

## 8 UPDATED OVERWINTERING BIRD SURVEYS



Ecological Consultants  
Environmental and Rural Chartered Surveyors

## Overwintering Bird Surveys

Bourbles Lane, Pilling



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## ACCURACY OF REPORT

This report has been compiled based on the methodology as detailed and the professional experience of the surveyor. Whilst the report reflects the situation found as accurately as possible, all of the protected species this survey covers are wild and can move freely from site to site. Their presence or absence detailed in this report does not entirely preclude the possibility of a different past, current or future use of the site surveyed.

We would ask all clients acting upon the contents of this report to show due diligence when undertaking work on their site and/or in their interaction with protected species. If protected species are found during a work programme, and continuing the work programme could result in their disturbance, injury or death, either directly or indirectly an offence may be committed.

If in doubt, stop work and seek further professional advice.

## Quality and Environmental Assurance

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## INTRODUCTION

### ***Background***

Envirotech NW Ltd were commissioned to undertake an overwintering bird survey of the site in the winter of 2022/23 and 23/24 inclusive. Previous surveys had also been undertaken over the wintering period in 2019/20 and 2021/22 but on a reduced area.

The aim of these surveys was to assess which bird species use the site during the wintering season and their status, distribution and density on the site. The resulting baseline information has been used to assess the wintering bird interest of the site and its conservation significance at different geographical scales and assess the potential direct and indirect impacts the development may have on these features.

## METHODOLOGY AND SOURCES OF INFORMATION

### ***Data Search***

A data search for bird species within 2km of the site was requested from Lancashire Ecological Records Network (LERN). Fylde Bird Club provided data for wildfowl and waders within 2km of the site. British Trust for Ornithology (BTO), Natural England (NE) and Royal Society for the Protection of Birds (RSPB) data under open licence was reviewed on the NBN.

Maps and aerial photographs were interrogated to assess the distance, both on foot and by car, of the proposed development from statutory designated sites notified for their bird interest which could potentially be impacted by the proposal.

### ***Wintering bird survey***

The wintering bird survey in 2023/23 (WBS) followed a modified version of the wetland bird survey core counts methodology (Gilbert *et al.* 1998) comprising six visits. Visits were undertaken in the morning to early afternoon with a bias towards the morning, in accordance with Gilbert *et al.* 1998. These were undertaken so as to sample the site over different states of the tide. The state of tide was assessed when passing over the road bridge on the Wyre Estuary nearby.

Following a request from Natural England, enhanced overwintering bird surveys were requested following the which include two survey visits per month between September and March inclusive for wintering birds. This is in accordance with Natural England's 2010 document TIN069. This describes best practice for wintering bird surveys as requiring fortnightly surveys undertaken across the entire site for 2 years. Although TIN069 is relevant to onshore wind farms, the methodology used was considered by the consultees equally applicable to any onshore development where there may be significant impacts on wintering birds. Fortnightly visits were undertaken over the 2023/24 winter.

Mr Andrew Gardner and Ms Amy Cooke, experienced ornithologists, undertook these surveys.

On each survey, the same vantage points were used which provided full view of the entire site and boundaries. This was within the edge of the lakes on site and or public roads as such the surveyors presence would be normalised and not give rise to flight activity by birds using the site.

The site was visually observed with Swarovski SLC 10x42 Binoculars and a Swarovski 30-70 X 115 telescope from the vantage points for 1.5hrs.

After the VP survey, on windy days a transect was walked around the boundary of the fields such that on each visit all field boundaries were surveyed. On still days a drone was also flown over site at an altitude of 120m to observe birds without disturbing them.

In addition, searches for signs of wildfowl presence (counts of droppings and feathers) were undertaken to confirm feeding birds are using the site by night or on days previous to survey visits.

The local road network was driven to assess bird use of the wider landscape, outside the ZOI.

The transect route and drone flight brought all areas of the ZOI within 500m of either the VP, transect route and drone flight which in accordance with Gilbert et al (1998) is the maximum distance at which surveys should be undertaken being the effective range of binoculars. At this site a telescope was also used which provided additional range, but the 500m guidelines were still followed.

All survey periods were for at least 3hrs in duration.

Locations and behaviour of significant bird records were mapped onto photocopied OS maps (1:2500 scale) using the standard common bird census notation (Gilbert et al. 1998). Some common species were recorded as present only. Birds flying over and not using the site or surrounding area were recorded separately but included within the results.

Days of severe inclement weather were avoided, although survey periods were targeted to sample periods during light rain, light wind, heavy cloud and sunshine so as to account for variables associated with weather conditions.

There were no significant limitations to the survey. The dates and weather conditions of these visits are presented in Table 2.

## RESULTS

### ***Data Search***

The site lies within the sensitivity zone for Whooper Swan and Pinkfooted geese, Figure 1. The site is partly within the site boundary of Pilling Moss - Head Dyke Biological Heritage Site (BHS) designated for its importance for overwintering wildfowl, namely pink footed geese and whooper swans. This correlates with the observations of local residents reported on social media.

Fylde Bird Club provided data for wildfowl and waders within 2km of the site in 2023. Many records are not provided at more less than 1km resolution, where they are they are mapped to Figure 2.

Filtering species records by the secondary location description for Green Dicks Lane, which runs through the site, results in 19 species being records in the "Green Dicks Lane" area, Table 1. These records range between 1982 and 2023.

BTO, RSPB, NE and LERN records have a higher resolution and are shown on Figure 3.

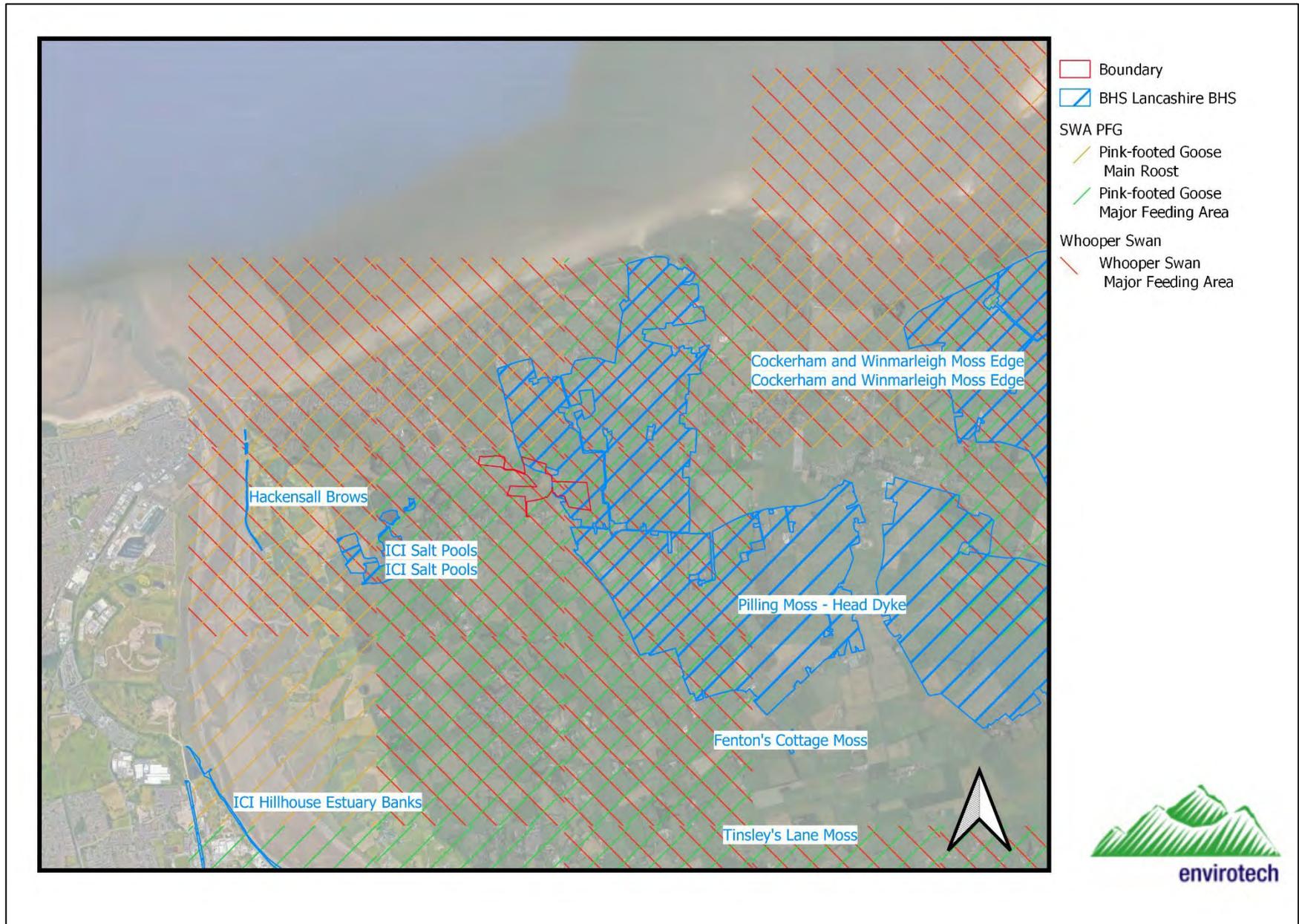


Figure 1- Goose and Swan Feeding and Flight areas

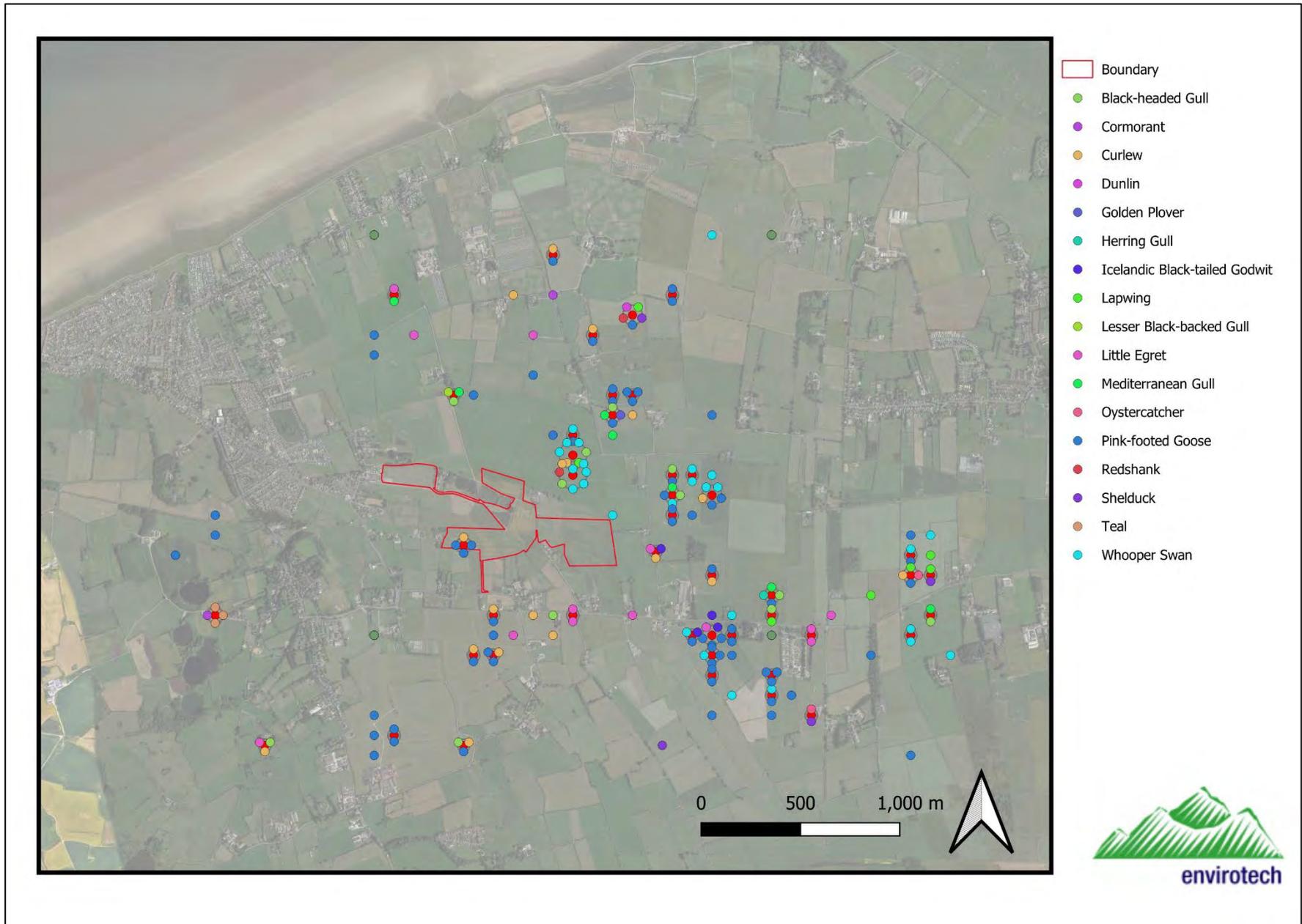
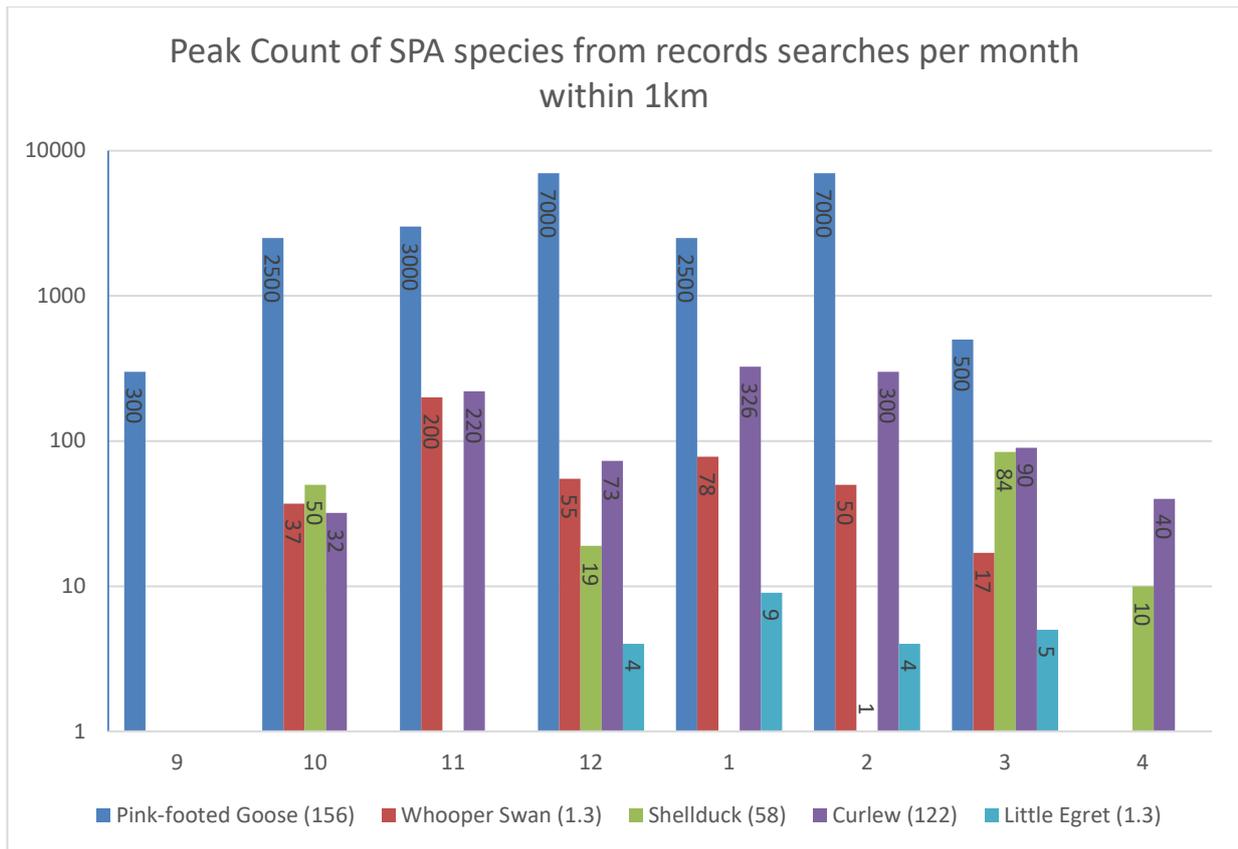


Figure 2- Fylde Bird Group Records



BS	Bewick's Swan
BH	Black-headed Gull
BW	Icelandic Black-tailed Godwit
CA	Cormorant
CU	Curlew
DN	Dunlin
ET	Little Egret
GP	Golden Plover
HG	Herring Gull
KN	Knot
L.	Lapwing
LB	Lesser Black-backed Gull
MU	Mediterranean Gull
PG	Pink-footed Goose
RK	Redshank
RP	Ringed Plover
RU	Ruff
SU	Shelduck
WS	Whooper Swan

Table 1- Fylde Bird Group Bird species recorded with "Green Dicks Lane" in the record description

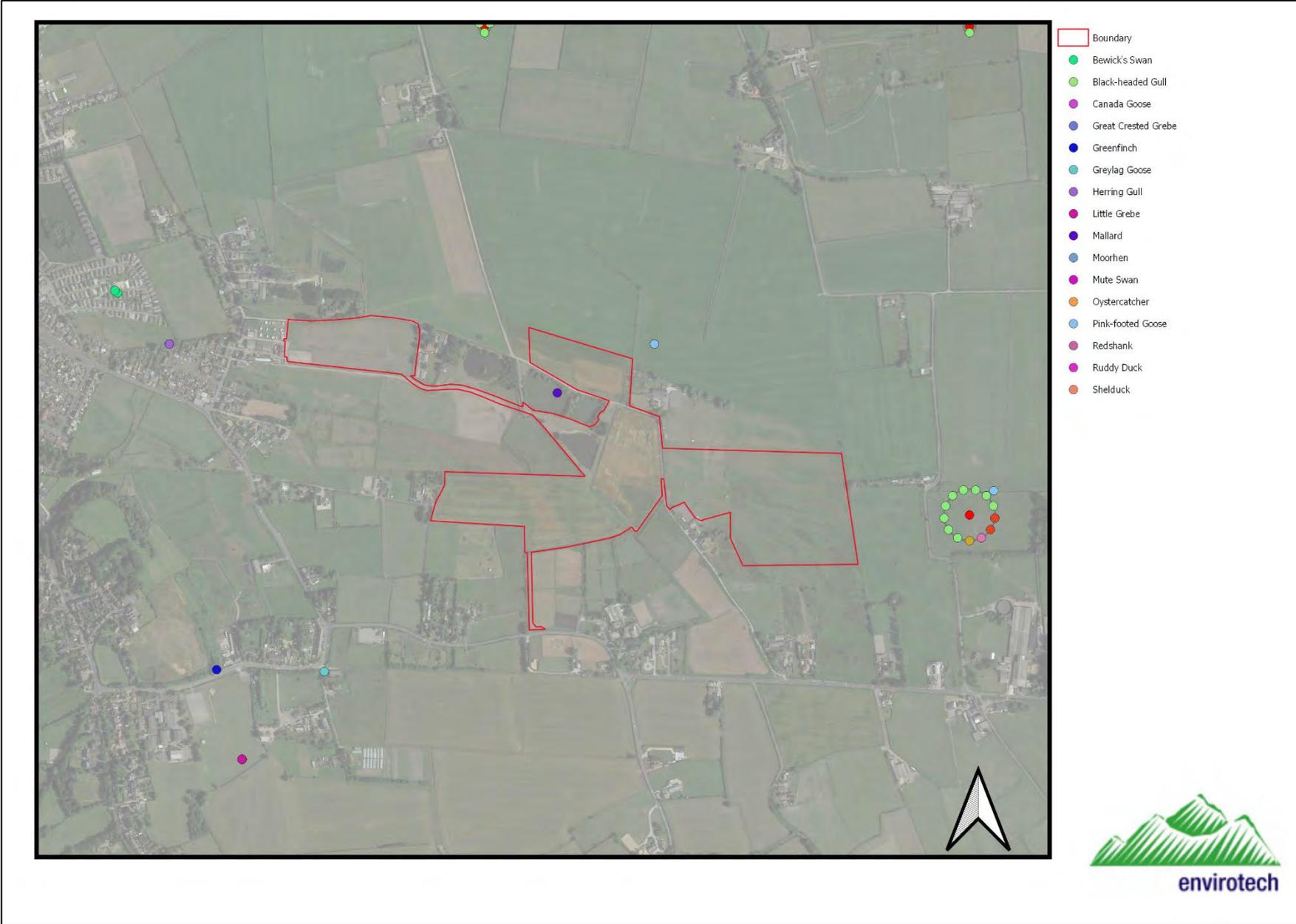
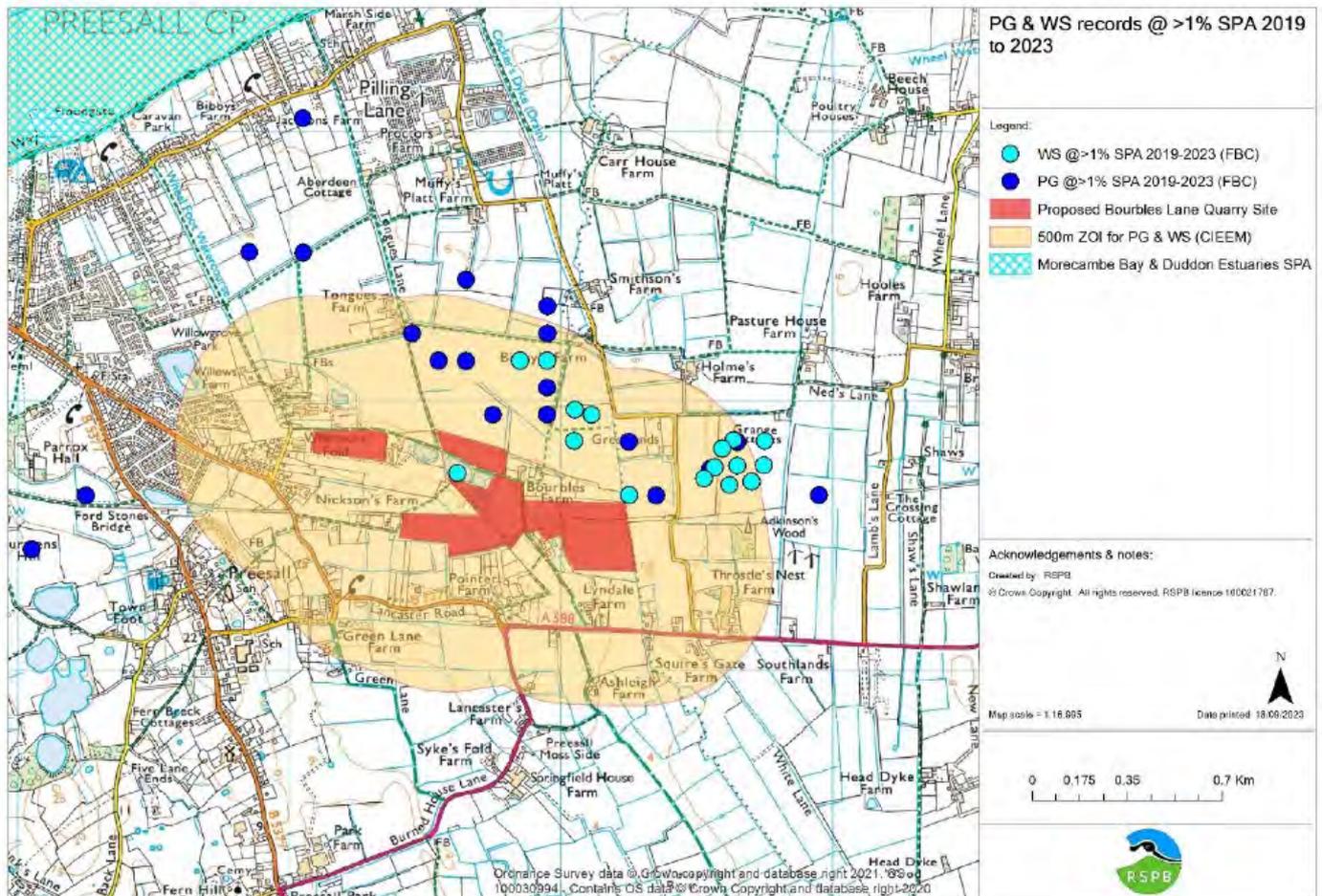


Figure 3- BTO, RSPB, NE and LERN Records

In its response to a previous submission of bird survey data for this site the RSPB compiled a table of Pinkfooted Geese and Whooper Swan peak counts within 500m of the boundary along with the % of the SPA peak count. This document, held on the public record as part of the planning application documentation, is part reproduced on map and Table 2. These records were cross referenced with updated Fylde Bird Club records in May 2024.



Species	Peak count	SPA Peak Count	% of SPA population	GB max	% of GB
Pink-footed Goose	7,000 <sup>7</sup>	15,648	44	450,779	0.6
Whooper Swan	78 <sup>8</sup>	113	69	8,667	0.8

Table 2 - RSPB mapped FBC records and peak counts

Bird surveys had previously been undertaken at the site on 31<sup>st</sup> January 2019 (Sunset), 22<sup>nd</sup> February 2019 (Sunset), 4<sup>th</sup> March 2019, 22<sup>nd</sup> January 2021 (Dawn) and 2<sup>nd</sup> February 2021 (Sunset). The surveys were to a smaller area of the site than the current proposal covers and were undertaken by slowly walking between each of the Vantage Points used in the 2022/23 surveys and recording all bird species. This data provides context for the surveys in 2022/23. Peak numbers of each bird species are shown in Table 3.

BH	Black headed gull	150
B.	Blackbird	4
C.	Carrion crow	15
CA	Cormorant	2
DV	Little Egret	1
GT	Great tit	1
HG	Herring gull	45
JD	Jackdaw	80
L.	Lapwing	28
MA	Mallard	85
MA	Mallard	1000+ (estimate) in rearing field
MH	Moorhen	3
MS	Mute swan	18
OC	Oystercatcher	2
PG	Pinkfooted geese	(commuting over site) – 2000
R.	Robin	3
SU	Shelduck	28
SG	Starling	35
WS	Whooper swan	4
WP	Woodpigeon	4

Table 3- Bird surveys peak counts from 2019 and 2021

## **Field Survey**

A drone was overflown on the 7<sup>th</sup> March 2023 at the end of the field surveys. This produced a number of images which were stitched together to form an orthomosaic map and provided upto date imagery of the site from which the areas of standing water on site over winter could be calculated. Figure 4 shows the hi-resolution imagery and three areas of standing water in field. All of these areas are very small in nature. Area 1 is a result of overflowing drinkers within a duck rearing pen. Area 2 and 3 appear ephemeral in nature. There are in addition three large lakes within and adjacent the redline boundary and small ponds in the local landscape.

The Zone of Influence (Zol) is the area across which impacts may occur as a result of the proposal. In respect of the field surveys and determination of the Zol, the area to be assessed was made on the basis of line of sight and perceived background levels of disturbance.

Figure 5 shows the Zol.

Area 1 is within the site boundary and is fully within the ZOI.

Area 2 is directly to the North-east. It is a contiguous block of open grassland bound by tree lines and hedges. There is line of sight from the application boundary onto this land and it is currently subject to a low level of anthropogenic disturbance. Boundary areas to these fields are too close to houses/ farmsteads for use by wildfowl/ waders which tend to feed in more open landscapes. These areas are therefore outside the Zol.

Area 3 are small, enclosed fields as well as being in proximity to houses and farmsteads. Larger hedgerows bounding these fields provide a more enclosed landscape with reduced potential for use by wildfowl/ waders and are subject to higher levels of existing anthropogenic disturbance.

Area 4 is a lake. It has potential for use by wildfowl/ waders but is subject to high levels of existing anthropogenic disturbance. Work on the site is unlikely to add to disturbance levels which would result in displacement of birds from the waterbody. Birds using the water body will already be subject to high levels of anthropogenic disturbance. Use of the waterbody may however be complimentary to use of the site and as such birds on the waterbody were also assessed.

Area 5 is grassland which is screened from the site by hedges and a main road. This will provide both a visual and acoustic barrier to site works and as such a disturbance is unlikely due to site works.

Area 6 is grassland which is screened from the site by hedges and distance. This will provide both a visual and acoustic barrier to site works and as such a disturbance is unlikely due to site works

Birds within and adjacent to the ZOI were recorded during vantage point and walkover surveys. Birds outside the Zol were recorded by drone survey once the VP and transect surveys were completed. This was so that drone flight would not disturb birds prior to survey. Records from drone are not subject to the same degree of accuracy and smaller birds may be missed or miss-recorded due to distance.

The Vantage Point and Transect route is shown on Figure 5. The transect route brought all areas of the ZOI within 500m of either the VP or transect route which in accordance with Gilbert et al (1998) and Natural England (2010) and is the maximum distance at which surveys should be undertaken being the effective range of binoculars. At this site a telescope was also used which provided additional range, but the 500m guidelines were still followed.

Table 3 shows drone imagery taken during assessment of land outside the Zol but near the site at the end of the survey period. These drone flights were to assess the wider landscape for wildfowl use.

Survey results from the 2022/23 surveys were tabulated (Table 5) and a map produced for each survey Figure 6- 11.



Site from 120m altitude over Zol to the East



Site from 120m altitude looking to the West



Site from 120m altitude looking North



Site from 120m altitude looking North (during cold weather)



Site from 120m altitude looking East- Whooper swan can be seen in the ZOI (arrowed)

Birds did not take flight during the drone survey and this was an effective tool to count birds outside the site boundary and in the wider landscape

*Table 4- Drone imagery of Site, Zol and adajcent land*



Figure 4- Standing water

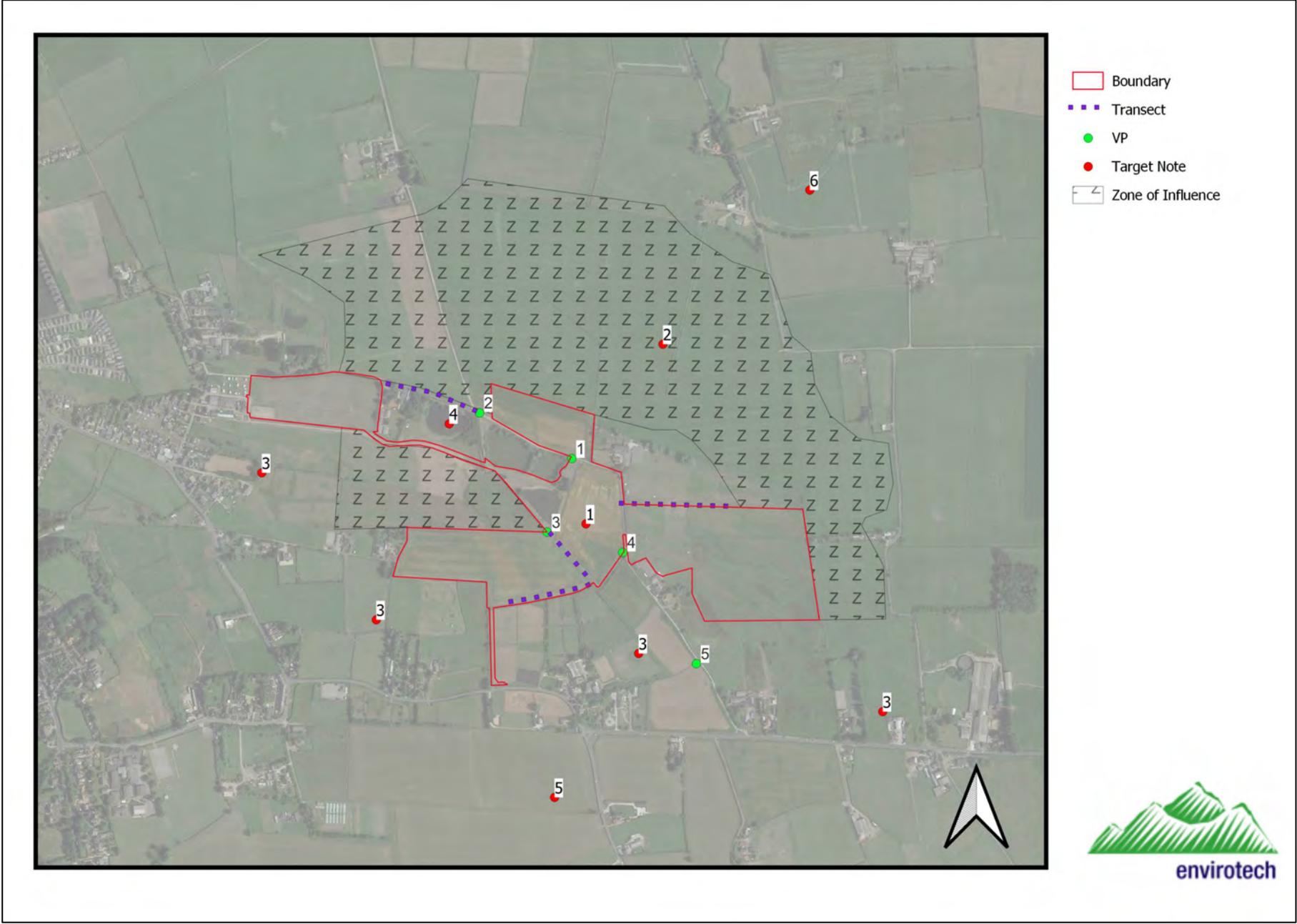


Figure 5- Site and Zone of Influence



-  Boundary
- Legend**
-  BOCC Amber
-  BOCC Green
-  BOCC Red
-  Schedule 1
-  BH Black-headed Gull
-  MA Mallard
-  L. Lapwing
-  PG Pink-footed Goose
-  T. Teal

Figure 6  
 Bird Survey  
 27th Oct 2022





- Boundary
- Legend
- BOCC Amber
  - BOCC Green
  - BOCC Red
  - Schedule 1
  - MA Mallard
  - CO Coot
  - LB Lesser Black-backed Gull

Figure 7  
 Bird Survey  
 27th Nov 2022





- Boundary
- MA Mallard
- BH Black-headed Gull

Figure 8  
Bird Survey  
14th Dec 2022





-  Boundary
-  BOCC Amber
-  BOCC Green
-  BOCC Red
-  Schedule 1
-  WS Whooper Swan
-  CO Coot
-  L. Lapwing
-  MA Mallard
-  SU Shelduck

Figure 9  
 Bird Survey  
 16th Jan 2023





-  Boundary
-  BOCC Amber
-  BOCC Green
-  BOCC Red
-  Schedule 1
-  L. Lapwing
-  SU Shelduck
-  OC Oystercatcher

Figure 10  
Bird Survey  
15th Feb 2023





-  Boundary
-  BOCC Amber
-  BOCC Green
-  BOCC Red
-  Schedule 1
-  WS Whooper Swan
-  MA Mallard
-  OC Oystercatcher

Figure 11  
 Bird Survey  
 7th March 2023



		Date	27/10/2022	24/11/2022	14/12/2022	16/01/2023	15/02/2023	07/03/2023
Common name	Scientific name	Weather/ Conservation status	80% cloud, light wind, 10 degrees. 8am. Mid tide	80% cloud, light wind. 8 degrees. 8:30am. Mid tide	0% cloud, light wind, 1 degrees, frosty. 11am. Low tide	10% cloud, no wind, 2 degrees. Low tide 10pm	10% cloud, light wind, 8 degrees. Low tide 9am	10% cloud, no wind, 10 degrees. Low tide 11:30am.
Black headed gull	Chroicocephalus ridibundus	BoCC:Amber	2	-	3	-	-	-
Coot	Fulica atra	BoCC:Green		2	-	2	-	-
Lapwing	Vanellus vanellus	BoCC:Red; UKBAP, Lancashire Key Species	62	-	-	10	8	-
Lesser black-backed gull	Larus fuscus	BoCC:Amber	-	2	-	-	-	-
Mallard	Anas platyrhynchos	BoCC:Amber	35	17	50	15	-	15
Oystercatcher	Haematopus ostralegus	BoCC:Amber, Lancashire Key Species	-	-	-	-	2	2
Pinkfooted Goose	Anser brachyrhynchus	BoCC:Amber	150	-	-	-	-	-
Shelduck	Tadorna tadorna	BoCC:Amber		-	-	8	3	-
Teal	Anas crecca	BoCC:Amber	2	-	-	-	-	-
Whooper Swan	Cygnus cygnus	BoCC:Amber	-	-	-	1	-	5

Table 5- Birds recorded within site boundary and Zol- Yellow = number above 1% of SPA population

Survey results from the 2023/24 surveys were tabulated (Table 6) and a map produced for each survey Figure 12- 23.



Site Boundary

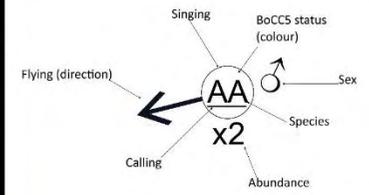


Figure 12

Bird Survey

28/9/2023



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Site Boundary

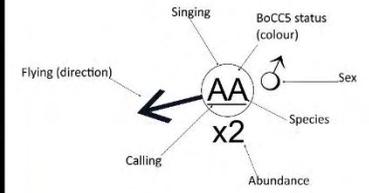


Figure 13

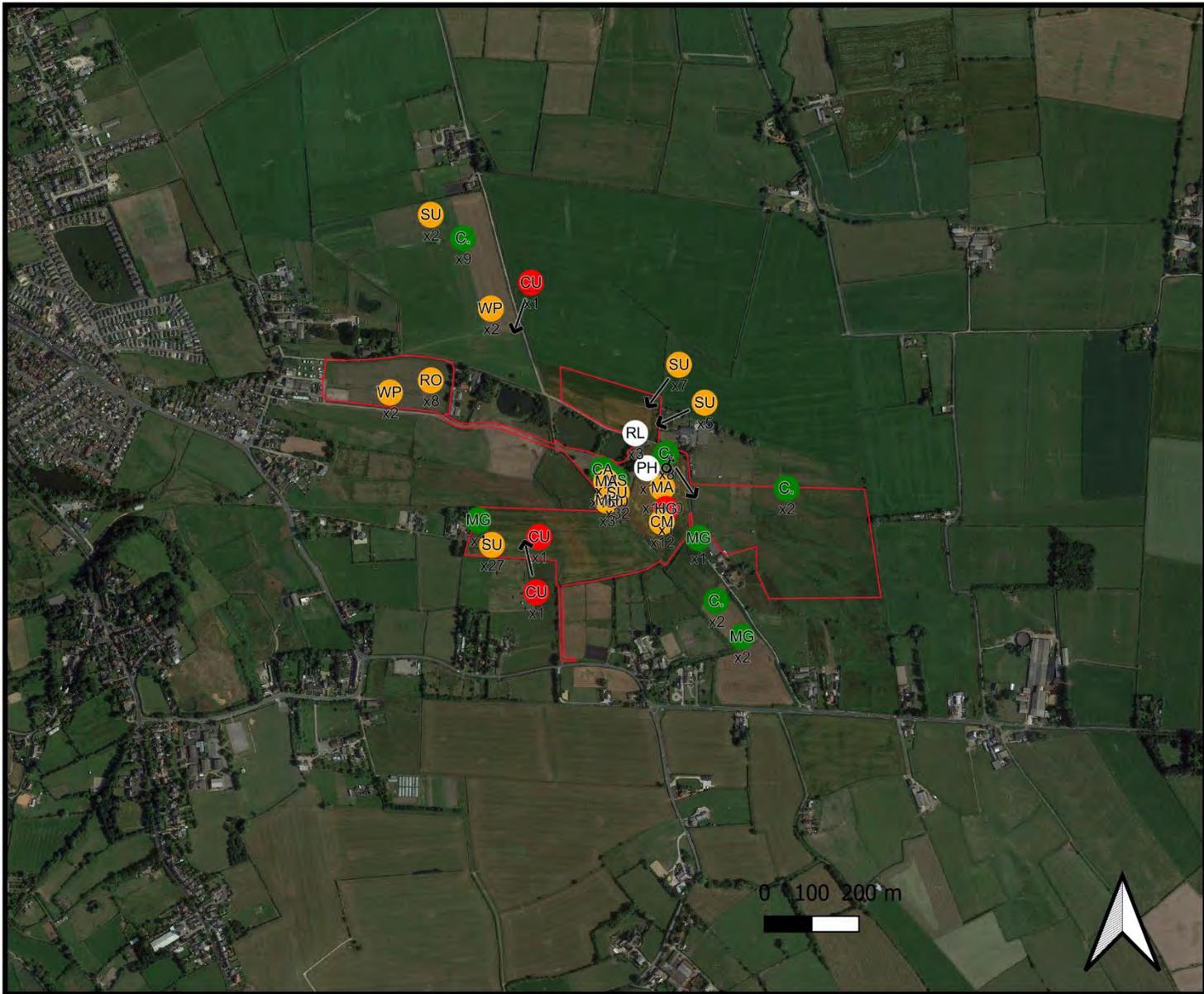
Bird Survey

12/10/2023



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Site Boundary

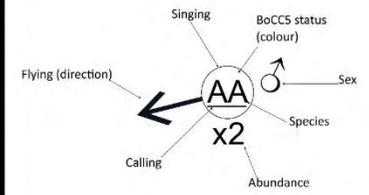


Figure 15

Bird Survey

09/11/2023



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Figure 15a

Bird Survey

09/11/2023





Site Boundary

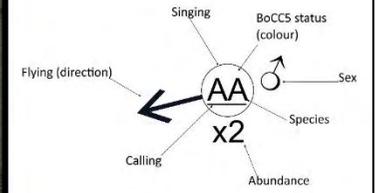


Figure 15b

Bird Survey

09/11/2023





Site Boundary

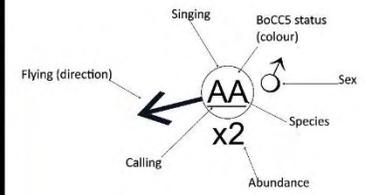


Figure 16

Bird Survey

08/12/2023



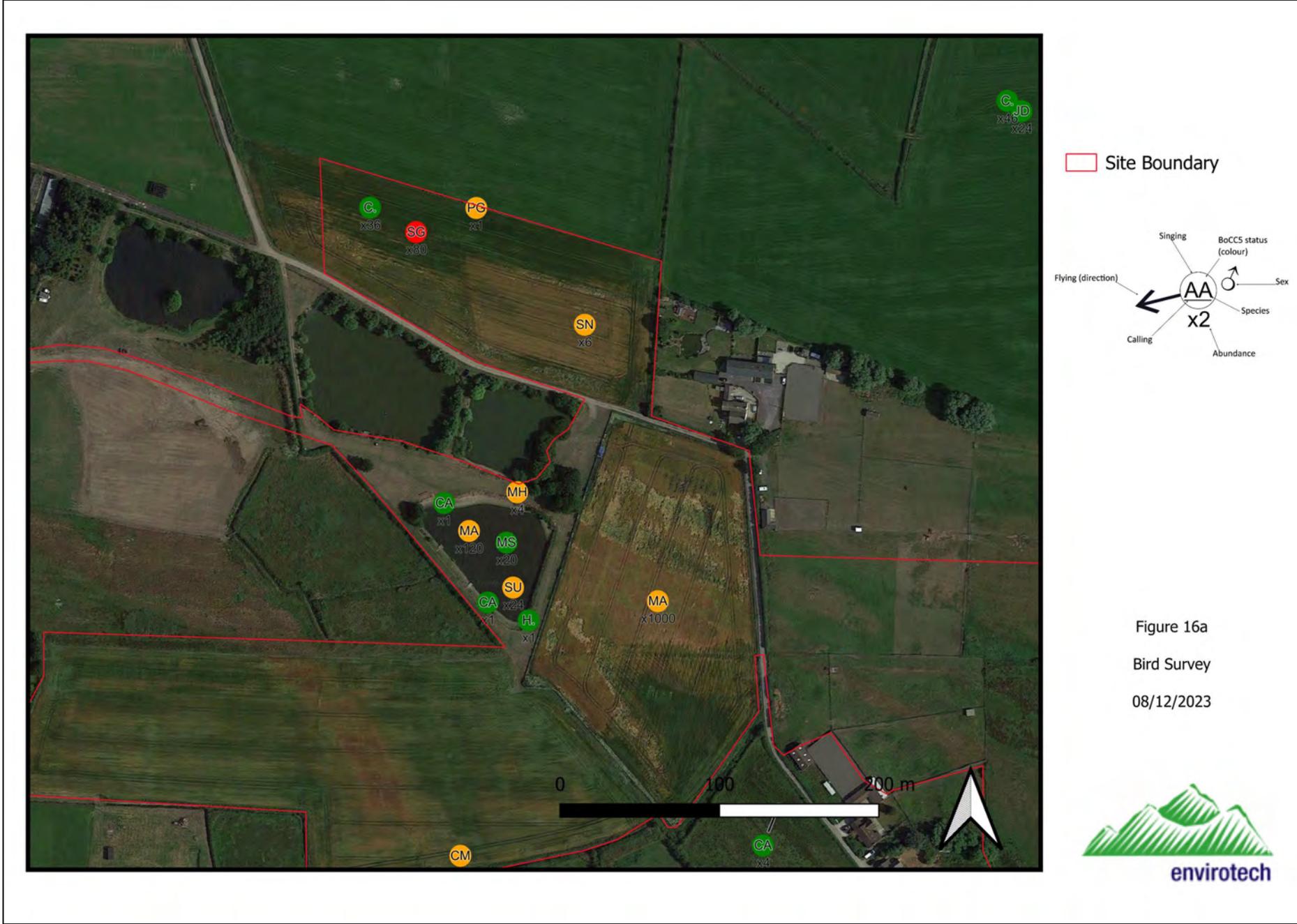


Figure 16a  
 Bird Survey  
 08/12/2023





Site Boundary

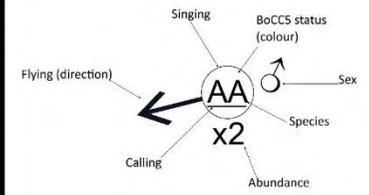


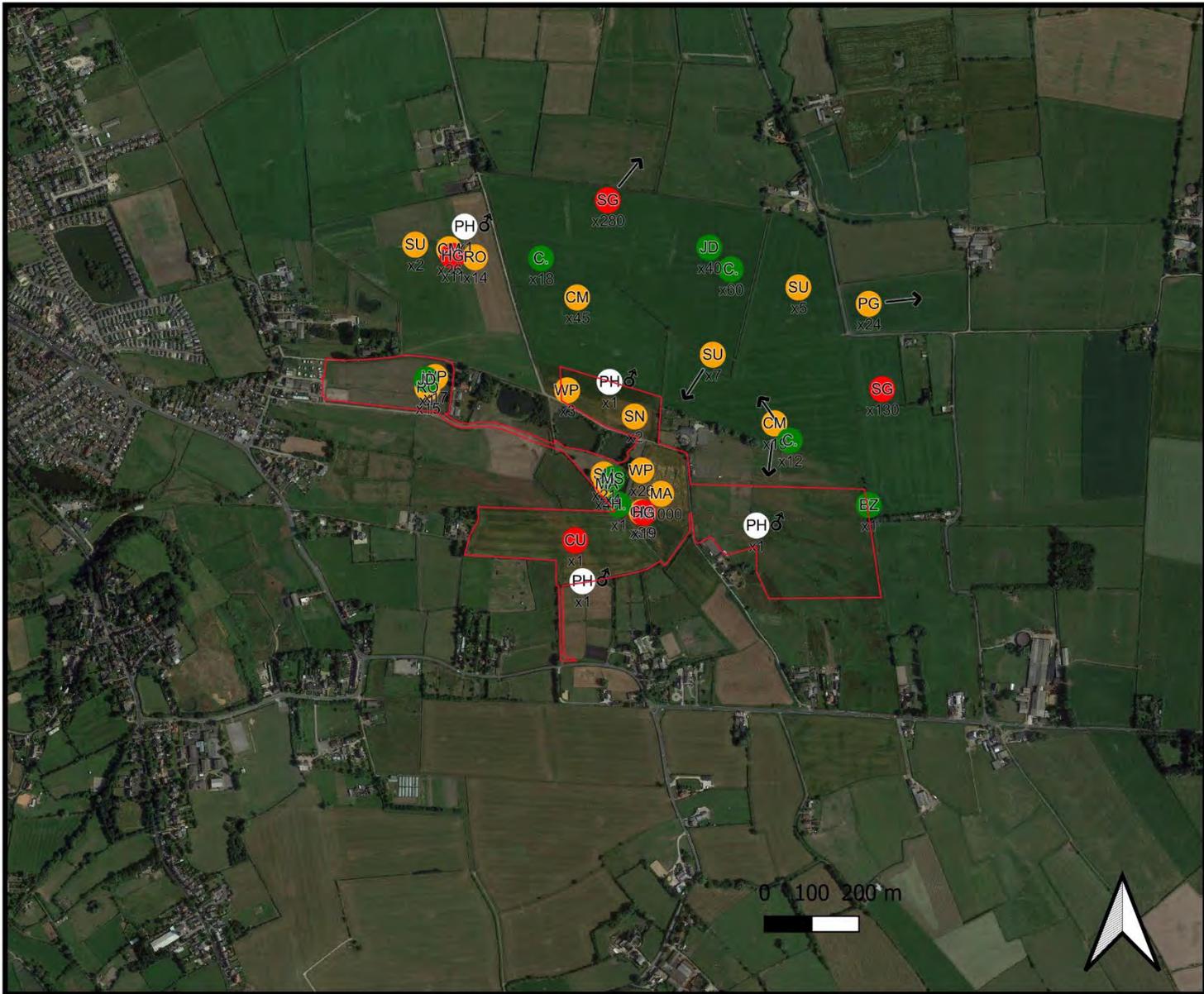
Figure 17

Bird Survey

20/12/2023



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Site Boundary

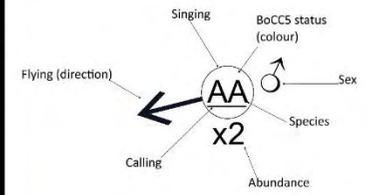
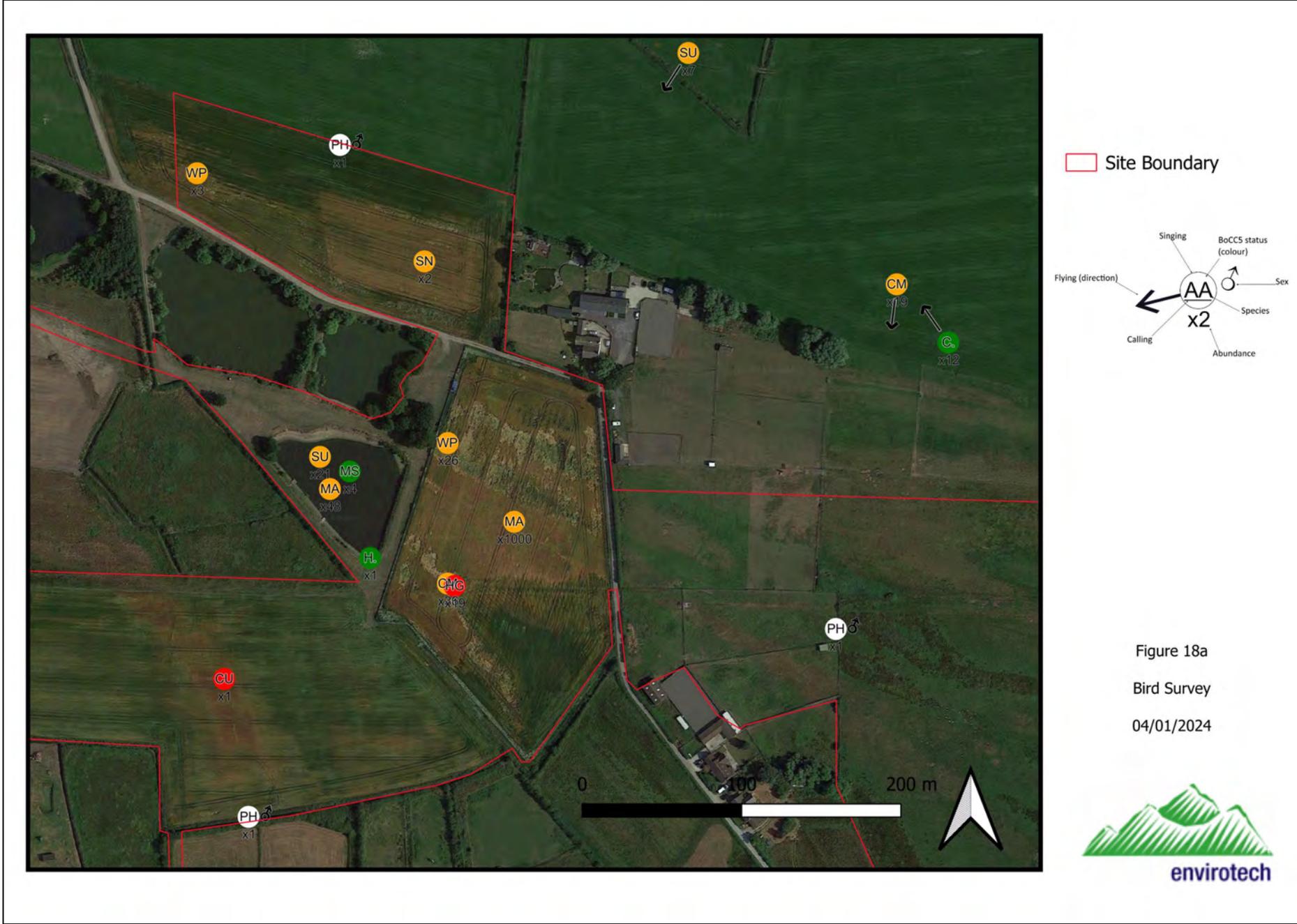


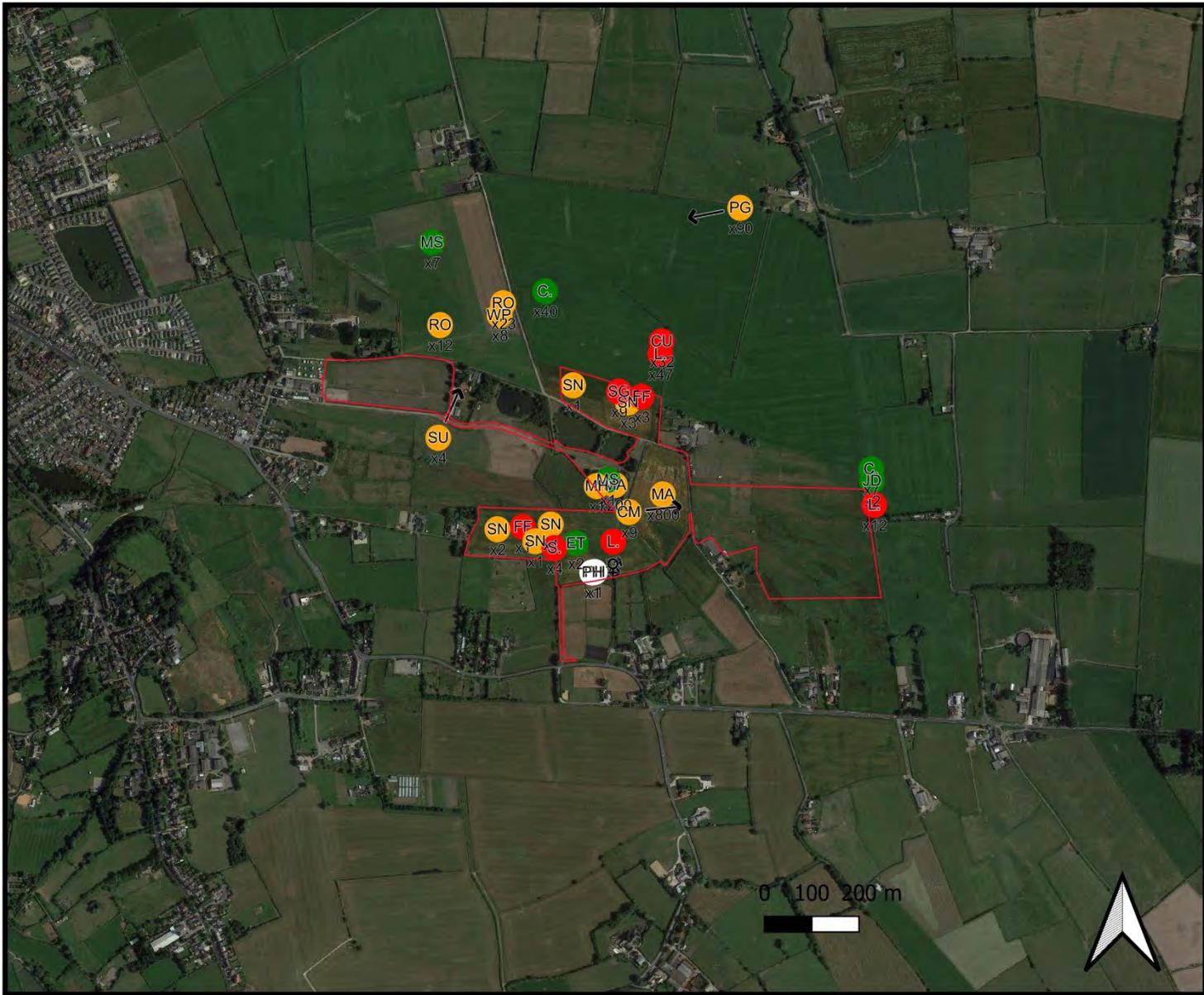
Figure 18

Bird Survey

04/01/2024







Site Boundary

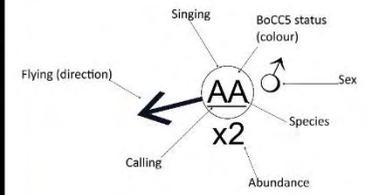


Figure 19

Bird Survey

18/01/2024





Site Boundary

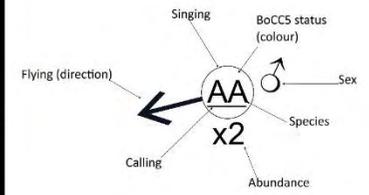


Figure 20

Bird Survey

01/02/2024



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Site Boundary

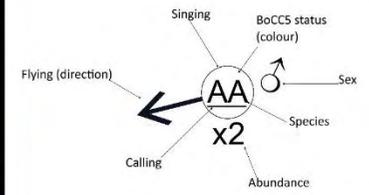


Figure 20a

Bird Survey

01/02/2024









□ Site Boundary

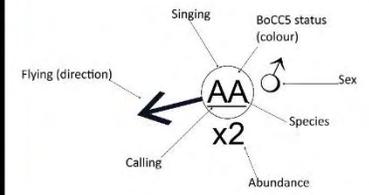


Figure 22

Bird Survey

29/02/2024





Site Boundary

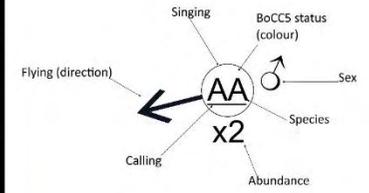


Figure 23

Bird Survey

14/03/2024



		Date	28/9/2023	12/10/2023	26/10/2023	09/11/2023	08/12/2023	20/12/2023	04/01/2024	18/01/2024	01/02/2024	13/02/2024	29/02/2024	14/03/2024
Common name	Scientific name	Weather/ Conservation status	80% cloud, light wind, 18 degrees. 9am. High tide	50% cloud, light wind. 12 degrees. 9:30am. Rising tide	100% cloud, light wind, 12 degrees, 9am. High tide	50% cloud, windy, 6 degrees, 11:30am. Falling tide	100% cloud, light wind, 8 degrees, 10am. Falling tide	100% cloud, light wind, 6 degrees, 1pm. Low tide	100% cloud, light wind, 6 degrees, 10am. Low tide	100% cloud, light wind, - 1 degrees, 11:30am. Low tide	80% cloud, light wind, - 4 degrees, 11am, Riding tide	80% cloud, light wind, - 10 degrees, 12:30. Rising tide	80% cloud, light wind, - 8 degrees, 11am. Rising tide	50% cloud, light wind, - 10 degrees, 10am. Rising tide
Black headed gull	Chroicocephalus ridibundus	BoCC:Amber										1	1	
Canada Goose	Branta canadensis	-											15	2
Common Gull	Larus Canus	BoCC:Amber		140	26	12	28	19	126	9	454	48		
Coot	Fulica atra	BoCC:Green			1							2	2	2
Cormorant	Phalacrocorax carbo	BoCC:Green				1	6							2
Curlew	Numenius arquata	BoCC:Red		85	3	50	1	371	1	32	20	3	3	16
Great Black-backed Gull	Larus marinus	BoCC:Amber									11			
Grey Heron	Ardea cinerea	BoCC:Green		1	1		1		1					
Greylag geese	Anser anser	BoCC:Amber	60											
Herring gull	Larus argentatus	BoCC:Red				1			30					
Lapwing	Vanellus vanellus	BoCC:Red; UKBAP, Lancashire Key Species		2						60		19	29	5
Little egret	Egretta garzetta	BoCC:Green				14				2				
Mallard	Anas platyrhynchos	BoCC:Amber	80	300	1118	1150	1120	1145	1048	1000	1071	1042	1042	14
Moorhen	Gallinula chloropus	-				3	4	3		1	2	2	2	1
Mute swan	Cygnus olor	BoCC:Green			9	20	20	11	4	8	4	5	5	
Oystercatcher	Haematopus ostralegus	BoCC:Amber, Lancashire Key Species									16	4	4	72
Pinkfooted Goose	Anser brachyrhynchus	BoCC:Amber	71		1		1		24	90	459			427
Shelduck	Tadorna tadorna	BoCC:Amber				73	24	20	35	4	6	2	2	2
Snipe	Gallinago gallinago	BoCC:Amber			1		6	13	2	8	1	4	4	13

Table 6- Birds recorded within site boundary and Zol- Yellow = number above 1% of SPA population

## ASSESSMENT

### **Site valuation**

A total of 22 species of wildfowl or wader used the site and ZOI during the surveys, seven of these are “wildfowl or waders” associated with the coastal SPA designated site.

The Peak SPA counts are taken from the 2017 citation, the peak counts of which differ from those of the Ramsar designation in 1996. The more current SPA counts are taken as the more representative species counts.

Common name	Scientific name	Peak Count	SPA Peak Count	% of SPA population
Lesser black-backed gull	Larus fuscus	2	9450	0.02
Oystercatcher	Haematopus ostralegus	72	55888	0.13
Pinkfooted Goose	Anser brachyrhynchus	459	15648	2.93
Shelduck	Tadorna tadorna	73	5878	1.24
Whooper Swan	Cygnus cygnus	5	113	4.42
Little egret	Egretta garzetta	14	134	10.45
Curlew	Numenius arquata	371	12209	3.04

**Table5- Peak Count of overwintering wildfowl and waders cited in SPA designation within or near ZOI**

The lakes and standing water were all frozen on the 14<sup>th</sup> December 2022 with waterfowl observed stood on the ice.

Slurry spreading had recently been undertaken on the 16<sup>th</sup> January 2023 across some of the fields in the ZOI which would render the fields less suitable for use by grazing waterfowl.

Most of the bird activity was recorded in the same three areas of the site being the lakes within and outside the site boundary, a duck rearing field and permanent pasture fields to the North outside the site boundary but in the ZOI.

There is use of a field on site as an overwintering pen for Mallard associated with operation of a gamefarm. Several thousand mallard (estimated) are overwintered in the pen which has an open top with drinkers and food fed at ground level. It was noted that there appears to be frequent flight into and out of this area by other wildfowl and wader species, likely attracted by artificial food supply. There are daily visits to the pen. Wildfowl to the lakes adjacent appear to have a high tolerance of human activity and do not take flight when human presence is observed to the sides of the lake.

It is expected that smaller birds as well as larger swans and geese would be visible from the drone at an altitude of 120m given the open landscape and short grass present outside the site boundary in the ZOI.

The locations groups of birds were found which were in excess of the 1% of SPA population on any one visit are shown on Figure 24.



Site Boundary

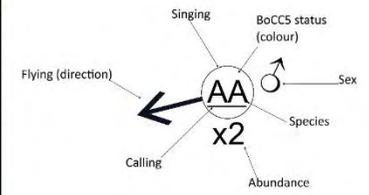


Figure 24  
Groups of birds with +1% of SPA population



More than 1% of the SPA population of Pinkfooted Geese and Whooper Swan were recorded outside the site boundary in the ZOI both by VP and drone survey to the North. More than 1% of the SPA population of Shellduck were recorded outside the site boundary in the ZOI to the North as well as on a lake inside the redline boundary and field to the South. These areas would all be directly or indirectly impacted by the proposal.

More than 1% of the SPA population of little egret was recorded 900m to the North of the redline boundary, viewed from the road. More than 1% of the SPA population of Curlew were recorded 200m to the South, also viewed from the road. These fields would not be directly or indirectly impacted by the proposal being sufficiently isolated from the site by distance and or busy roads and hedges.

### ***Impact assessment***

Use of the site appears focussed on the lakes and there appears to be a high level of tolerance of anthropogenic activity given the frequent disturbance of the lakes and adjacent land with the overwintering of wildfowl in a pen.

The arable fields on site may provide a temporary food resource when the crop is recently harvested but this would be in the August/ September period too early to be of high value to overwintering wildfowl. Small numbers of Pinkfooted Geese were recorded on the stubbles in September 2023.

The grassland on site appears to be semi-improved with rush beds present and or enclosed by hedges. The sward length and enclosure would not provide ideal habitat for grazing overwintering wildfowl and no significant numbers of wildfowl were recorded on it.

Habitats within the site appear to be of low value in regards to avian use for overwintering birds.

In both the 2022/23 and 2023/24 season there was recorded use of fields outside the site boundary inside the ZOI to the North by Pinkfooted Geese and Whooper Swan. Numbers recorded were on occasion in excess of 1% of the SPA population. This is also reflected in the background records search.

In the 2023/24 season, a significant number of Shellduck were recorded using the ponds on site and adjacent fields. These did not take flight and as there is use of the ponds for fishing, this species is used to anthropogenic disturbance. There will be loss of one of the ponds to the proposal but recreation of additional wetland areas post works.

Significant numbers of little egret and curlew were recorded locally, but outside the ZOI.

The additional bird survey data derived from site assessment correlates with that provided by the records searches.

There will be partial loss of the site during work, with restoration ongoing. The creation of lakes and grassland would enhance the site for some species of wildfowl. Use of the site by larger geese and swans was not recorded and the increase in enclosure of the fields on site would therefore not impact these species.

The wider landscape will remain in the same land use throughout work and still available for use.

There may however be displacement of overwintering birds from fields to the East during work due to the increase in anthropogenic activity. Whilst birds using fields will become accustomed to such impact, short term, high impact noise impact may result in flight activity.

In particular impacts on Whooper Swan and Pink footed geese may be significant given that more than 1% of the overwintering population of the SPA were recorded within the ZOI.

Disturbance impacts on birds has been studied by Cutts, Hemingway and Spencer (2013). Their toolkit provides information on disturbance effects from a range of construction works to commonly encountered waterbirds on estuaries and other wetlands (for which there were observed behavioural responses).

Based on the observed responses of waterbirds (primarily Mallard and Redshank) to various noise stimuli, Cutts, Hemingway and Spencer (2013) state

“it has been possible to derive an overview table utilising the standard distance decay rates for noise. As such, it is possible to calculate the likely disturbance effect for a noise level and distance of receptor from source. E.g. plant generating 100dB(A) at around source will provide a likely ‘acceptable’ receptor dose of 70dB(A) at c. 20m distance, and a source of 90dB(A) would be below the impact threshold at c. 10m. Acceptable ‘dose’ levels (e.g. to 70dB(A) are shaded green with dark green unlikely to have any affect whilst the pale green might occasionally induce a low level behavioural response such as a heads-up; yellow to orange shading is where a response is likely but mitigation may be effective in reducing the disturbance risk; pale red where mitigation is necessary and might be of value, but with a remaining risk of effect; dark red where a flight response is almost certain to occur and would be increasingly difficult to mitigate through Simple screening etc and may require the cessation of works during high sensitivity periods. However, the level of effect will change slightly on a site per site basis due to differing ambient noise levels at a location” Figure 25.

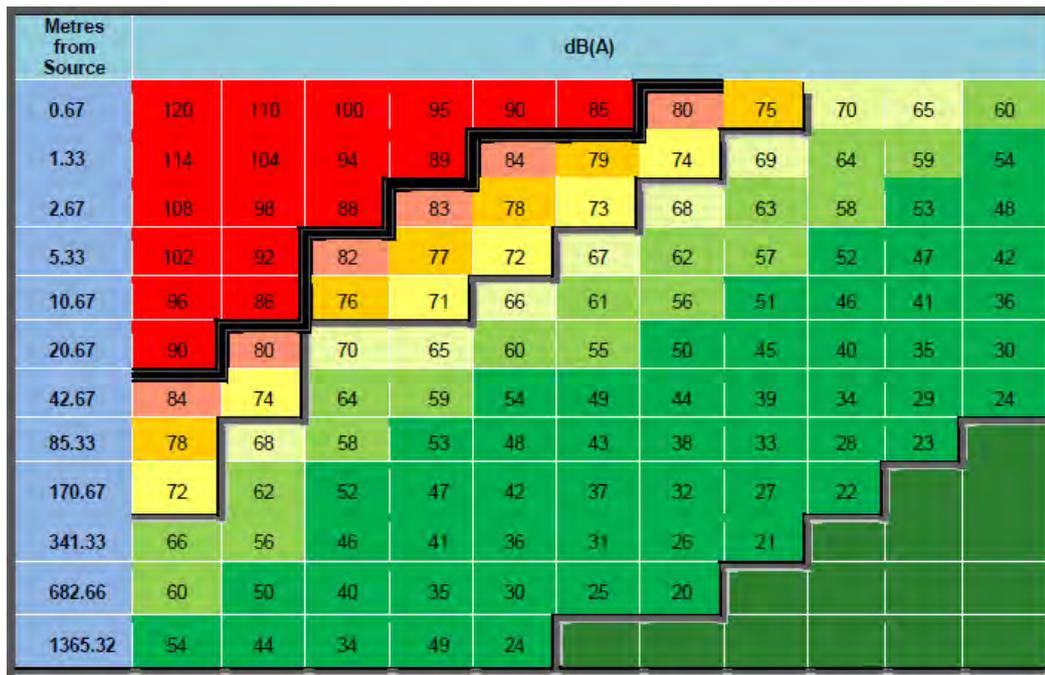


Figure 25- Observed responses of waterbirds (primarily Mallard and Redshank) to various noise stimuli, Cutts, Hemingway and Spencer (2013)

Noise modelling was undertaken of the proposed construction activities by Vibrock (2024). The prediction method used is based upon that outlined within Annex F of BS 5228- 1:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites. Part 1: Noise'. This guidance details methods to estimate noise from 'open sites' which can include quarries, waste disposal sites and long-term construction projects.

Noise modelling was undertaken for short term activities like some aspects of final restoration work and initial preparation works, such as soil stripping and bund formation, which are likely to have the highest noise impact due to their potential occurrence at or close to the site boundary and potentially unscreened from noise-sensitive premises in the vicinity, Figure 26.

Location	Phase	Predicted Worst Case Site Noise Level dB LAeq,1h free-field	Difference between Site Noise and 70 dB(A) Limit
Old Nickson's Cottage	A	46	-24
	1	52	-18
	2	45	-25
	3	43	-27
	4	45	-25
Whinmore Fold	A	41	-29
	1	57	-13
	2	43	-27
	3	41	-29
	4	43	-27

Location	Phase	Predicted Worst Case Site Noise Level dB $L_{Aeq,1h}$ free-field	Difference between Site Noise and 70 dB(A) Limit
Woodlands	A	44	-26
	1	69	-1
	2	45	-25
	3	44	-26
	4	45	-25
Red Lea	A	47	-23
	1	69	-1
	2	50	-20
	3	47	-23
	4	48	-22
Bourbles Farm	A	52	-18
	1	50	-20
	2	62	-8
	3	55	-15
	4	69	-1
Crossing Cottage	A	42	-28
	1	41	-29
	2	43	-27
	3	50	-20
	4	44	-26
Greenacres	A	42	-28
	1	38	-32
	2	40	-30
	3	48	-22
	4	40	-30
Lyndale Farm	A	44	-26
	1	40	-30
	2	42	-28
	3	49	-21
	4	43	-27
Mytax / New England Cottage	A	57	-13
	1	46	-24
	2	47	-23
	3	68	-2
	4	51	-19

Location	Phase	Predicted Worst Case Site Noise Level dB L <sub>Aeq,1h</sub> free-field	Difference between Site Noise and 70 dB(A) Limit
Hillfield House / Pointer Farm	A	53	-17
	1	47	-23
	2	47	-23
	3	49	-21
	4	48	-22
The Beeches	A	52	-18
	1	49	-21
	2	49	-21
	3	49	-21
	4	49	-21
Ourome	A	67	-3
	1	49	-21
	2	47	-23
	3	45	-25
	4	47	-23

Figure 26 Short term activities noise levels are receptors

The table above demonstrates that potential noise levels from short-term activities are expected to remain within the temporary daytime limit of 70 dB recommended within PPG-Minerals and the threshold for disturbance impacts on overwintering birds.

Noise modelling was undertaken for long term, normal activities, Figure 27.

Location	Phase	Predicted Worst Case Site Noise Level dB LAeq,1h free-field	Background Noise Level	Difference between site Noise and Background Level	Difference between Site Noise and 55 dB(A) Limit
Old Nickson's Cottage	A	39	42	-3	-16
	1	48		+6	-7
	2	43		+1	-12
	3	43		+1	-12
	4	43		+1	-12
Whinmore Fold	A	38	42	-4	-17
	1	46		+4	-9
	2	40		-2	-15
	3	41		-1	-14
	4	41		-1	-14
Woodlands	A	37	40	-3	-18
	1	53		+13	-2
	2	39		-1	-16
	3	38		-2	-17
	4	38		-2	-17
Red Lea	A	41	40	+1	-14
	1	52		+12	-3
	2	48		+8	-7
	3	44		+4	-11
	4	46		+6	-9
Bourbles Farm	A	45	40	+5	-10
	1	45		+5	-10
	2	49		+9	-6
	3	48		+8	-7
	4	53		+13	-2
Crossing Cottage	A	34	38	-4	-21
	1	40		+2	-15
	2	40		+2	-15
	3	41		+3	-14
	4	37		-1	-18

Location	Phase	Predicted Worst Case Site Noise Level dB $L_{Aeq,1h}$ free-field	Background Noise Level	Difference between site Noise and Background Level	Difference between Site Noise and 55 dB(A) Limit
Greenacres	A	36	47	-11	-19
	1	38		-9	-17
	2	38		-9	-17
	3	45		-2	-10
	4	38		-9	-17
Lyndale Farm	A	38	47	-9	-17
	1	40		-7	-15
	2	40		-7	-15
	3	46		-1	-9
	4	40		-7	-15
Mytax / New England Cottage	A	46	43	+3	-9
	1	45		+2	-10
	2	46		+3	-9
	3	51		+8	-4
	4	47		+4	-8
Hillfield House / Pointer Farm	A	46	43	+3	-9
	1	47		+4	-8
	2	47		+4	-8
	3	47		+4	-8
	4	47		+4	-8
The Beeches	A	48	43	+5	-7
	1	48		+5	-7
	2	48		+5	-7
	3	48		+5	-7
	4	48		+5	-7
Ourome	A	44	37	+7	-11
	1	47		+10	-8
	2	46		+9	-9
	3	45		+8	-10
	4	46		+9	-9

Figure 27 Long term activities noise levels are receptors

The worst-case approach to the calculation of noise levels from the proposed development should be noted and in reality site activities likely to generate noise levels that are in excess of 10 dB above the background noise levels will be infrequent and short-lived.

The modelled receptor sites are shown on Figure 28



Figure 28- Noise receptor sites

In respect of impacts on overwintering birds, the receptor site at Bourbles Farm is to the site Boundary of Phase 2 and would be representative of noise levels, potential disturbance events, to Whooper Swan using the fields to the North of Phase 2.

Peak temporary noise events at the boundary to Phase 2 would be 69dB. Long term noise events would be 53dB.

69dB is on the threshold described by Cutts, Hemingway and Spencer (2013) as triggering a potential disturbance response, but is still within the acceptable "green zone".

53dB is well within the acceptable level of noise which should not trigger a disturbance response.

Whilst each species of bird has a different threshold for a disturbance response, Cutts, Hemingway and Spencer (2013) do not provide individual values for Whooper Swan and as such the general thresholds shown in Figure 13 are used.

Whilst noise is unlikely to result in a disturbance response, visual stimuli cannot be discounted. Habituation of birds to site activity is however likely, given the frequent passage of road and agricultural vehicles in the local area.

The proposed mineral extraction works are proposed to take place over relatively short periods of time when the gravel will be excavated and placed in large stockpiles next to the plant.

Due to the winter weather these works are likely in the spring- summer months so are not likely to have an impact on overwintering birds. Precautionary mitigation is however suggested, at the

most sensitive times of year and weather conditions for wildfowl in relation to site works in Phase 2.

There will be loss of a pond used by significant numbers of shelduck during construction as well as a field adjacent, which will be used for processing. Shelduck appear to favour one of the ponds, which is shallower, and not surrounded by trees. There would likely be short term displacement of this species from the site, which would require the post works landscape scheme to incorporate an open wetland area, to compensate for that which is lost.

## REFERENCES

Natural England (2010) Natural England Technical Information Note TIN069 First edition 7th January 2010 Assessing the effects of onshore wind farms on birds

N Cutts K Hemingway & J Spencer Version (2013) Waterbird Disturbance Mitigation Toolkit Informing Estuarine Planning & Construction Projects

Gilbert G., Gibbons D.W. and Evans J. (1998) Bird Monitoring Methods. RSPB

Vibroch (2024) Noise Assessment Regulation 25 Submission - Request for Further Information Proposed Mineral Extraction and Restoration, Land off Bourbles Lane, Preesall, Lancashire  
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