



**NORTH FALLS**

*Offshore Wind Farm*

## **ENVIRONMENTAL STATEMENT**

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2020-21 Non-Breeding Bird Surveys Report

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MacArthur  
Green

# North Falls Offshore Wind Farm

## Onshore Landfall Area : 2020/21 Non-breeding Bird Surveys

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**Date:** 21 May 2021

**Tel:** 0141 342 5404

**Web:** [www.macarthurgreen.com](http://www.macarthurgreen.com)

**Address:** 93 South Woodside Road | Glasgow | G20 6NT

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## 1 INTRODUCTION

A series of ornithological surveys were undertaken from October 2020 to March 2021, to determine the non-breeding bird assemblage present within the Potential Landfall Search Area (the ‘Search Area’) for the proposed North Falls Offshore Wind Farm (**Figure 1**), and identify at an early stage, potential sensitivities associated with construction phase of the landfall area and potential onshore cable routes.

Potential North Falls onshore cable routes within the Search Area have not yet been determined, as National Grid have yet to identify a grid connection point for North Falls Offshore Wind Farm. As such, the Search Area covers all potential land up to and around the existing Little Clacton substation.

## 2 METHODOLOGY

Survey work was undertaken during each month from October 2020 to March 2021, covering the main non-breeding bird season. This comprised a series of twice monthly transect walks (incorporating regularly-spaced vantage points) to record bird numbers, distribution and activity within the Search Area, and a buffer of up to 300m in suitable habitat (combined, the ‘survey area’) to account for the spatial extent of any potential disturbance impacts to birds utilising any habitats of importance just outside of the Search Area (**Figure 1**).

The following impacts were identified as being of key concern to non-breeding birds:

- Disturbance to, or displacement of wintering and migrant species at roost sites; and
- Disturbance to, or displacement of wintering and migrant species at feeding sites.

The aims of surveys were therefore:

- To locate target species’ roost and feeding sites within the survey area;
- To establish peak numbers of birds likely to utilise such areas; and
- To establish when, and how frequently, such locations are used.

The results of the surveys will be used to inform the final landfall and onshore cable route, subsequent Environmental Impact Assessment and Habitats Regulations Assessment if required.

### 2.1 Desk Study

A preliminary desk study identified the following likely key sensitivities, which were used to inform the scope of survey work:

- Holland Haven Marshes Site of Special Scientific Interest (SSSI) and Holland Haven Local Nature Reserve, located within the Search Area (**Figure 1**). This is an area of reclaimed saltmarsh and freshwater marsh which according to the Natural England SSSI citation<sup>1</sup>, hosts during winter, a range of wader and wildfowl species, including passage migrants, as well as wintering raptors such as hen harrier and short-eared owl;

<sup>1</sup> <https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1006349.pdf>

- Hamford Water Special Protection Area (SPA), located 3.6km north of the Search Area. It supports numbers of European importance of two species listed in Annex I to the EU Birds Directive (breeding little tern and wintering avocet) and seven regularly occurring migratory species of waterbirds (dark-bellied brent goose, shelduck, teal, ringed plover, grey plover, black-tailed godwit and redshank). It is possible that connectivity with the SPA exists as SPA birds may use the Search Area on occasion.
- Colne Estuary SPA, located 8.2km southwest of the Search Area. This is designated for breeding pochard, ringed plover and little tern; and wintering dark-bellied brent goose, hen harrier and redshank as well as its wintering waterfowl assemblage. It is possible that SPA birds may use the Search Area on occasion.
- A review of the British Trust for Ornithology's (BTO) Wetland Bird Survey (WeBS) counts for the Holland Marshes count sector which shows that the location regularly hosts >1,000 brent geese during winter (with other species at lower numbers); and
- A review of aerial imagery which shows that the Search Area is a mixture of agricultural fields (mainly arable), marsh and marshy grassland, and amenity (golf course) habitats.

Based on this information, target species for winter surveys were therefore considered to be all wildfowl, wader and raptor species, although any other species of high conservation concern<sup>2</sup> were also recorded. Tally counts were also made of all other more common species.

A further desk study will be undertaken to compile all available historic data at the EIA stage. Monthly WeBS count data for the Holland Marshes area would be obtained from the BTO, which can potentially confirm whether the data collected in 2020/21 are representative of the long-term situation. Other records from local birdwatchers, the local wildlife trust or biological information records centres will be obtained if available.

## 2.2 Survey Methodology

Survey methodology was informed by the following guidance;

- The BTO WeBS Core Count methodology for waterbirds<sup>3</sup> which follows Bibby *et al.* (2000<sup>4</sup>); and Gilbert *et al.* (1998<sup>5</sup>); and
- Scottish Natural Heritage (2017<sup>6</sup>) guidance on bird survey methods for onshore wind farms, which includes a section on surveying wintering and migratory wildfowl.

A reconnaissance visit was made in September 2020, prior to the first survey to confirm walkover routes, suitable vantage point locations, access restrictions and health & safety issues.

Because the cable route or landfall area was not determined in sufficient detail during the survey period, landowner access was not arranged within the survey area. A series of walkover surveys following predetermined routes, combined with scans from a number of vantage points were

<sup>2</sup> Listed in Annex I of the EU Birds Directive, Schedule 1 of the Wildlife & Countryside Act 1981 or rare, Red-listed species in the Birds of Conservation Concern (Eaton *et al.* 2015).

<sup>3</sup> [https://www.bto.org/sites/default/files/02\\_-\\_core\\_count\\_o.pdf](https://www.bto.org/sites/default/files/02_-_core_count_o.pdf)

<sup>4</sup> Bibby, C.J., Burgess, N.D., Hill, D.A. & Mustoe, S. 2000. Bird Census Techniques. 2nd edition. Academic Press, London.

<sup>5</sup> Gilbert, G., Gibbons, D.W. & Evans, J. 1998. Bird Monitoring Methods. RSPB, Sandy.

<sup>6</sup> SNH (2017). Recommended bird survey methods to inform impact assessment of onshore wind farms.

therefore conducted twice per month, utilising Public Rights of Way (PRoWs) and public roads within the survey area. The walkover routes and vantage point locations are shown on **Figure 1**.

Based on the desk study information and local surveyor knowledge, surveys were focussed on areas of suitable habitat (e.g., wetlands, waterbodies, marshy fields and suitable winter crop fields) likely to be utilised by target species.

Since groups of birds may be highly mobile during survey periods, distinct parts of the Search Area were compartmentalised into manageable areas largely visible at the same time, based on habitat type/field boundaries, so that peak counts per species, per survey could be made within each compartment, similar to a WeBS sector approach. This is shown as compartments A-E on **Figure 1**. Locations of target species were plotted onto a map to be able to identify key roost or feeding sites, whereas a tally of all non-target species within each compartment was made during each survey, to allow the surveyor to focus on target species.

The “look-see” methodology advised for WeBS core counts was followed, which determines that efforts should be made to ensure all suitable areas within the Search Area should be surveyed to within 500m. This means that counts can be made for example, from a suitable location outside of a field/compartment boundary, either along a footpath or from a public road. This method helped ensure that the risk of disturbance to birds is minimised, and also enabled the surveyor to record birds just outside of the Search Area, which may still be subject to disturbance.

In order to establish the location of key roost sites, surveys were timed to overlap with dawn or dusk periods, as well as continuing through the day to determine feeding sites. Effort was made to schedule surveys during suitable weather conditions, and to overlap with any foreseeable particularly cold periods, as the numbers of birds at a site may be augmented by influxes from the continent or from adjacent areas, and so the identification of potential cold-weather refuges was an important consideration.

The surveyor scanned each compartment from walkover routes and suitable vantage points for a suitable duration until it was confidently determined that all birds present were recorded.

The following information was recorded within each compartment during each survey:

- Peak count of each species;
- Location(s) of target species within compartment;
- Date and time of each count;
- Behaviour of birds (e.g., roosting, feeding);
- Directions of any movements to and from compartments and survey area; and
- Accuracy of counts should estimates be required, e.g., by access restrictions, continuous movements of birds.

Evidence of actual, and possible, disturbance sources to birds (e.g., dog walkers, bird scarers) were also noted during surveys, to help inform baseline disturbance levels within the Study Area.



## 3 RESULTS

### 3.1 Peak Counts

During the October to March survey period a total of 113 species were recorded within the survey area (refer to Annex A for species list). Of these, 52 were considered to be target species (wildfowl, waders, raptors and rare, BoCC Red-listed species).

A summary of peak counts recorded for each target species within compartments A-E is presented in **Table 1**. This represents the largest single count of a species during any survey within a particular compartment. It should be noted that it is possible that the same individuals were recorded in two or more compartments, and therefore population estimates for the whole survey area cannot be ascertained by summing peak counts within all compartments. Also shown are the 1% national and international thresholds for wildfowl and waders provided in the BTO's WeBS reports (Frost *et al.* 2020<sup>7</sup>), used to identify important sites. Where counts meet or exceed thresholds, this is highlighted.

Results show that Compartment D (Holland Marshes) held the greatest number of target species (44) and greatest number of birds. Compartment B (Holland Brook) held the next highest number of species (24), with comparatively lower diversity within the other compartments. For all wildfowl and wader species, only European white-fronted goose was recorded in numbers that exceed the national threshold of importance, with up to 101 individuals recorded in compartments A and C in late December 2020. The species was also present in compartments C and D during late December 2020 and early January 2021. Single great white egrets were recorded in compartments B and D which meets the current threshold for national importance.

Dark-bellied brent geese numbers peaked at 770 individuals in late December 2020 within Compartment E. Whilst this does not meet the 1% national threshold for the species, it represents around 14% of the cited populations given for both Hamford Water SPA (5,650 individuals, 1986/87 to 1990/91) and Colne Estuary SPA (5,315 individuals, 1987/88 to 1991/92). A number of other species were found in reasonably large numbers, including greylag goose, golden plover, lapwing, teal and wigeon.

Target raptor and owl species were recorded on occasion, including barn owl which is likely to be resident within the survey area, peregrine and marsh harrier which may also be present during the breeding season, and hen harrier, merlin and short-eared owl which are likely to be present during winter only.

Some rare BoCC Red-listed / Schedule 1 listed passerine species were also present, which may be reflective of possible breeding within the survey area. This includes bearded tit, corn bunting, Dartford warbler and yellow wagtail.

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<sup>7</sup> Frost, T.M., Calbrade, N.A., Birtles, G.A., Mellan, H.J., Hall, C., Robinson, A.E., Wotton, S.R., Balmer, D.E. and Austin, G.E. 2020. Waterbirds in the UK 2018/19: The Wetland Bird Survey. BTO/RSPB/JNCC. Thetford.

Table 1 Target species peak counts (individuals) per compartment (Cpt)

Species	Cpt A Little Clacton	Cpt B Holland Brook	Cpt C Great Holland	Cpt D Holland Marshes	Cpt E Frinton Golf C.	GB Threshold	Inter- national Threshold
Avocet				42		87	940
Barn owl	2	1		1		-	-
Bearded tit				2		-	-
Black-tailed godwit ( <i>islandica</i> )				5		390	1,110
Dark-bellied brent goose				110	770	980	2,100
Canada goose		34	1	28		-	-
Canada x greylag goose hybrid		1	7	7		-	-
Cetti's warbler	1	2	1	6	1	-	-
Coot	2	1				2,000	15,550
Cormorant		5	1	96	1	-	-
Corn bunting					5	-	-
Curlew				53	6	1,200	7,600
Dartford warbler				1		-	-
Dunlin				2		3,400	13,300
European W-f goose ( <i>albifrons</i> )	101		101	50		21	12,000
Firecrest				1		-	-
Gadwall	4	7		4		310	1,200
Golden plover		1	100		27	4,000	9,300
Great crested grebe				2		170	6,300
Great white egret		1		1		1	780
Green sandpiper		1		1		3	20,000
Greylag goose	25	45	220	223	1	910	980
Kingfisher				1		-	-
Lapwing			252	137	250	6,200	20,000
Little egret				2		110	1,100
Little grebe	1	1		3		150	4,700
Little owl	1	1			2	-	-

Species	Cpt A Little Clacton	Cpt B Holland Brook	Cpt C Great Holland	Cpt D Holland Marshes	Cpt E Frinton Golf C.	GB Threshold	Inter- national Threshold
Mallard	15	13	1	19	16	6,700	20,000
Marsh harrier	1					-	-
Merlin				1		-	-
Moorhen	3	13	2	4	11	3,000	20,000
Mute swan	2	6	8	7		500	500
Oystercatcher	1	2		6	3	2,900	8,200
Peregrine	1			1	1	-	-
Pink-footed goose				2		5,100	5,400
Pintail	32	8		3		200	600
Purple sandpiper				7		97	110
Redshank				5		940	2,400
Ruff				1		9	20,000
Shag				1		1,100	2,000
Shelduck	8	11		19		470	2,500
Short-eared owl				1		-	-
Shoveler		3	4	38		190	650
Snipe		3		22		10000	20,000
Teal	45	305	30	216	76	4,300	5,000
Tufted duck	4					1,300	8,900
Tundra bean goose				2		3	5,500
Turnstone				7		400	1,400
Water rail			1	1		-	6,400
Wigeon	120	115	16	288	200	4,500	14,000
Woodcock	1				1	14,000	20,000
Yellow wagtail					1	-	-

The detailed results obtained from each survey, separated into each of the five compartments (A-E) are presented in tables in Annex B. For each target species, the peak count of individuals recorded during each survey is shown. A summary of results for each compartment is provided below.

### 3.2 Compartment A: Little Clacton

The Little Clacton compartment comprises mainly flat arable farmland to the west of Holland Haven Marshes SSSI and is bordered by commercial and residential areas to the south and west.

**Table 3** in Annex B provides a detailed breakdown of peak counts per survey for each target species. In general, numbers of geese and waders were relatively low compared to those nearer to Holland Haven Marshes, although a peak count of 101 white-fronted geese was recorded in a field towards the north of the compartment in December 2020 (**Figure 2a**).

There were also notable counts of teal (45 individuals), pintail (32 individuals) and wigeon (120 individuals) made to the north of the compartment near the small reservoir, in mid-February 2021 (**Figure 3**).

Barn owls were also regularly recorded in this compartment and the species may breed in the vicinity. A Cetti's warbler (breeding species listed in Schedule 1 of the Wildlife & Countryside Act 1981) was heard within a damp wooded area at the northern site boundary in late February 2021 and so breeding may occur in this compartment.

### 3.3 Compartment B: Holland Brook

Compartment B is centred around Holland Brook which leads into Holland Haven Marshes and forms part of the SSSI. The marsh and wetland habitats of Holland Brook have an extensive ditch system and are surrounded by arable farmland with a few small agricultural reservoirs.

Results presented in **Table 4** and **Figure 3** show that the Compartment is regularly used by duck species including teal (peak count of 305 individuals) and wigeon (115), as well as pintail, gadwall, shelduck, shoveler and mallard in smaller numbers (**Figure 3**). Canada goose and greylag goose were also regularly recorded (**Figure 2b**).

The compartment was relatively unimportant for waders, with small numbers of golden plover and snipe occasionally present.

Cetti's warbler was consistently recorded from January 2021 and it is considered likely that the species breeds at Holland Brook. Barn owl and little owl were present and may also breed locally.

### 3.4 Compartment C: Great Holland

Compartment C comprises an extent of flat, intensively managed arable farmland of generally large field sizes. There are two agricultural reservoirs present within the site.

Species diversity was relatively low within this compartment, with a total of 14 species recorded across all surveys (**Table 5**). Notable records of geese were the count of 101 white-fronted geese in early December 2020 (the same flock that was recorded in Compartment A), and up to 220 greylag geese present.

Relatively large flocks of waders were occasionally recorded in stubble fields, with up to 252 lapwings in early January and 100 golden plovers in early December 2020 (**Figure 4**).

### 3.5 Compartment D: Holland Marshes

Compartment D forms the main part of the Holland Haven Marshes SSSI and comprises areas of reclaimed estuarine saltmarsh and freshwater marsh. The compartment is bisected by Holland Brook and contains a network of ditches, to produce a variety of suitable habitats for birds.

Brent geese were sometimes present (up to 110 birds), and flocks of white-fronted geese (up to 50 birds) were recorded on two occasions (**Table 6, Figure 2a**). Greylag geese were also regularly recorded in relatively large numbers (**Figure 2b**). Two tundra bean geese were recorded on one occasion.

Ducks were present in relatively large numbers within the compartment and just off the coast, with high counts of teal (up to 216 individuals), wigeon (288), shoveler (38) and shelduck (19) (**Figure 3**).

There was a notable wader assemblage, with avocet present from February 2021 onwards (up to 42 individuals), and curlew, snipe and lapwing present in good numbers throughout the winter. Purple sandpipers (up to seven individuals) were recorded beside the sea wall. Other wader species present in smaller numbers were black-tailed godwit, dunlin, green sandpiper, redshank, ruff and turnstone.

In late December 2020, due to the scrape being frozen over, wildfowl that normally frequent this area were recorded either on Holland Brook (teal) or on the sea (wigeon).

The marshes are occasionally used by barn owl, merlin, peregrine and short-eared owl.

Also notable were Schedule 1 species bearded tit, Cetti's warbler and Dartford warbler which may attempt to breed within the site during summer.

### 3.6 Compartment E: Frinton Golf Course

Compartment E contains part of the Holland Haven SSSI which extends northeast from Holland Haven Local Nature Reserve which is comprised of Frinton Golf Course and rough grassland and scrub close to the sea. To the north of the golf course is a series of large, intensively managed arable fields.

Although species diversity was relatively low in this area compared to adjacent Compartment D, there were some notable counts including a peak of 770 brent geese, and a peak of 250 lapwing using fields to the north of the SSSI on occasion. The area of SSSI within the golf course does however appear to be of relatively low importance for wintering birds compared to Holland Haven Marshes.

Other notable species observed were corn bunting and yellow wagtail utilising stubble fields, and Cetti's warbler was also present. These species may breed in the area.

## 4 BASELINE DISTURBANCE LEVELS

During surveys, observed and potential sources of disturbance to birds within the study area were noted. These may affect numbers and distributions of species in general, and at particular times of the day or year.

In general, there is widespread and frequent human activity across particular parts of the study area, including dog walkers, wildfowling, golfing, angling (at rocky jetties) and metal detecting.

The majority of the coastal strip (seawall to Kirby Brook) from Holland Haven to Frinton is used for recreational pursuits, so there is frequent potential disturbance to birds. During one survey in late

December 2020 for example, a total of 23 dog-walkers with 30 dogs (some off leash), 28 joggers, 21 golfers and 50-100 non-dog walkers were noted. Some PRoWs in other parts of the study area were also in heavy use by walkers.

Two gas gun scarers were stationed in Compartment C, and a further in Compartment A during winter months when geese are present. These are likely to affect the distribution and site usage of wildfowl in particular within the study area.

## 5 DISCUSSION

A reasonably large number of species were recorded within the survey area during the 2020-21 non-breeding season, although distribution was not even, with some areas more favoured by species, in particular within and around the wetland habitats within Holland Haven Marshes SSSI in Compartment D and to a lesser extent in Compartment B. These compartments are likely to form the areas of highest sensitivity to target species and are most likely to require specific mitigation/management to avoid/minimise impacts during the construction phase of the project, should the landfall and cable route be in proximity to sensitive locations.

Geese and waders also utilise arable fields within the other compartments, although the presence of gas gun scarers in Compartments A and C, as well as regular human presence throughout the Search Area means that birds, particularly geese, are likely to move frequently between locations in response to disturbance sources. Nevertheless, consideration of wildfowl, ducks and waders, particularly European white-fronted goose (which are on occasion present in nationally important numbers) and other species such as dark-bellied brent goose that are qualifying features of nearby SPAs may be required further in any mitigation strategy for the project.

**ANNEX A. FULL SPECIES LIST****Table 2 Full species list and frequency of presence per compartment**

Species	Number of Surveys Recorded				
	Cpt A Little Clacton	Cpt B Holland Brook	Cpt C Great Holland	Cpt D Holland Marshes	Cpt E Frinton Golf Course
Avocet				3	
Barn Owl	7	1		4	
Bearded Tit				2	
Black Redstart	1				
Blackbird	12	11	8	11	12
Black-headed Gull	12	10	11	12	12
Black-tailed Godwit (islandica)				4	
Blue Tit	12	11	4	12	10
Brambling				1	1
Brent Goose (bernicla)				4	5
Bullfinch	3			1	
Buzzard	10	10	5	4	
Canada Goose		5	4	7	
Canada x Greylag Goose hybrid		1	4	4	
Carrion Crow	12	12	11	12	12
Caspian Gull				1	
Cetti's Warbler	1	6	1	7	5
Chaffinch	11	7	1	12	11
Chiffchaff	4	1		2	
Coal Tit	1				1
Collared Dove	12	2	3	8	10
Common Gull	6	5	4	2	7
Coot	2	1			
Cormorant		2	1	8	1
Corn Bunting					3
Curlew				10	3
Dartford Warbler				1	
Dunlin				1	
Dunnock	12	11	7	10	11
European W-f Goose (albifrons)	1		1	2	
Feral Pigeon	2	3		10	12
Fieldfare	5	2		1	1
Firecrest				1	
Gadwall	1	1		3	
Goldcrest	6		1	3	
Golden Plover		2	2		1

Number of Surveys Recorded					
Goldfinch	12	3	2	9	11
Great Black-backed Gull	1	1	2	6	2
Great Crested Grebe				1	
Great Spotted Woodpecker	5				2
Great Tit	10	6	3	7	8
Great White Egret		1		1	
Green Sandpiper		1		2	
Green Woodpecker	11	2		3	10
Greenfinch	7	3	1	5	5
Grey Heron	2	9	3	4	
Grey Wagtail	1		1	1	
Greylag Goose	2	9	6	9	1
Herring Gull	10	10	10	12	10
House Sparrow	12	4		6	9
Jackdaw	12	11	10	12	12
Jay	10	1		3	2
Kestrel	7	6	5	10	8
Kingfisher				4	
Lapwing			4	8	4
Lesser Black-backed Gull	2	6	1	7	
Lesser Redpoll				2	1
Linnet	1	5	1	5	11
Little Egret				5	
Little Grebe	1	3		1	
Little Owl	1	2			1
Long-tailed Tit	9	3		7	2
Magpie	12	10	10	12	11
Mallard	6	8	1	8	10
Marsh Harrier	1				
Meadow Pipit	9	4	3	9	7
Mediterranean Gull	1	2		2	2
Merlin				1	
Mistle Thrush	2	2			5
Moorhen	7	10	3	11	12
Mute Swan	5	5	11	6	
Oystercatcher	1	2		3	2
Peregrine	1			2	1
Pheasant	12	12	12	12	10
Pied Wagtail (yarrellii)	12	5	4	11	10
Pink-footed Goose				3	
Pintail	1	1		1	
Purple Sandpiper				8	
Red-legged Partridge	9	6	1		2



Number of Surveys Recorded					
Redshank				4	
Redwing	7	1		2	1
Reed Bunting		1	2	10	6
Robin	12	12	11	12	12
Rock Pipit				5	1
Rook	11	12	4	3	7
Ruff				2	
Shag				1	
Shelduck	2	5		12	
Short-eared Owl				2	
Shoveler		1	1	8	
Siskin				2	2
Skylark	9	6	8	9	9
Snipe		1		4	
Song Thrush	9	2		2	
Sparrowhawk	3		1	2	1
Starling	5	12	8	12	10
Stock Dove	8	8	3	6	6
Stonechat				9	2
Swallow				3	1
Tawny Owl	1				
Teal	2	7	1	12	1
Treecreeper	1				
Tufted Duck	2				
Tundra Bean Goose				1	
Turnstone				6	
Twite					1
Water Rail			1	2	
Wigeon	1	1	1	10	2
Woodcock	2				1
Woodpigeon	12	12	12	12	12
Wren	12	12	7	12	11
Yellow Wagtail					1
Yellowhammer	3	1			1

**ANNEX B. TARGET SPECIES PEAK COUNTS PER COMPARTMENT****Table 3 Target species peak counts per survey in Compartment A: Little Clacton**

Species	Oct 1	Oct 2	Nov 1	Nov 2	Dec 1	Dec 2	Jan 1	Jan 2	Feb 1	Feb 2	Mar 1	Mar 2
Barn Owl					2	2	2		2	2	2	2
Cetti's Warbler										1		
Coot											2	2
European W-f Goose (albifrons)					101							
Gadwall									4			
Greylag Goose									25		1	
Little Grebe											1	
Little Owl						1						
Mallard				6	3	15				3	5	5
Marsh Harrier								1				
Moorhen		2	1	1	2		1	3	1			
Mute Swan						2		2	2		2	2
Oystercatcher											1	
Peregrine					1							
Pintail									32			
Shelduck										1		8
Teal									45	4		
Tufted Duck											4	2
Wigeon									120			
Woodcock						1			1			

**Table 4 Target species peak counts per survey in Compartment B: Holland Brook**

Species	Oct 1	Oct 2	Nov 1	Nov 2	Dec 1	Dec 2	Jan 1	Jan 2	Feb 1	Feb 2	Mar 1	Mar 2
Barn Owl									1			
Canada Goose							29		34	6	2	8
Canada x Greylag Goose hybrid											1	
Cetti's Warbler				1				2	1	2	1	1
Coot									1			
European W-f Goose (albifrons)												
Gadwall									7			
Golden Plover									1	1		
Great White Egret		1										
Green Sandpiper								1				
Greylag Goose	2	1		1			28	1	5	8	45	28
Little Grebe						1		1			1	
Little Owl					1			1				
Mallard	8	1		2				1	10	13	6	5
Moorhen	6		3	2	1		8	13	7	4	4	3
Mute Swan	2						2	6	4		2	
Oystercatcher											1	2
Pintail									8			
Shelduck					1			2	11		6	2
Shoveler									3			
Snipe									3			
Teal					1	4	6		305	1	12	2
Wigeon									115			

**Table 5 Target species peak counts per survey in Compartment C: Great Holland**

Species	Oct 1	Oct 2	Nov 1	Nov 2	Dec 1	Dec 2	Jan 1	Jan 2	Feb 1	Feb 2	Mar 1	Mar 2
Canada Goose	1	1			1	1						
Canada x Greylag Goose hybrid	7	6			6	5						
Cetti's Warbler					1							
European W-f Goose (albifrons)					101							
Golden Plover						100				4		
Greylag Goose	133	220		120	162	73					6	
Lapwing	177				110		252		73			
Mallard	1											
Moorhen				1	2					1		
Mute Swan		4	6	7	6	8	5	8	6	6	2	2
Shoveler									4			
Teal									30			
Water Rail					1							
Wigeon									16			

Table 6 Target species peak counts per survey in Compartment D: Holland Marshes

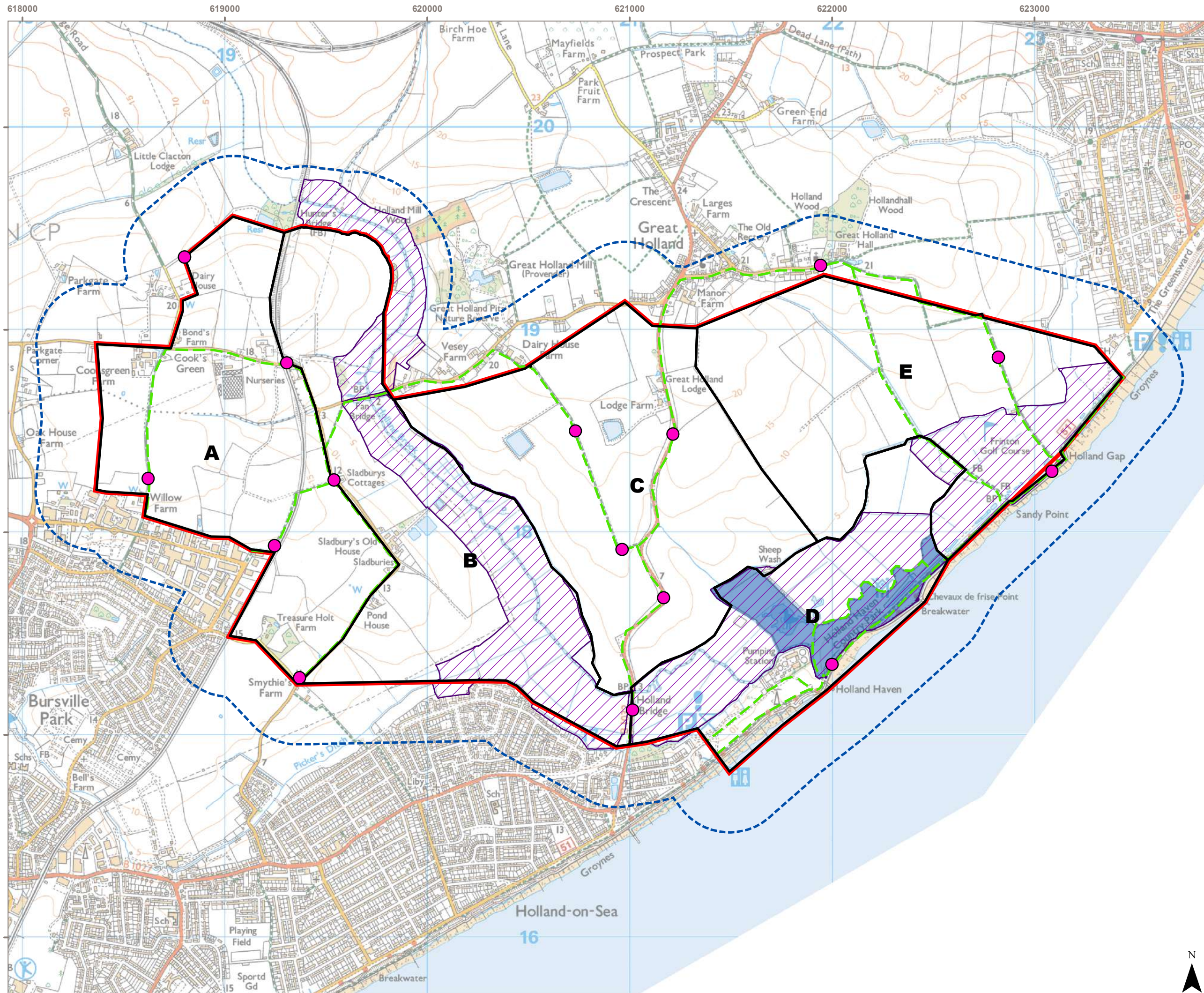
Species	Oct 1	Oct 2	Nov 1	Nov 2	Dec 1	Dec 2	Jan 1	Jan 2	Feb 1	Feb 2	Mar 1	Mar 2
Avocet										10	36	42
Barn Owl							1	1		1		1
Bearded Tit		1	2									
Black-tailed Godwit (islandica)						1				1	4	5
Brent Goose (bernicla)				31	110				11	38		
Canada Goose	1	1				1		28	5		6	2
Canada x Greylag Goose hybrid	7	6				5		6				
Cetti's Warbler	1	2	6	2				2			1	3
Curlew	3	8	5	6		5		3	9	24	31	53
Dartford Warbler			1									
Dunlin												2
European W-f Goose (albifrons)						50	26					
Firecrest											1	
Gadwall										4	2	2
Great Crested Grebe				2								
Great White Egret		1										
Green Sandpiper											1	1
Greylag Goose	126	223	128	146	53	151		149		3	16	
Kingfisher	1	1	1	1								
Lapwing	52	136	108	14	1					137	25	23
Little Egret	1	1			1	1						2
Little Grebe									3			
Mallard	2		2				1	8	10	19	9	7
Merlin								1				
Moorhen	2	3	4		2	1	2	3	3	1	4	2
Mute Swan	3	4	7		6	3	5					
Oystercatcher										2	5	6
Peregrine										1		1
Pink-footed Goose						1	2	2				
Pintail									3			
Purple Sandpiper	1		3	3	2		7	4	1	1		
Redshank		3								1	2	5

Species	Oct 1	Oct 2	Nov 1	Nov 2	Dec 1	Dec 2	Jan 1	Jan 2	Feb 1	Feb 2	Mar 1	Mar 2
Ruff										1		1
Shag					1							
Shelduck	8	5	10	8	6	8	2	7	18	13	19	10
Short-eared Owl			1			1						
Shoveler		1	6				8	10	18	38	22	9
Snipe			22							14	22	12
Teal	142	8	85	7	76	2	36	216	178	167	90	75
Tundra Bean Goose						2						
Turnstone			6	6	3	3	6					7
Water Rail		1	1									
Wigeon	42		15		160	160	52	148	236	167	288	160

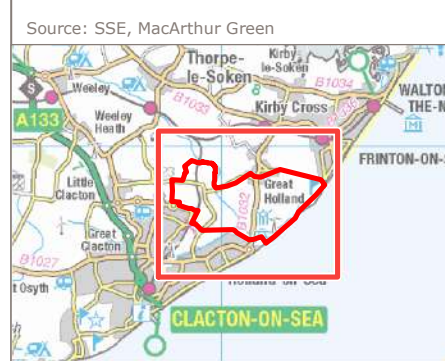
**Table 7 Target species peak counts per survey in Compartment E: Frinton Golf Course**

Species	Oct 1	Oct 2	Nov 1	Nov 2	Dec 1	Dec 2	Jan 1	Jan 2	Feb 1	Feb 2	Mar 1	Mar 2
Brent Goose (bernicle)				9	110	770	55			252		
Cetti's Warbler	1	1	1	1				1				
Corn Bunting	5	1									1	
Curlew	3		6						2			
Golden Plover									27			
Greylag Goose					1							
Lapwing	2		14			12			250			
Little Owl									2			
Mallard		13	6	7	2	13	16	15	16		5	8
Moorhen	2	3	4	2	8	5	3	11	10	8	4	3
Oystercatcher			1							3		
Peregrine											1	
Teal					76							
Wigeon					160				200			
Woodcock									1			
Yellow Wagtail	1											





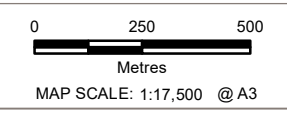
- Legend:
- Search Area
  - Vantage Point (VP)
  - 300m Survey Buffer
  - Survey Compartments
  - Survey Routes
  - Holland Haven Marshes Site of Special Scientific Interest (SSSI)
  - Holland Haven Local Nature Reserve (LNR)



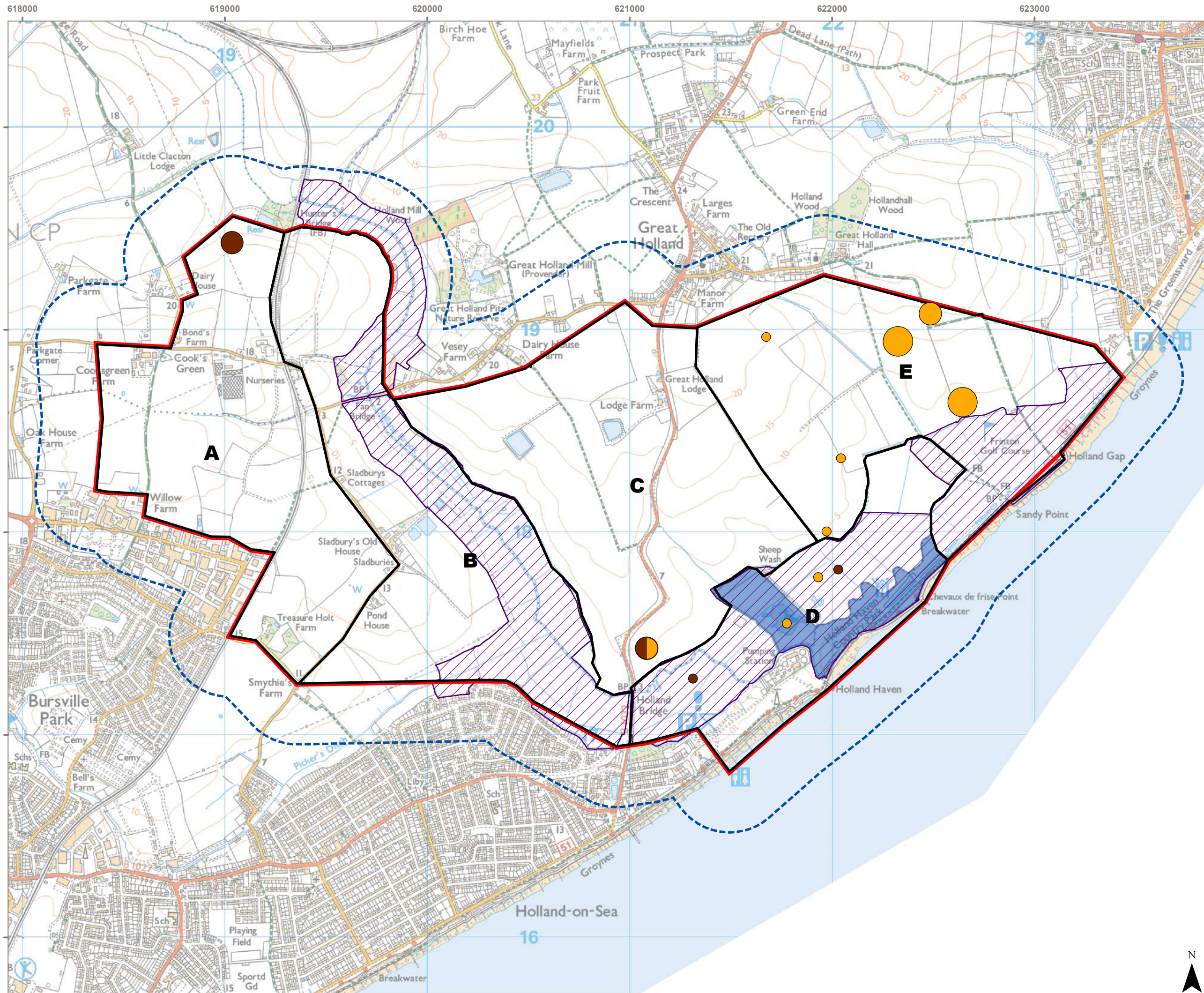
**North Falls Onshore Cable Route**

**Figure 1**

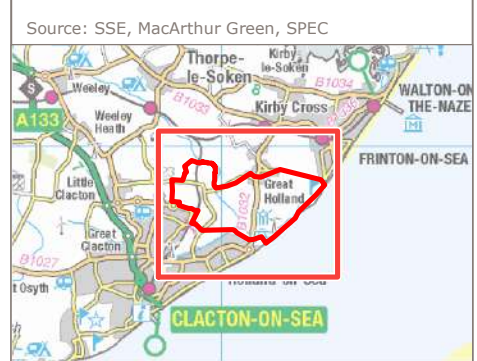
**Survey Area**







- Legend:**
- Search
  - 300m Survey
  - Survey Compartments
  - Holland Haven Marshes Site of Special Scientific Interest (SSSI)
  - Holland Haven Local Nature Reserve (LNR)
- Brent Goose Observations**
- 2 - 50
  - 101 - 250
  - 251 - 770
- White-fronted Goose Observations**
- 2 - 50
  - 101 - 250



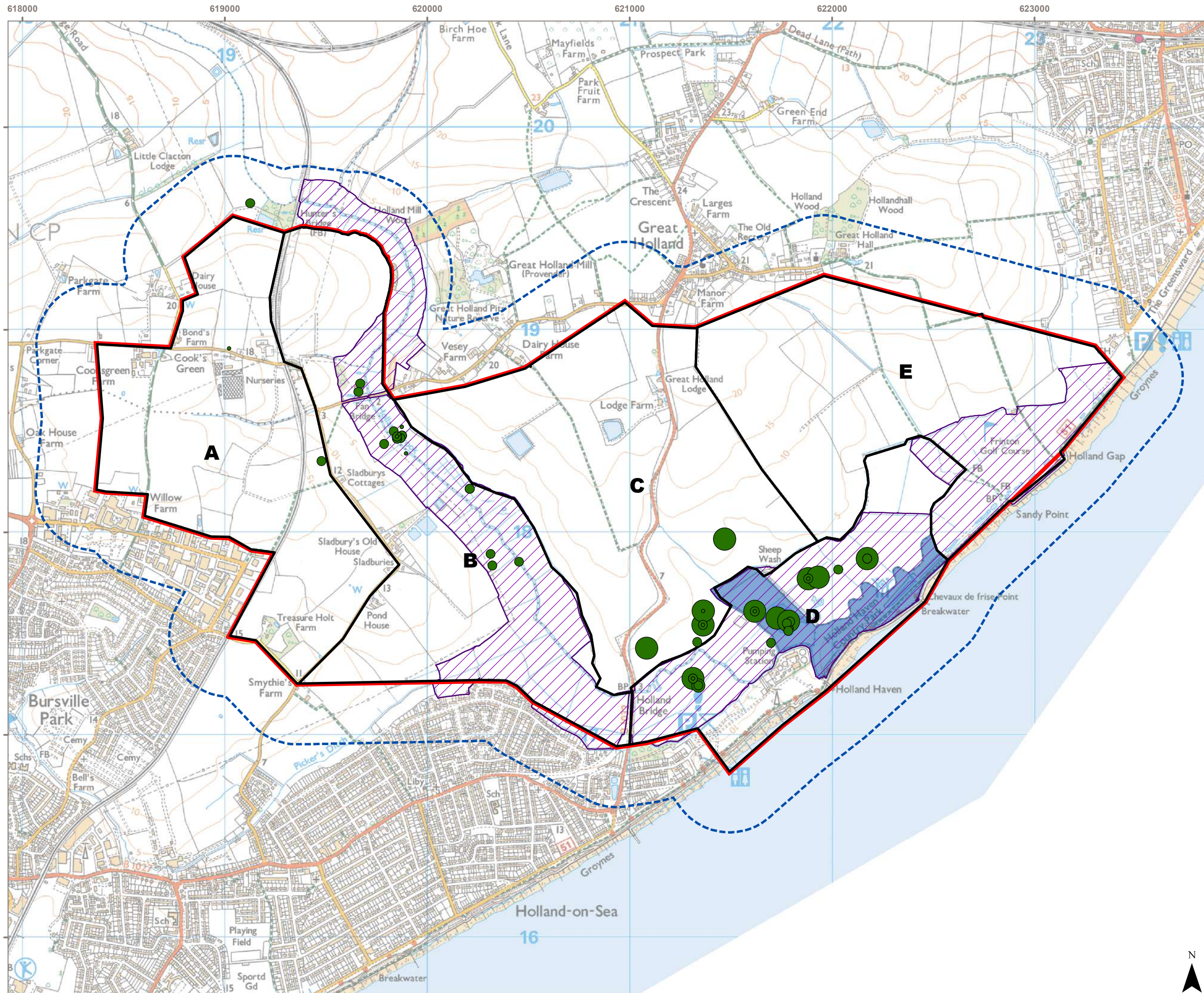
**North Falls Onshore Cable Route**

**Figure 2a**

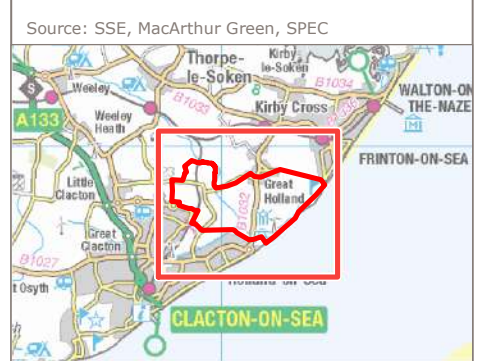
**White-fronted Geese and Brent Geese**

0 250 500  
Metres  
MAP SCALE: 1:17,500 @ A3





- Legend:**
- Search Area
  - 300m Survey Buffer
  - Survey Compartments
  - Holland Haven Marshes Site of Special Scientific Interest (SSSI)
  - Holland Haven Local Nature Reserve (LNR)
- Other Goose Species Observations**
- 1
  - 2 - 50
  - 51 - 100
  - 101 - 250



**North Falls Onshore Cable Route**

**Figure 2b**

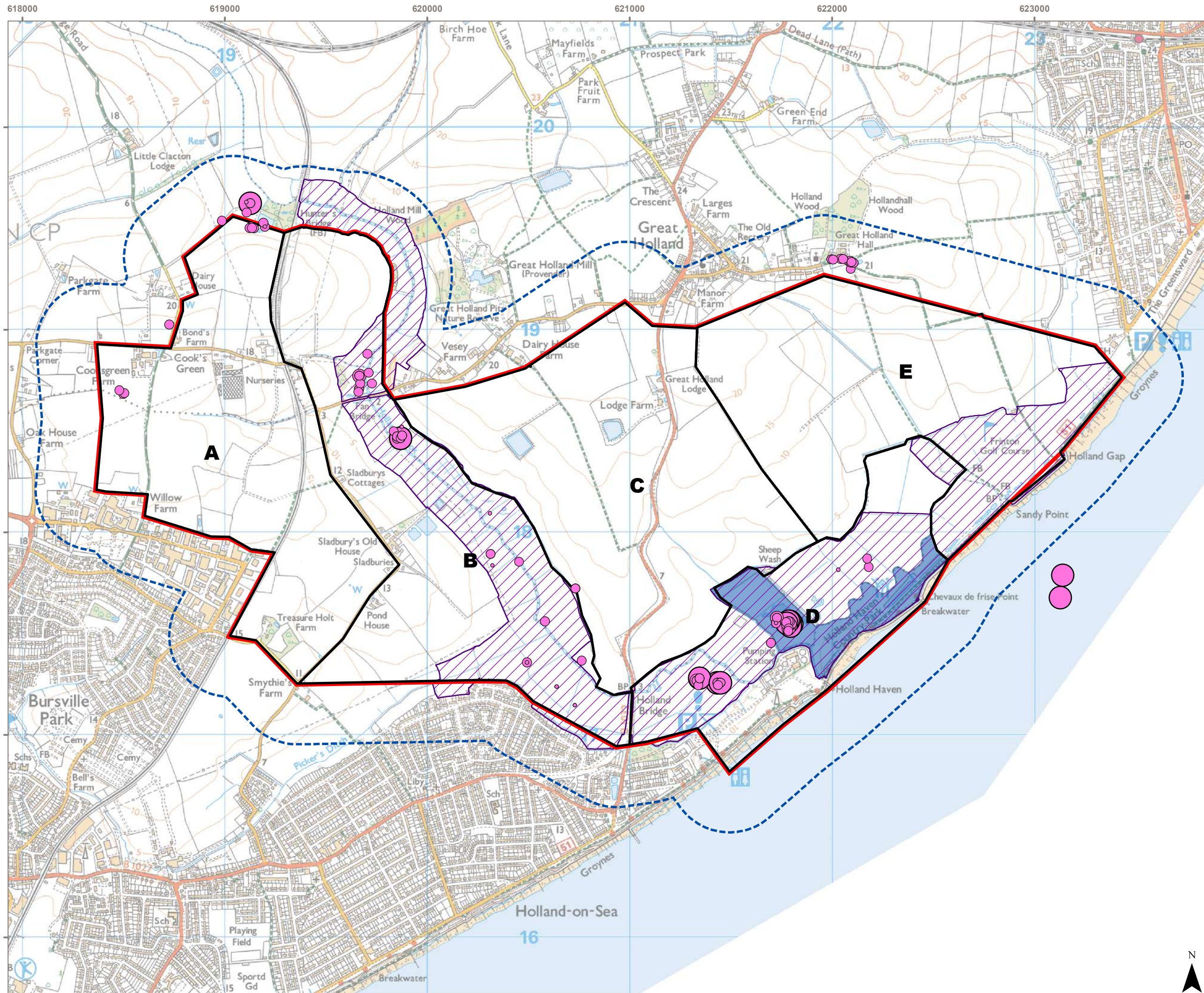
**Other Goose Species**

0      250      500  
Metres

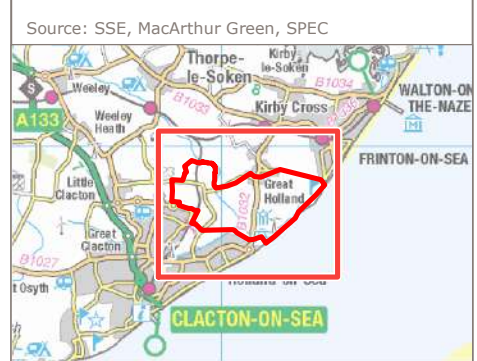
MAP SCALE: 1:17,500 @ A3







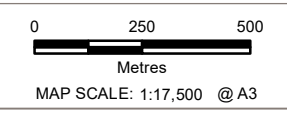
- Legend:**
- Search Area
  - 300m Survey Buffer
  - Survey Compartments
  - Holland Haven Marshes Site of Special Scientific Interest (SSSI)
  - Holland Haven Local Nature Reserve (LNR)
- Duck Species Observations**
- 1
  - 2 - 50
  - 51 - 100
  - 101 - 250



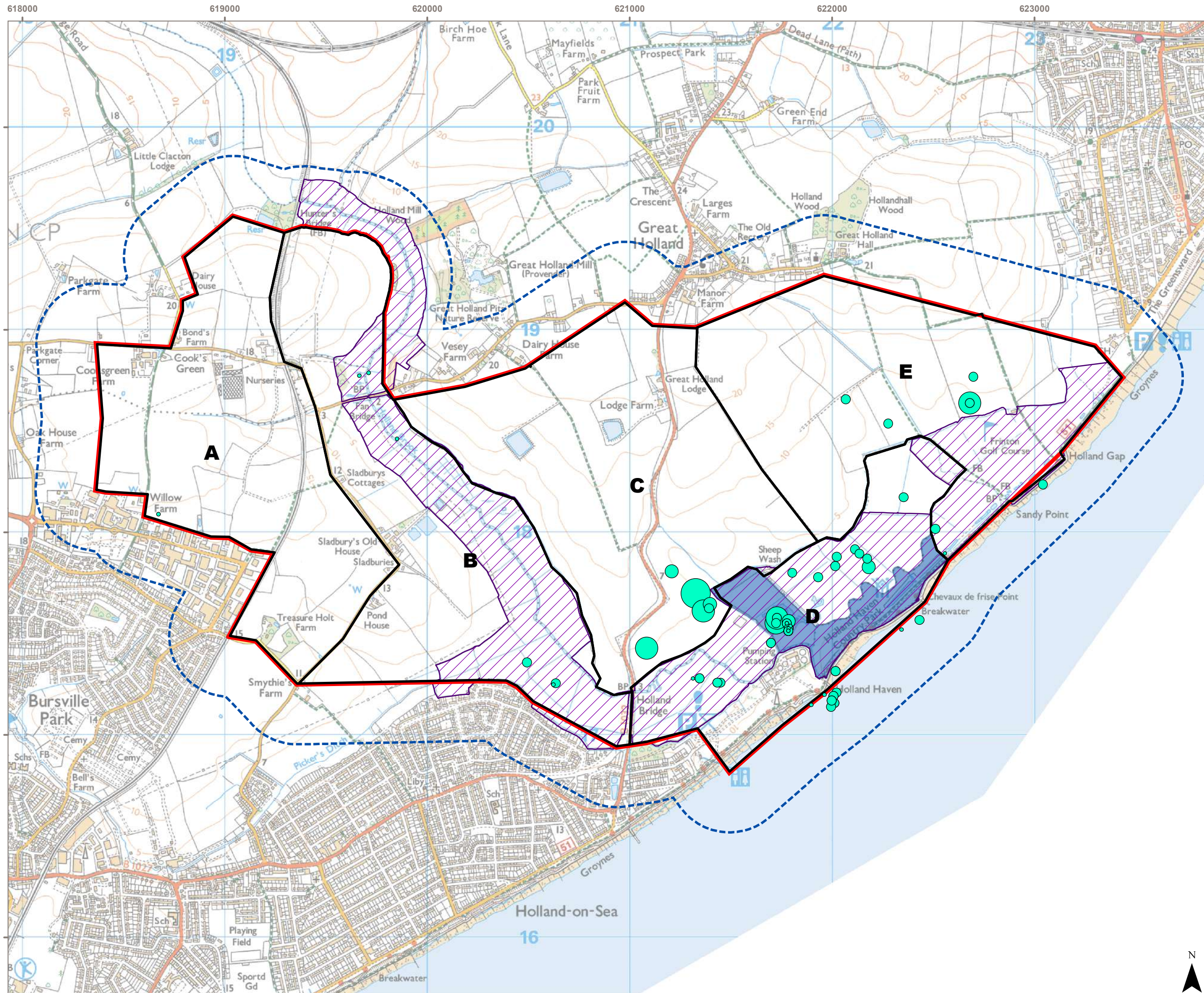
**North Falls Onshore Cable Route**

**Figure 3**

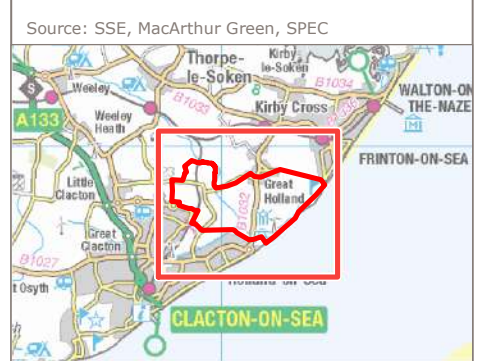
**Ducks**







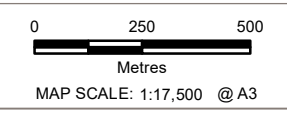
- Legend:**
- Search Area
  - 300m Survey Buffer
  - Survey Compartments
  - Holland Haven Marshes Site of Special Scientific Interest (SSSI)
  - Holland Haven Local Nature Reserve (LNR)
- Wader Species Observations**
- 1
  - 2 - 50
  - 51 - 100
  - 101 - 250
  - 251 - 770



**North Falls Onshore Cable Route**

**Figure 4**

**Waders**







**NORTH FALLS**

*Offshore Wind Farm*



## **HARNESSING THE POWER OF NORTH SEA WIND**

*North Falls Offshore Wind Farm Limited*

*A joint venture company owned equally by SSE Renewables and RWE.*

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