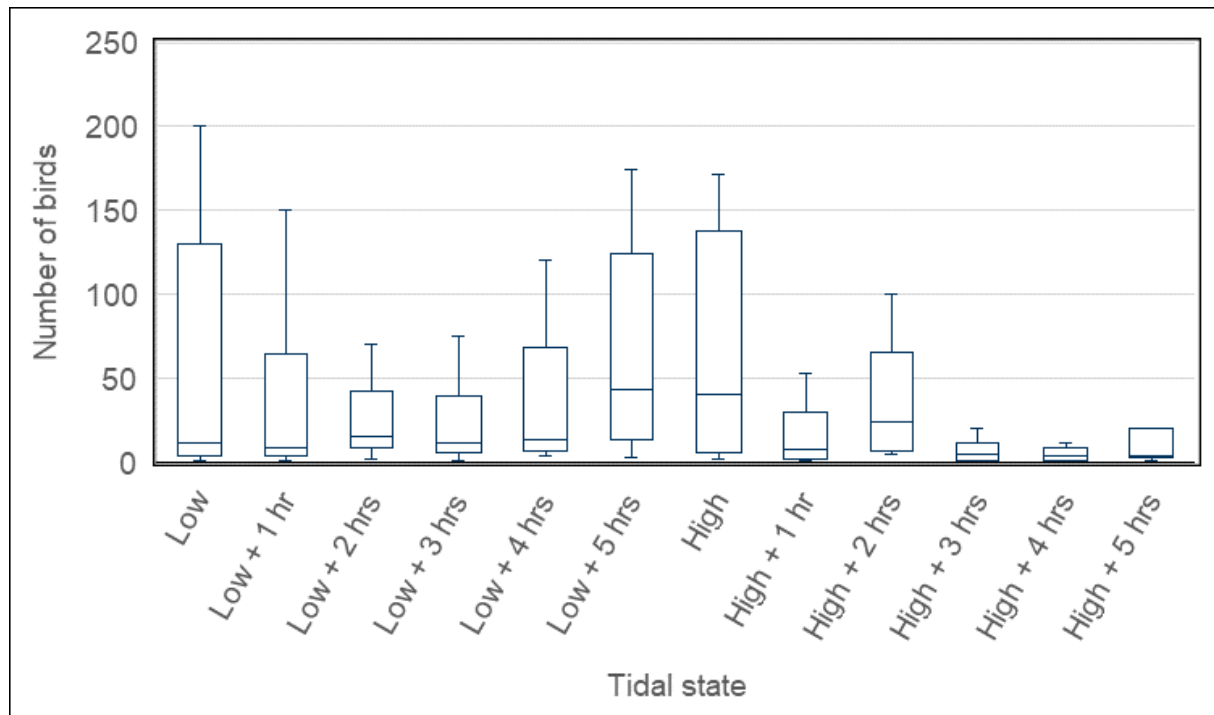


Figure 16: Tidal variation in passage sanderling abundance with the outlier data excluded

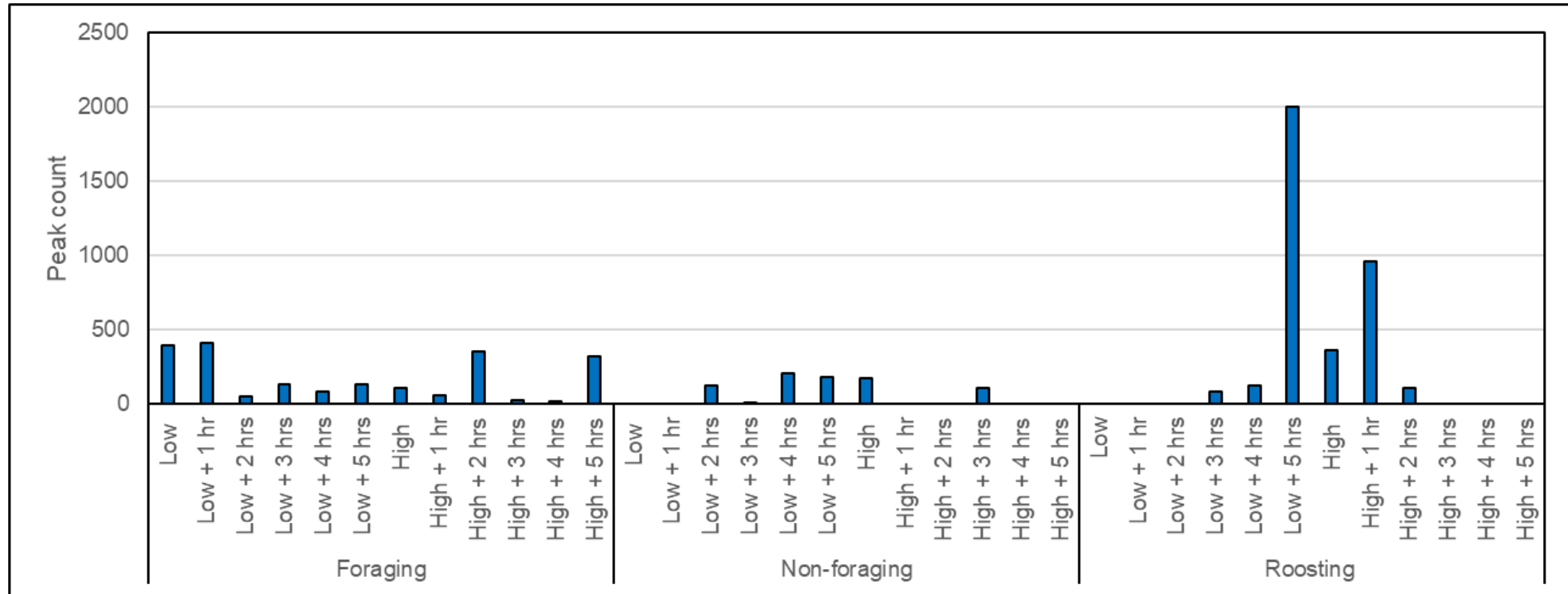


Figure 17: Passage sanderling behaviours expressed as peak counts through the tidal cycle



Figure 18: Distribution of sanderling during the passage period

Redshank

- Redshank were infrequently recorded and were recorded in numbers below 1% of the SPA citation and current WeBS estimate (Figure 19).
- The highest peaks and highest densities are located at the north of the landfall (Figure 22).
- It is here within the Blackpool flood defences that a high tide roost of redshank and turnstone exists throughout the winter. Redshank were also found foraging in the pools that form near the flood defences.
- Redshank use this northern tip for both roosting and foraging and this is reflected with the variation in abundance through the tidal cycle with peaks around both low and high tides (see Figure 20 and Figure 21).
- This redshank roost and foraging area is located just below Squires Gate tram terminal and is a very popular area for people, dogs, and small boat launches. The number of disturbance figures, events tends to increase during the warmer months with greater numbers of people present. Therefore, it is unsurprising that this winter roost is not utilised between May and September inclusive.

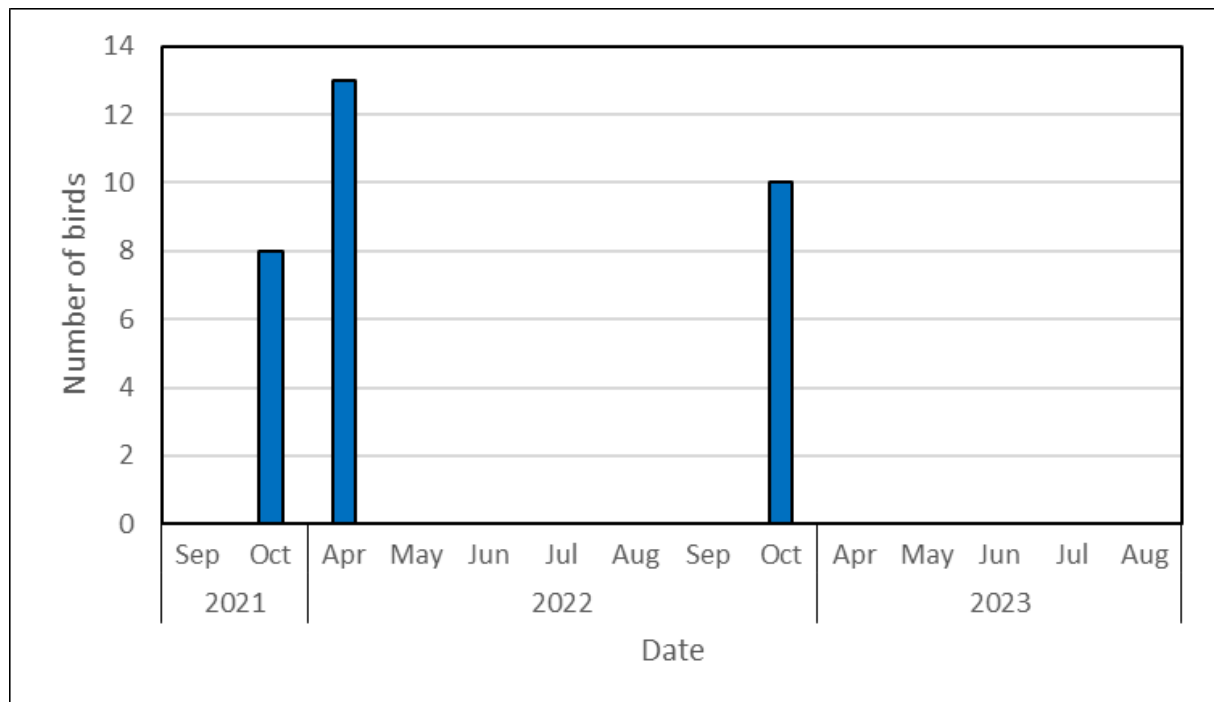


Figure 19: Monthly peak counts for redshank

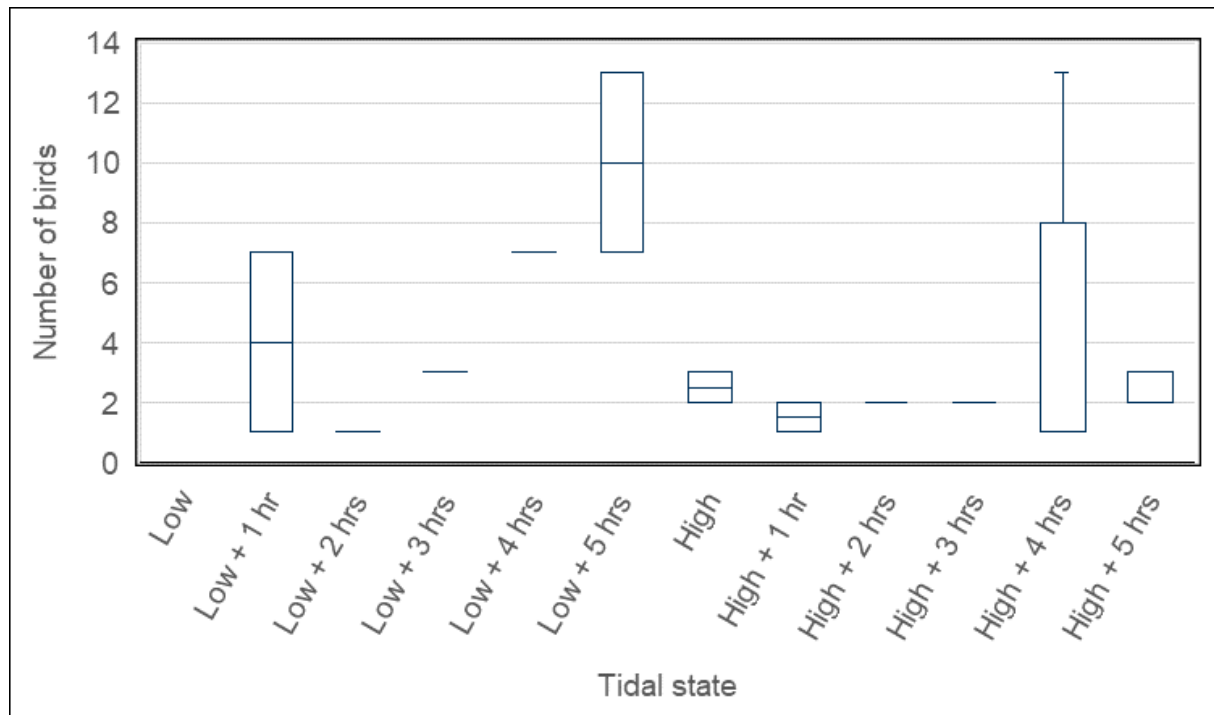


Figure 20: Tidal variation in passage redshank abundance

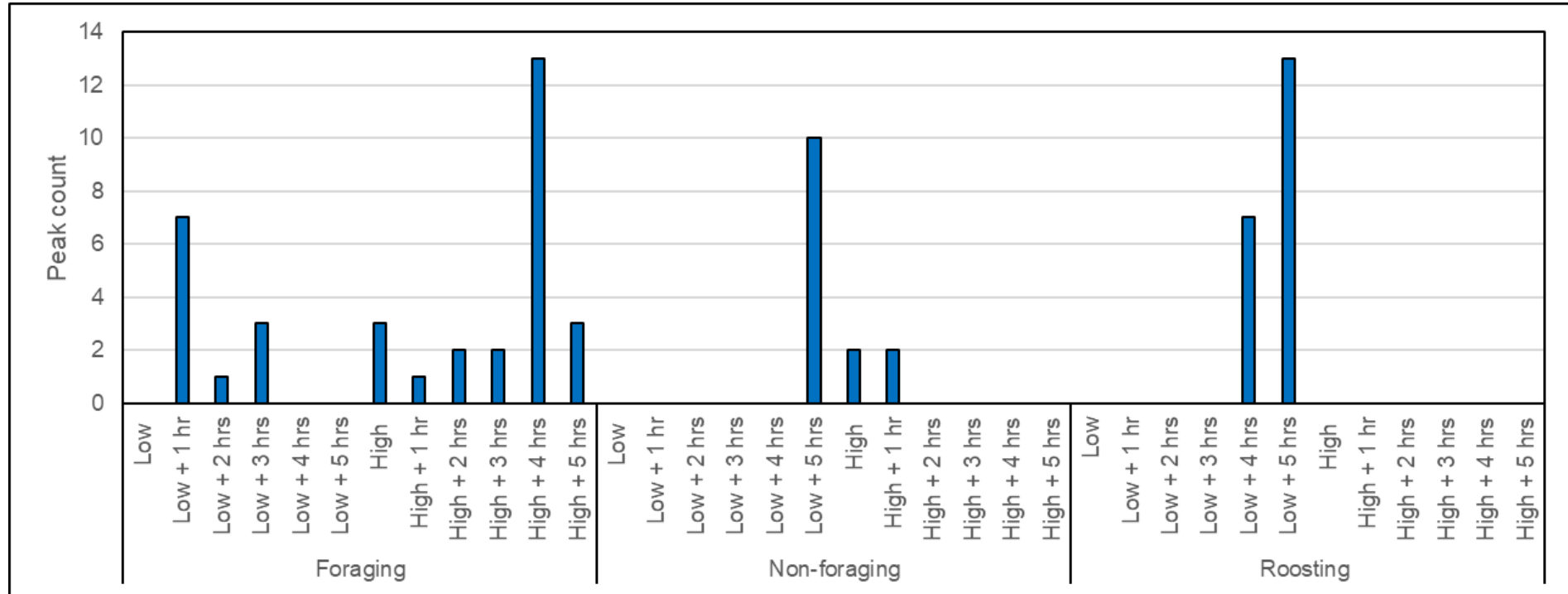


Figure 21: Passage redshank behaviours expressed as peak counts through the tidal cycle

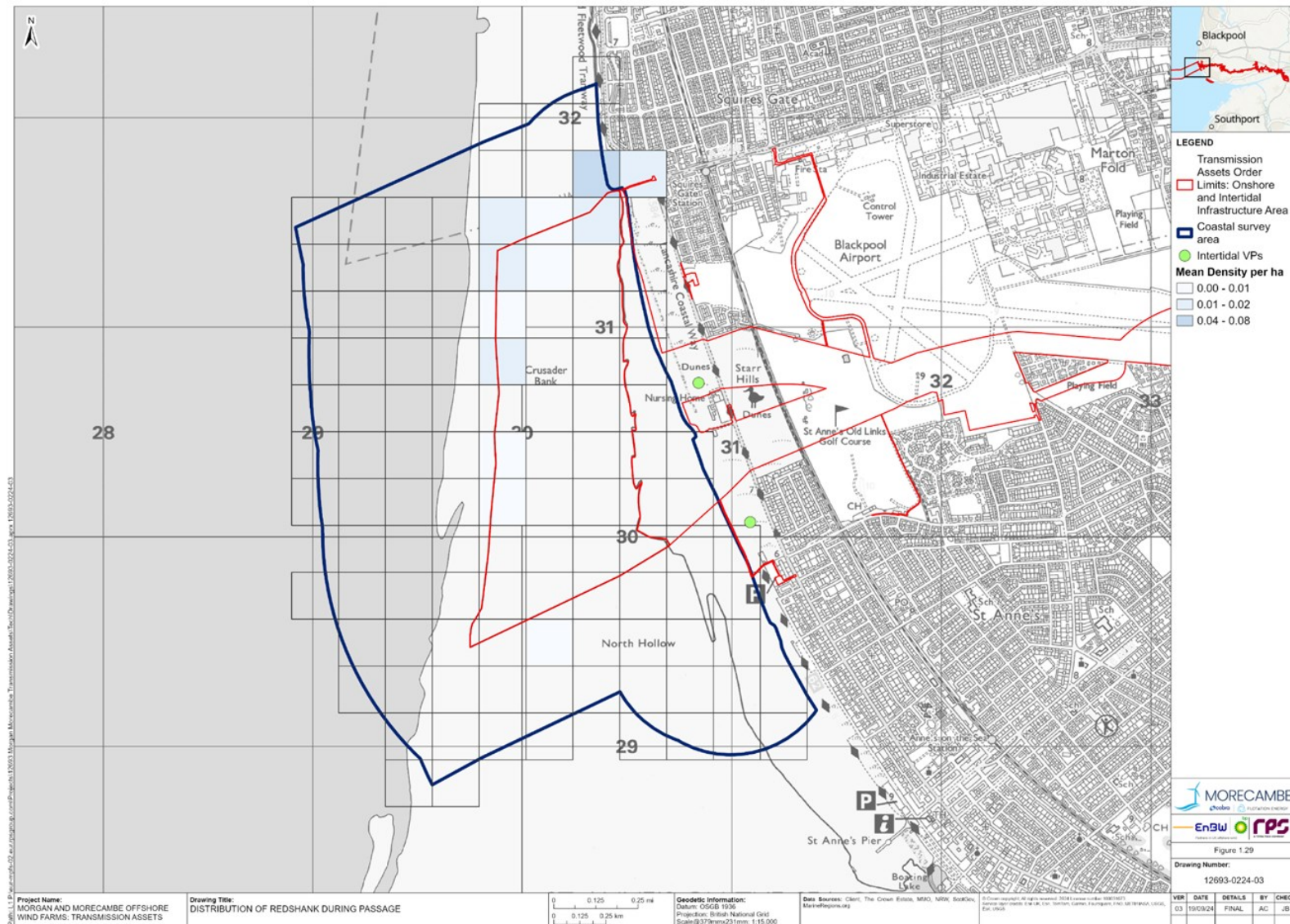


Figure 22: Distribution of redshank during the passage period (not to scale)

3.1.9 Sensitive passage period at the landfall

- 3.1.9.1 This has been refined according to the Applicants survey data but also takes into account other pressures at the landfall that reduce the value of this area for many species (e.g., background summer disturbance).
- 3.1.9.2 Both the Applicants survey data and the WeBS data show that April is the key spring passage month, with August through to October being busy months during the autumn passage period (see Table 11, and sections 3.1.2 and 4.1.2). However, the monthly disturbance data for the landfall (see Table 3) shows that background recreational disturbance during August is very high with the average number of potential disturbance sources recorded being significantly higher than in other months. Therefore, the Applicants consider the key sensitive passage months at the landfall to consist of:
- **Spring passage – April**
 - **Autumn passage – September and October**
- 3.1.9.3 Do Natural England agree that the sensitive passage months at the landfall can be defined as September, October and April?
- 3.1.9.4 All questions raised as part of this technical note for agreement with Natural England are summarised in Section 8.

4 Fairhaven saltmarsh

- 4.1.1.1 This section aims to link the high tide roost at Fairhaven saltmarsh with the birds at the landfall and to provide an overview of the mitigation, its chances of success, and why it should be considered as comparable. The Applicants would like to note that the landfall species distribution maps combined with the disturbance distances of the passage features would mean that during construction there will still be areas within the landfall that will be available to roosting and foraging birds, therefore these proposed mitigations at Fairhaven saltmarsh are in addition to this.

4.1.2 WeBS data

- 4.1.2.1 The Fairhaven Lake and Lytham Beach WeBS sector includes the Fairhaven saltmarsh. However, this sector extends over a much larger area than the site-specific survey area and so resulting data cannot be directly compared, however they can be used to indicate the importance and usage patterns of the general area for bird species, in particular those Ribble and Alt Estuaries SPA/Ramsar site qualifying passage wader species previously identified within section 3.1.
- 4.1.2.2 Table 11 presents five-year average monthly counts for the passage period of 2017 to 2022. The records indicate consistent use of the sector across the year with the greatest numbers of ringed plover and dunlin occurring during spring passage and the greatest numbers of sanderling and redshank occurring in the early autumn passage period.

For all four species, large counts regularly occur during both the spring and autumn passage periods.

4.1.2.3 Displayed within

4.1.2.4 Table 12 and

4.1.2.5 Table 13 are the five-year peak autumn and spring passage counts respectively. The maximum autumn passage peak counts for each species occurred during early passage in August. During the spring passage the maximum peak counts for ringed plover and dunlin occurred later in the period in May, while for sanderling and redshank the maximum peak counts occurred in April.

Table 11: Five-year average monthly counts between 2017 and 2022 (the peak five-year average monthly count is highlighted in yellow) at Fairhaven Lake and Lytham Beach WeBS sectors (combined).

Species	April	May	June	July	August	September	October
Ringed plover	666	1,553	40	53	785	51	9
Dunlin	2,562	5,896	17	2,310	3,752	173	1,217
Sanderling	713	410	0	0	1,021	23	145
Redshank	314	14	13	167	779	588	518

Table 12: Five-year autumn passage peak counts and the month in which they occurred (the highest autumn passage peak count is highlighted in yellow) at Fairhaven Lake and Lytham Beach WeBS sectors (combined).

Species	2017/18	2018/19	2019/20	2020/21	2021/22
Ringed plover	78 (Aug)	184 (Aug)	120 (Aug)	214 (Aug)	2,051 (Aug)
Dunlin	3,700 (Jul)	1,887 (Aug)	4,370 (Aug)	2,945 (Aug)	5,000 (Aug)
Sanderling	85 (Aug)	72 (Aug)	168 (Oct)	280 (Aug)	2,990 (Aug)
Redshank	564 (Sep)	1,016 (Oct)	1,158 (Aug)	872 (Aug)	1,069 (Sep)

Table 13: Five-year spring passage peak counts and the month in which they occurred (the highest spring passage peak count is highlighted in yellow) at Fairhaven Lake and Lytham Beach WeBS sectors (combined).

Species	2017/18	2018/19	2019/20	2020/21	2021/22
Ringed plover	748 (May)	624 (Apr)	N/C	2,820 (May)	600 (May)
Dunlin	1,689 (May)	1,680 (Apr)	N/C	11,282 (May)	3,055 (May)
Sanderling	560 (Apr)	900 (Apr)	N/C	500 (May)	680 (Apr)

Species	2017/18	2018/19	2019/20	2020/21	2021/22
Redshank	314 (Apr)	102 (Apr)	N/C	278 (Apr)	50 (Apr)

N/C – no count occurred in this year.

4.1.3 Site-specific survey peak counts

4.1.3.1 The findings from the surveys at Fairhaven saltmarsh show that the same passage wader features that use Fairhaven saltmarsh are the same species found at the landfall. Due to the proximity of Fairhaven saltmarsh to the landfall (approximately 2.75 km), and as it is the closest high tide roost to the landfall, it is highly likely that it is even the same individual birds using both areas. Fairhaven saltmarsh (which occupies a smaller area than the WeBS count sector) regularly holds numbers of birds in excess of those that regularly use the landfall (Table 14).

4.1.3.2 Whilst most of these birds are using the area to roost, there is a proportion of birds that also use Fairhaven for foraging. Winter distributions and tidal abundances are not presented here due to the lack of impact pathways as a result of the Applicants commitment of avoiding any construction works on the intertidal and upper beach, at Lytham St Annes, during the wintering period (between November and March (inclusive)).

Table 14: Monthly peaks from the site-specific survey data

Species	2023		2024					
	Sep	Oct	May	Jun	Jul	Aug	Sep	Oct
Ringed Plover	41	22	309	0	0	65	0	0
Dunlin	295	1,538	1,190	12	1,050	125	1,585	1,240
Sanderling	582	2,000	1,100	0	0	0	57	78
Redshank	59	131	0	1	0	23	23	52

4.1.4 Frequency of occurrence

4.1.4.1 Figure 23 shows the frequency by count that features were recorded at during the passage period at Fairhaven saltmarsh. As indicated within Table 14, dunlin were the only species to be recorded in every month during surveys to date, while redshank and sanderling were recorded in most surveys. Ringed plover were recorded in 50% of surveys.

4.1.4.2 Winter distributions and tidal abundances are not presented here due to the lack of impact pathways as a result of the Applicants commitment of avoiding any construction works on the intertidal and upper beach, at Lytham St Annes, during the wintering period (between November and March (inclusive)).

4.1.4.3 However, as shown in Table 14, sanderling were not recorded during the summer months and records of redshank were low or the species was not present between May and July. Ringed plover were not recorded during June and July or during mid to late passage in 2024.

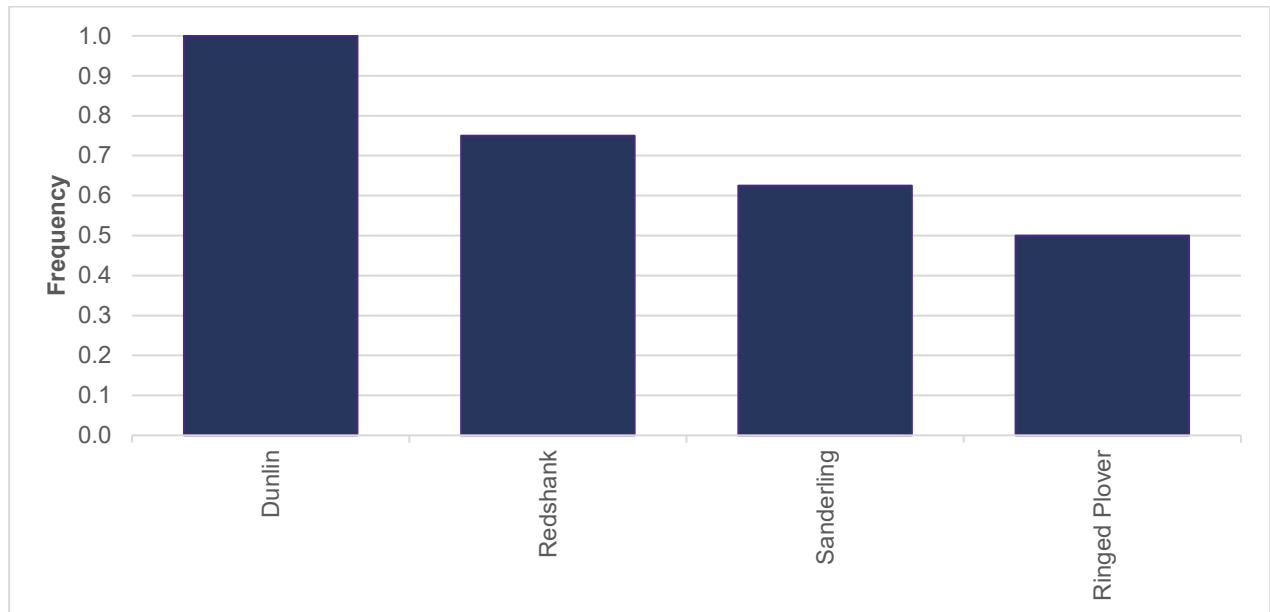


Figure 23: The frequency of recording during the passage period at Fairhaven saltmarsh

4.1.5 Importance of Fairhaven saltmarsh (in comparison to the SPA)

4.1.5.1 Using both the peak counts, and the average number of birds, Table 15 displays the relative importance of Fairhaven saltmarsh for the features present.

4.1.5.2 The peak count at Fairhaven saltmarsh for all four wader species is greater than 1% of both the citation counts and the current SPA estimate. However, for dunlin and redshank the mean number of individuals is less than 1% of both the citation counts and current SPA estimate. Despite this, the frequency of counts for both redshank and dunlin is high, indicating regular use of the area but in numbers that are not significant in relation to the citation population and current SPA population estimate. It is likely therefore that Fairhaven saltmarsh is of moderate to high importance to redshank and dunlin.

4.1.5.3 The mean count for both ringed plover and sanderling is greater than 1% of the citation population and for sanderling the mean is also greater than 1% of the most recent SPA population estimate. However, for ringed plover the mean is less than 1% of the most recent SPA estimate. The frequency with which ringed plover were recorded at Fairhaven saltmarsh is approximately 50%, while for sanderling it is slightly higher at approximately 60%. The indication is that Fairhaven saltmarsh is of high importance to sanderling during the passage period and of an occasional importance to ringed plover.

Table 15: The relative importance of Fairhaven saltmarsh to passage features

Species	Peak count	Mean monthly passage count	Citation count	WeBS count	Peak as a % of citation	Peak as a % of recent WeBS count	Mean as a % of citation	Mean as a % of WeBS
Ringed plover	309	38.6	1,657	4,334	18.6	7.1	2.3	0.9
Dunlin	1,585	198.1	38,196	57,757	4.1	2.7	0.5	0.3
Sanderling	2,000	250.0	6,535	8,016	30.6	25.0	3.8	3.1
Redshank	131	16.4	3,247	2,470	4.0	5.3	0.5	0.7

4.1.6 Sensitivity of the features present to disturbance

4.1.6.1 The sensitivity of SPA and Ramsar site features identified within Fairhaven saltmarsh is provided within section 3.1.6.

4.1.6.2 Fairhaven saltmarsh is a high tide roost. During foraging activity birds are generally more dispersed than at high-tide roosting. However, they may form small and scattered flocks when feeding, these groups are generally much smaller and more spaced than while roosting. Therefore, any disturbance event is more likely to impact a greater number of birds that are roosting in comparison to foraging. Due to the importance of Fairhaven saltmarsh to roosting sanderling, and to a lesser extent ringed plover and dunlin, any disturbance event within the area while birds are at roost is likely to have a larger impact in terms of number of birds affected.

4.1.7 Bird behaviour at Fairhaven saltmarsh

- As previously stated in section 3.1.7, bird behaviour during site-specific surveys was recorded as:
 - Foraging – Actively seeking food
 - Non-foraging – e.g., loafing, preening, resting, etc
 - Roosting – Displaying roosting characteristics, e.g., on one leg, gathered in group, head tucked beneath wing, etc.

4.1.7.1 The proportion of birds identified to be engaging in certain behaviours differed significantly by species at Fairhaven Saltmarsh. For ringed plover and sanderling, the majority of recorded behaviour was roosting, with a much smaller proportion of time spent foraging. For dunlin the proportion of time spent foraging was greater than for sanderling and ringed plover, however it was lower than the time spent roosting, and comparable to time spent engaged in other non-foraging behaviour. For redshank this pattern was reversed with a much greater proportion of the time spent foraging in comparison to roosting.

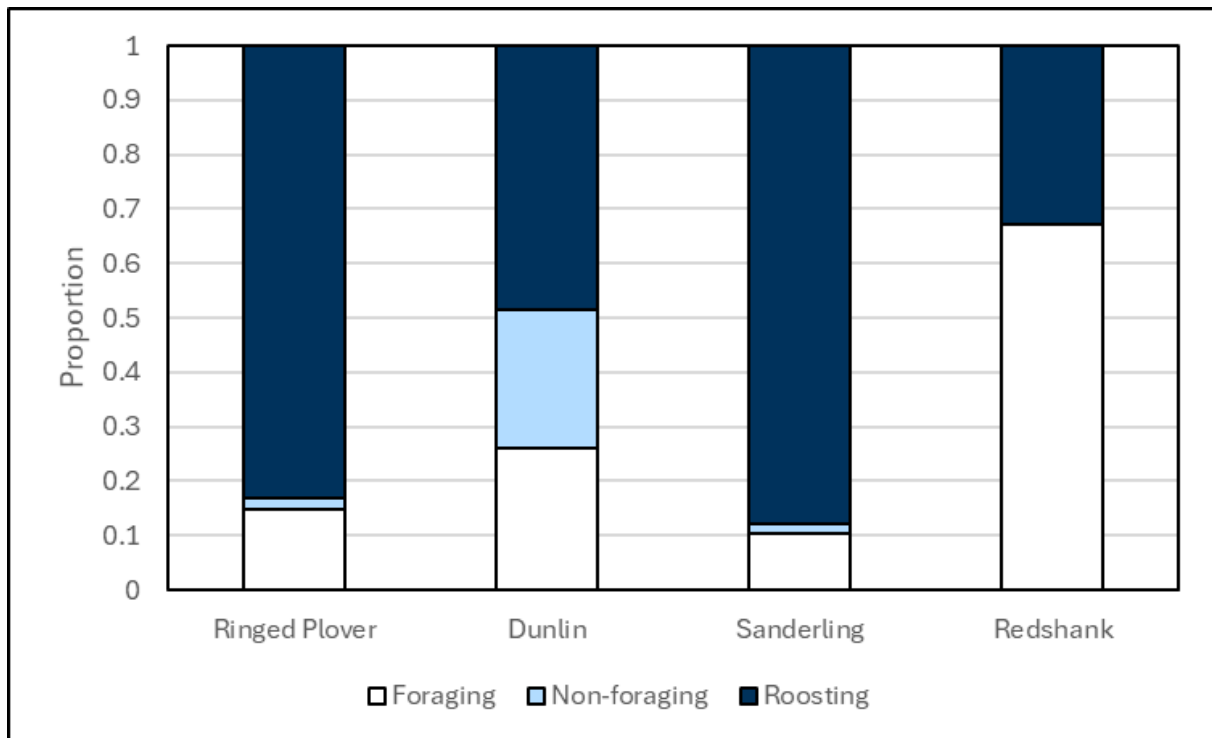


Figure 24: The proportion of recorded behaviours made over all counts in the passage period at Fairhaven saltmarsh

5 Suitability of proposed mitigation area at Fairhaven saltmarsh

5.1 Site usage comparison

5.1.1.1 As seen in Table 16, the passage waders are present in higher numbers at Fairhaven saltmarsh (or similar in the case of sanderling) to those found at the landfall. Additionally, the monthly means are also higher for all species of passage wader at Fairhaven in comparison to landfall. For two of the four wader species (dunlin and redshank, the monthly frequency is greater at Fairhaven and for ringed plover the monthly frequency is the same in both areas. Sanderling are the only species with a lower monthly frequency at Fairhaven Saltmarsh compared to landfall, however a higher mean at Fairhaven Saltmarsh for sanderling indicates that it is regularly used by higher numbers of birds than the landfall.

5.1.1.2 Passage wader use of Fairhaven Saltmarsh is of a larger magnitude and with less foraging but more regular roosting. As the birds that use Fairhaven are likely to be the same birds that use the landfall, and that the high peaks of sanderling and dunlin at the landfall may have been birds displaced from disturbance at Fairhaven saltmarsh, a reduction in disturbance pressures at this location would offset the additional energy costs caused by construction activities at the landfall.

Table 16: Comparison of Fairhaven saltmarsh with the landfall (the highest values for each statistic are highlighted in red)

Species	Fairhaven peak	Landfall peak for comparison	Fairhaven mean	Landfall mean for comparison	Fairhaven monthly frequency	Landfall monthly frequency for comparison
Ringed Plover	309	93	54.6	11.6	0.5	0.5
Dunlin	1,585	1,031	879.4	87.1	0.9	0.6
Sanderling	2,000	2,134	477.1	305.9	0.6	0.9
Redshank	131	13	36.1	2.2	0.8	0.2

5.2 Proposed measures and community engagement

5.2.1.1 The Applicants aim to reduce disturbance at Fairhaven saltmarsh thus reducing pressures upon the features that use both Fairhaven, and the landfall. The specific measures that the Applicants aim to implement are:

- Wardening – Wardens will educate members of the public about the birds that use the area and the importance of the roost and SPA in terms of global populations of migratory waders and wildfowl. They will also dissuade members of the public from straying from the footpaths by informing people of the resulting energy loss caused by disturbance, and how this may impact an individual birds' survival and reproductive fitness during the passage period.
- Signage – This will aim to further educate the public on the importance of the area for birds and how they can play a role in reducing pressures on the waders of the SPA.
- Soft fencing – Such as a post and rope fence. This will encourage people to remain walking on the footpaths whilst not imposing restrictions on views.

5.2.1.2 These mitigation measures are described in Section 1.5.3 of the Outline Ecological Management Plan (APP-212). The Applicants have committed to implementation of detailed Ecological Management Plans via the following commitment, CoT76 which is secured by Requirement 12 of Schedules 2A & 2B of the draft DCO (AS-004). Detailed Ecological Management Plans will be developed in consultation with the relevant statutory advisors and regulators.

5.2.1.3 There are a number of studies that evidence that these measures are effective, and that implementation of these measures should be considered as a strategy to reduce recreational disturbance impacts upon both non-breeding waders, and breeding terns, seabirds and beach nesting waders. Although there are no breeding terns or waders present at the landfall, the disturbance pressures that they face can be

directly compared to the disturbance pressures faced by non-breeding waders on intertidal and upper beach habitats.

- 5.2.1.4 A Natural England study (Liley & Sutherland, 2007) investigated how activities such as recreational walking, dog walking, and kite surfing affect bird species, particularly breeding little tern and non-breeding waterbirds. The findings evidenced that recreational activities cause significant disturbances, leading to a shortage of safe roosting areas. The study emphasized the need for effective management strategies to mitigate these disturbances and protect the bird populations. The strategies included enhanced signage and education, zoning and access restrictions, monitoring and enforcement and habitat management.
- 5.2.1.5 Weston et al. (2012) investigated whether temporary beach closures can help conserve breeding shorebirds by reducing human disturbance and egg-crushing incidents on recreational beaches. They monitored this using three types of closure signs, fences, and wardens. The study found that 93.7% of beach visitors complied with the closures, significantly reducing egg-crushing rates within the protected areas. All three types of closures were effective, with compliance rates ranging from 88.0% to 99.4%. The study concluded that these measures can be effective in reducing human disturbance and protecting breeding shorebirds.
- 5.2.1.6 Quinn et al. (2020) aimed to evaluate the effectiveness of regulatory signs in reducing human disturbance to Northern gannets during their breeding season. The study evidenced that breeding success was higher in undisturbed control areas compared to areas near human activity. Regulatory signs significantly reduced the proximity of visitors to the colony, leading to fewer disturbances and therefore fewer birds were displaced from their nests in the presence of signs, except for photographers who occasionally ignored the signs. The study concluded that simple and informative regulatory signs can be a cost-effective method to minimize human disturbance in wildlife areas and reduce stress on the birds.
- 5.2.1.7 The Applicants feel confident that measures such as the implementation of signage and temporary fences, paired with an onsite warden, will help to reduce recreational disturbance and promote Fairhaven saltmarsh as a safe high tide roost site for those birds prevented from roosting or disturbed by works at the landfall.
- 5.2.1.8 Do Natural England agree that the area at Fairhaven Saltmarsh can provide mitigation for the disturbance and temporary habitat loss at the landfall during the sensitive passage period of the construction phase?
- 5.2.1.9 All questions raised as part of this technical note for agreement with Natural England are summarised in Section 8.

6 Conclusions

- The Applicants have committed to a seasonal restriction on all construction works within the intertidal and upper beach at the

landfall between November and March inclusive. Therefore, there will be no predicted impacts to birds over the wintering period.

- The intertidal and upper beach at the landfall is already a very disturbed part of the SPA as the result of recreational activities. The area lies between Lytham St Anne's and Blackpool, and for this reason the beach can be very busy (with hundreds of visitors) between June and August. Using the baseline characterisation surveys, the Applicants found that April, September and October are the key periods when waders may be subject to additional (above background level) disturbance caused by construction at the landfall.
- There are a number of passage wader features that have been recorded at the landfall. These are:
 - Ringed plover;
 - Dunlin;
 - Sanderling; and
 - Redshank.
- The sanderling were the most frequently recorded wader species, and the species was present in the highest numbers. The area is used for both foraging and occasional roosting. Dunlin and ringed plover were also present occasionally in high numbers, although they predominantly used the landfall for occasional roosting activities. The highest peaks of sanderling and dunlin recorded during the baseline characterisation surveys were exceptional and may have been caused by disturbance at their regular roost sites (which is likely to be Fairhaven saltmarsh). Redshank were present in very low numbers. Although there were a range of months when these species were present, early spring passage (April) was of greatest importance followed by August through to October. Although sanderling were present during a range of tidal states, the very high peaks were based around high tide. This was also the case with dunlin and for both species these high counts were probably composed of passage birds searching for safe roosting sites (after possible disturbance at their regular roost site). Ringed plover had more of an association with flood and ebb tides, but the peak numbers were still recorded as roosting. The frequency of occurrence and high numbers of disturbance tolerant species such as sanderling is likely reflective of the high background level of disturbance currently caused by dogs and people at the landfall. These species are more resistant to disturbance pressures and are therefore more likely to continue using the area whilst other less tolerant birds will seek out areas with lower disturbance pressures.
- Given the level of usage recorded at the landfall, the mitigation measure should be focussed on sanderling, and to a lesser extent dunlin and ringed plover.
- The Applicants have proposed that, to mitigate for the additional disturbance created by construction activities during the passage

period (April, September and October), measures will be put in place to reduce recreational disturbance at the high tide roost at Fairhaven saltmarsh, providing alternative more favourable habitat for those passage species with the potential to be affected at the landfall. Fairhaven saltmarsh is the closest high tide roost to the landfall, as such it is highly likely that many of the birds that roost at Fairhaven also use the landfall, either on a regular basis for foraging, or irregularly for roosting. The Fairhaven saltmarsh is subject to frequent disturbance events from recreational activities (e.g. dog walkers and walkers).

- The Applicants found that the same wader species use both the landfall and Fairhaven saltmarsh, and there is clear connectivity between the two sites. It also supports higher numbers of most species and WeBS data confirm that the area is used by high numbers of waders throughout both the spring and autumn passage. Given that the biggest impacts at the landfall are predicted to be on roosting birds at high tide, a reduction in recreational disturbance at Fairhaven saltmarsh will mitigate for the loss of occasional roosting at the landfall and is considered as comparable mitigation. The Applicants survey data show that Fairhaven saltmarsh, and the birds that use it, are subject to regular disturbance events around the high tide period currently, but measures will act to reduce this, at least in the short term through construction.
- The temporary impacts caused by construction at the landfall are limited in extent and duration, therefore the Applicants consider that the proposed mitigation is sufficient for any temporary effects caused during construction. The Applicants also note that, as only one cable will be installed at a time during construction, there will still be plenty of habitat available at the landfall for roosting and/or foraging birds during construction, this is especially true for disturbance tolerant species such as sanderling.
- The Applicants have sought community engagement as they understand that local ownership of recreational disturbance reduction schemes are more likely to result in success.

7 Points of agreements to Natural England

- Do Natural England agree that there will be no predicted impacts during the winter period (November to March) during the construction phase?
- Do Natural England agree that the sensitive passage months at the landfall can be defined as September, October and April?
- Do Natural England agree that the area at Fairhaven Saltmarsh can provide mitigation for the disturbance and temporary habitat loss at the landfall during the sensitive passage period of the construction phase?

- Do Natural England agree that there is no AEol on the Ribble and Alt Estuaries SPA and Ramasar site as a result of the construction of the Transmission Assets?

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