

Client Name: Roger Bracewell (GA Petfoods)

Site Name: Asland Walks

Project Ref: GAPet-794-3213

Date: 12th January 2024

Summary of winter bird surveys and a preliminary assessment of Functionally Linked Land

The results presented in this technical note concern the surveys completed in 'winter 1' (September 2022- March 2023) and partially complete, and ongoing, in 'winter 2' (September 2023-December 2023). This information presented is to be considered an interim survey summary which includes survey data taken from the Ornithological Baseline Report version 1 (dated 28th November 2023), and produced by Avian Ecology Ltd.

The 'Target Species' regarded in this document are those which are qualifying features of the Special Protection Areas (SPAs): Ribble and Alt Estuaries and Martin Mere SPA and Ramsar.

Surveys concentrated on three separate areas termed: 'the Site' (an area of approximately 38ha), 'Mitigation Area 1' (an area of approximately 80ha) and 'Mitigation Area 2' (an area of approximately 77ha).

Those in-flight records, those >600m from the 'Site'/'Mitigation Area 1'/'Mitigation Area 2' have been omitted from this analysis. No SPA species were recorded to land within the Site during Vantage Point surveys.

Those Target Species which are alone SPA qualifying species are marked in **bold** in the tables in this technical note¹.

For those alone qualifying species, functional linked land (FLL) would be indicated by the field/area supporting $\geq 1\%$ of SPA population using the BTO WeBS 5-yr mean².

For those Target Species which only qualify as part of the assemblage or 'other' in **Table 2** FLL would be indicated by the field/area supporting $\geq 1\%$ of national (GB) population (taken from Woodward *et al.* 2020³) or $\geq 2,000$ birds.

A site can be considered as functionally linked, if two thirds of the surveys record at least one qualifying species exceeding the FLL threshold. This also applies to those species listed within the waterbird assemblage.

In order to regard a worst-case scenario, the results are presented separately for 'the Site', the 'Mitigation Area A', the 'Mitigation Area B', and each '600m buffer zone' from boundaries of the Site, and Mitigation Areas A and B, with counts in all fields combined per visit, for the respective separates areas. This was based on communications with Natural England on a similar project where they

¹ Note some species are alone qualifying for a SPA but for example only part of the qualifying waterbird assemblage for the other SPA.

² <https://app.bto.org/webs-reporting/principal.jsp>

³ <https://www.bto.org/sites/default/files/publications/apep4-population-estimates-birds-great-britain-uk-2020.pdf>

wanted the Site considered as a whole rather than counts in individual fields. Note, counts from small ponds associated with fields are combined.

In the tables 'RAE SPA' refers to Ribble and Alt Estuaries SPA and 'MM SPA' to Martin Mere SPA.

Winter Walkover Surveys

2022-2023 Wintering Bird Surveys (Winter 1)

Table 1.1: Target Species recorded within the Site (Fields Combined per visit).

Species	Survey Visits														Alone SPA species meet FLL criteria during any visit?	Assemblage SPA species meet any of FLL criteria during any visit?
	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Lapwing	-	-	11	-	-	-	67	-	26	-	23	-	20	12		No
Mallard	-	-	-	4	-	-	-	-	-	-	-	-	-	2		No
Oystercatcher	-	-	-	-	-	-	-	-	-	-	-	2	2	2	No (RAE SPA)	No
Pink-footed goose	-	-	-	-	-	11	-	-	-	6	-	-	-	-	No (RAE SPA/ MM SPA)	No
Shelduck	-	-	-	-	-	-	-	-	-	-	-	4	10	-	No (RAE SPA)	No
Whooper swan	-	-	152	-	-	-	-	-	-	-	-	-	-	-	Yes (both RAE SPA/ MM SPA)	No

Table 1.2: Target Species recorded in the 600m Buffer Zone around Site (Fields Combined per visit).

Species	Survey Visits														Alone SPA species meet FLL criteria during any visit?	Assemblage SPA species meet any of FLL criteria during any visit?
	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Lapwing	-	-	-	-	-	-	-	14	-	-	-	-	-	-		No
Mallard	-	-	-	18	-	6	30	-	-	4	-	-	-	1		No
Oystercatcher	-	-	-	-	-	-	-	-	-	-	-	2	2	3	No (RAE SPA)	No
Pink-footed goose	-	-	-	-	58	-	-	-	-	-	-	-	-	-	No (RAE SPA/ MM SPA)	No

Species	Survey Visits														Alone SPA species meet FLL criteria during any visit?	Assemblage SPA species meet any of FLL criteria during any visit?
	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Redshank	-	-	-	-	-	-	-	-	-	-	-	1	-	-	No (RAE SPA)	No
Shelduck	-	-	-	-	-	-	-	-	2	-	-	-	-	-	No (RAE SPA)	No
Teal	-	-	-	-	-	-	-	-	-	-	14	-	-	-	No (RAE SPA/MM SPA)	No
Whooper swan	-	-	138	-	7	-	-	8	9	-	-	-	-	-	Yes (both RAE SPA/MM SPA)	No

Table 1.3: Target Species recorded within the Mitigation Area 1. (Fields combined per visit)

Species	Survey Visits													Alone SPA species meet FLL criteria during any visit?	Assemblage SPA species meet any of FLL criteria during any visit?
	1	2	3	4	5	6	7	8	9	10	11	12	13		
Lapwing	-	-	-	-	-	-	-	-	-	-	-	-	8		No
Shelduck	-	-	-	-	-	-	-	-	-	-	-	-	8	No (RAE SPA)	No
Whooper swan	-	-	-	-	-	23	157	-	-	-	-	-	-	Yes (both RAE SPA/MM SPA)	No

Table 1.4: Target Species recorded within 600m of Mitigation Area 1. (Fields combined per visit)

Species	Survey Visits													Alone SPA species meet FLL criteria during any visit?	Assemblage SPA species meet any of FLL criteria during any visit?
	1	2	3	4	5	6	7	8	9	10	11	12	13		
Curlew	-	-	-	-	-	-	-	-	-	-	56	-	12		No
Lapwing	-	-	-	-	-	136	50	-	76	65	50	17	10		No
Mallard	-	-	-	-	-	-	-	-	-	-	-	4	-		No

Species	Survey Visits													Alone SPA species meet FLL criteria during any visit?	Assemblage SPA species meet any of FLL criteria during any visit?
	1	2	3	4	5	6	7	8	9	10	11	12	13		
Oystercatcher	-	-	-	-	-	-	-	-	-	-	2	6	2	No (RAE SPA)	No
Shelduck	-	-	-	-	-	-	-	-	-	-	-	4	31	No (RAE SPA)	No
Teal	-	-	-	-	-	18	-	-	8	4	-	-	-	No (RAE SPA/ MM SPA)	No
Whooper swan	-	3	-	-	-	190	109	28	-	36	30	78	-	Yes (both RAE SPA/ MM SPA)	No

Table 1.5: Target Species recorded within the Mitigation Area 2. (Fields combined per visit)

Species	Survey Visits													Alone SPA species meet FLL criteria during any visit?	Assemblage SPA species meet any of FLL criteria during any visit?
	1	2	3	4	5	6	7	8	9	10	11	12	13		
Curlew	-	-	-	-	-	-	5	5	-	-	-	26	14		No
Golden plover	-	-	-	-	-	171	-	-	-	-	-	-	-	Yes (RAE SPA)	No
Lapwing	-	-	-	-	-	126	-	26	11	-	18	26	-		No
Mallard	-	-	-	-	-	-	4	-	-	-	-	-	-		No
Oystercatcher	-	-	-	-	-	-	-	-	-	-	1	4	4	No (RAE SPA/ MM SPA)	No
Pink-footed goose	-	-	2,068	767	-	-	2	22	18	-	-	-	-	Yes (both RAE SPA/ MM SPA)	Yes (RAE SPA)
Redshank	-	-	-	-	-	-	-	-	-	-	-	3	-	No (RAE SPA/ MM SPA)	No
Shelduck	-	-	-	-	4	-	-	-	-	-	-	-	-	No (RAE SPA/ MM SPA)	No
Whooper swan	-	-	27	6	97	124	176	9	-	-	-	-	-	Yes (both RAE SPA/ MM SPA)	No

Table 1.6: Target Species recorded within 600m of Mitigation Area 2. (Fields combined per visit)

Species	Survey Visits													Alone SPA species meet FLL criteria during any visit?	Assemblage SPA species meet any of FLL criteria during any visit?
	1	2	3	4	5	6	7	8	9	10	11	12	13		
Curlew	-	-	-	-	-	-	-	-	8	8	8	61	24		No
Lapwing	-	-	-	-	18	-	-	50	100	27	-	7	8		No
Mallard	-	-	-	-	-	-	4	-	-	-	-	-	2		No
Oystercatcher	-	-	-	-	-	-	-	-	-	-	7	12	3	No (RAE SPA/ MM SPA)	No
Pink-footed goose	31	2	150	16	343	-	116	89	696	-	244	-	-	Yes (both RAE SPA/ MM SPA)	No
Shelduck	-	-	-	-	2	-	10	14	9	-	-	5	9	No (RAE SPA/ MM SPA)	No
Teal	-	-	-	-	-	-	8	-	4	4	-	-	-	No (RAE SPA/ MM SPA)	No
Whooper swan	-	11	-	-	135	-	2	11	-	-	-	-	-	Yes (both RAE SPA/ MM SPA)	No

2023-2024 Wintering Bird Surveys (partially complete up to, and including, December 2023) – Winter 2

Table 1.7: Target Species recorded within the Site (Fields Combined per visit).

Species	Survey Visits 2023/2024							Alone SPA species meet FLL criteria during any visit?	Assemblage SPA species meet any of FLL criteria during any visit?
	1	2	3	4	5	6	7		
Lapwing	-	-	14	14	24	12	11		No
Pink-footed goose	240	-	-	-	-	-	-	Yes (MM SPA)	No
Shelduck	-	-	-	-	-	2	1	No (RAE SPA/ MM SPA)	No

Table 1.8: Target Species recorded within 600m of the Site (Fields Combined per visit).

Species	Survey Visits 2023/2024							Alone SPA species meet FLL criteria during any visit?	Assemblage SPA species meet any of FLL criteria during any visit?
	1	2	3	4	5	6	7		
Curlew	-	-	-	6	-	-	-		No
Lapwing	-	-	-	197	207	-	-		No
Mallard	38	31	48	67	40	56	57		No
Pink-footed goose	-	-	-	63	-	-	-	No (RAE SPA/MM SPA)	No
Ruff	-	-	5	3	-	-	-	Yes (RAE SPA)	No
Shelduck	-	-	-	-	2	2	3	No (RAE SPA)	No
Teal	-	4	8	-	-	-	3	No (RAE SPA/MM SPA)	No

Table 1.9: Target Species recorded within Mitigation Area 1 (Fields Combined per visit).

Species	Survey Visits 2023/2024							Alone SPA species meet FLL criteria during any visit?	Assemblage SPA species meet any of FLL criteria during any visit?
	1	2	3	4	5	6	7		
Lapwing	-	-	-	-	-	6	32		No
Whooper swan	-	-	-	-	-	13	124	Yes (both RAE SPA/MM SPA)	No

Table 1.10: Target Species recorded within 600m of Mitigation Area 1 (Fields Combined per visit).

Species	Survey Visits 2023/2024							Alone SPA species meet FLL criteria during any visit?	Assemblage SPA species meet any of FLL criteria during any visit?
	1	2	3	4	5	6	7		
Lapwing		1	4		103	76	43		No
Mallard	38	10	3	13	7	7	-		No
Pink-footed goose	-	-	-	32	-	-	-	No (RAE SPA/MM SPA)	No
Shelduck	-	-	-	-	2	2	4	No (RAE SPA)	No
Teal	-	-	2	-	-	38	59	Yes (MM SPA)	No

Species	Survey Visits 2023/2024							Alone SPA species meet FLL criteria during any visit?	Assemblage SPA species meet any of FLL criteria during any visit?
	1	2	3	4	5	6	7		
Whooper swan	-	-	2	5	27	30	78	Yes (both RAE SPA/MM SPA)	No

Table 1.11: Target Species recorded within Mitigation Area 2 (Fields Combined per visit).

Species	Survey Visits 2023/2024							Alone SPA species meet FLL criteria during any visit?	Assemblage SPA species meet any of FLL criteria during any visit?
	1	2	3	4	5	6	7		
Curlew	-	-	-	9	-	-	5		No
Golden plover	-	-	-	-	-	171	-		No
Lapwing	-	-	1	-	33	126	-		No
Pink-footed goose	480	50	1	-	-	-	2	Yes (both RAE SPA/MM SPA)	No
Whooper swan	-	-	-	-	-	124	178	Yes (both RAE SPA/MM SPA)	No

Table 1.12: Target Species recorded within 600m of Mitigation Area 2 (Fields Combined per visit).

Species	Survey Visits 2023/2024							Alone SPA species meet FLL criteria during any visit?	Assemblage SPA species meet any of FLL criteria during any visit?
	1	2	3	4	5	6	7		
Curlew	-	15	1	6	34	-	-		No
Lapwing	-	1	60	-	44	-	-		No
Mallard	-	-	-	42	5	-	4		No
Pink-footed goose	-	24	-	141	-	-	-	No (RAE SPA/MM SPA)	No
Oystercatcher	-	-	-	-	1	-	-	No (RAE SPA)	No
Shelduck	-	-	-	16	6	-	-	No (RAE SPA)	No
Teal	-	-	-	1	6	-	10	No (RAE SPA/MM SPA)	No

Species	Survey Visits 2023/2024							Alone SPA species meet FLL criteria during any visit?	Assemblage SPA species meet any of FLL criteria during any visit?
	1	2	3	4	5	6	7		
Whooper swan	-	-	-	192	182	-	-	Yes (both RAE SPA/MM SPA)	No

To date, a total of five species listed as qualifying species of the nearby Ribble and Alt Estuaries SPA and Martin Mere SPA have been recorded as exceeding the 1% threshold within the survey area associated with the Proposed Development.

Table 1.13 below shows the ranges of flock size and the percentage of surveys in which those qualifying species were shown to exceed the FLL threshold. As stated above, a site should be considered to be functionally linked if the 1% threshold is exceeded for two thirds of the survey visits.

Table 1.13: Target Species recorded as exceeding the FLL threshold on at least one survey.

Species	Flock range exceeding FLL threshold	Regularity of use in percentage (number of survey occurrence above threshold in brackets)
The Site		
Pink-footed goose	240	4.8% (1/21)
Whooper swan	152	4.8% (1/21)
The Site – 600m buffer		
Ruff	3-5	9.5% (2/21)
Whooper swan	138	4.8% (1/21)
Mitigation Area 1		
Whooper swan	13-157	20% (4/20)
Mitigation Area 1 - 600m buffer		
Teal	38-59	10% (2/20)
Whooper swan	5-190	50% (10/20)
Mitigation Area 2		
Golden plover	171	5% (1/20)
Pink-footed goose	343-696	20% (4/20)
Whooper swan	6-178	40% (8/20)
Mitigation Area 2 – 600m buffer		
Whooper swan	182-192	10% (2/20)

Table 1.14: Species recorded during field surveys for consideration and their SPA status and population. Note, the respective Ramsar sites listed species which are listed as qualifying species within the SPAs.

Species	RAE SPA (Alone)	RAE SPA SPA (Assem)	Ribble Estuary (Other) ⁴	Ribble Estuary 50yr mean (WeBS)	MM SPA (Alone)	MM SPA (Assem)	Martin Mere (Other) ¹	Martin Mere 5-yr mean (WeBS)	National (GB) Population
Cormorant	-	x	-	975	-	-	-	36	65,000
Curlew	-	x	-	1,092	-	-	-	1	125,000
Golden plover	x	x	x	4,370	-	-	-	-	400,000
Lapwing	-	x	x	12,904	-	x	-	1,727	620,000
Mallard	-	x	-	962	-	x	-	1,348	665,000
Pink-footed goose	x	x	x	25,007	x	-	x	15,660	510,000
Oystercatcher	x	x	x	11,236	-	-	-	81	305,000
Redshank	x	x	x	2,179	-	-	-	4	100,000
Ruff	x	--		42	-	x	-	70	920
Shelduck	x	x	x	3,904	-	-	-	652	47,000
Teal	x	-	x	7,069	x	-	x	2,148	430,000
Whooper swan	x	x	-	561	x	x	-	1,009	20,000
Wigeon	x	x	x	49,935	-	-	-	1,210	445,000

Vantage Point (VP) Surveys

2022-2023 VP surveys

During the 2022-2023 winter season, a total of nine Target Species were recorded during the VP Flight Activity surveys. The total number of flights, total number of birds and total flight duration recorded (across all height bands) is presented in **Table 2.1**. This includes some flights which were detected outside of the VP Survey Area and which are not at-risk of collision from the proposed turbine (see the final column in **Table 2.1** for the number of at-risk flights recorded across the survey period).

In addition to the Target Species listed in **Table 2.1**, observations also consisted of four flights of barn owl, 2 flights of goosander, two flights of grey heron, one flight of hobby, 11 flights of little egret, two flights of mute swan, two flights of peregrine and five flights of snipe.

To note, no flocks of qualifying species (marked in bold) were recorded to land within the Site during VP surveys. As such, the results of the VP are not included in the FLL analysis.

Table 2.1: Target Species flight activity summary (all flights) between September 2022 – May 2023.

Species	Total. no. of flights	Total. no. of birds	Total flight time (secs) [†]	No. of flights passing within the at-risk window*
Curlew	1	1	20	0
Golden plover	7	26	780	3
Lapwing	112	634	47,162	37
Oystercatcher	55	95	2,013	2
Pink-footed goose	92	2,888	370,259	88

⁴ 1% or greater of National population based on 5-year mean (WeBS) or 2,000+ birds recorded in last count

Species	Total. no. of flights	Total. no. of birds	Total flight time (secs)†	No. of flights passing within the at-risk window*
Redshank	5	8	280	2
Shelduck	56	139	5,881	9
Teal	35	144	2,315	2
Whooper swan	30	747	34,685	21

Species in **bold** represent qualifying features of the SPA sites.

† Duration of each flight is multiplied by the number of individuals and summed for each species.

* Rotor sweep of approximately 35m (lowest tip height) to 150m (highest tip height). Within the whole VP Survey Area (Site and 200m buffer).

2023-2024 VP Season

Surveys are still ongoing for the 2023-2024 VP season, however to date, a total of nine Target Species have been recorded during the VP Flight Activity surveys. The total number of flights, total number of birds and total flight duration recorded (across all height bands) is presented in **Table 2.2**. This includes some flights which were detected outside of the VP Survey Area and which are not at-risk of collision from the proposed turbine (see the final column in **Table 2.2** for the number of at-risk flights recorded across the survey period).

In addition to those Target Species, nine flights of lesser black-backed gull (a breeding qualifying species of the Ribble and Alt Estuaries SPA only) and one flight of snipe recorded.

Table 2.2: Target Species flight activity summary (all flights) between October 2023 – December 2023.

Species	Total. no. of flights	Total. no. of birds	Total flight time (secs)†	No. of flights passing within the at-risk window*
Cormorant	4	6	284	3
Dunlin	1	2	168	0
Lapwing	30	1372	122,315	22
Mallard	5	17	440	0
Pink-footed goose	75	3593	298,244	70
Ruff	1	3	288	0
Shelduck	3	4	173	2
Teal	1	2	50	0
Whooper swan	6	29	2,706	5

Species in **bold** represent qualifying features of the SPA sites.

† Duration of each flight is multiplied by the number of individuals and summed for each species.

* Rotor sweep of approximately 35m (lowest tip height) to 150m (highest tip height). Within the whole VP Survey Area (Site and 200m buffer).

Summary

During Wintering Bird Surveys carried out between September 2022 to March 2023 and October 2023 to December 2023, a total of 13 species listed as qualifying features or listed in the waterbird assemblage were recorded across the three surveys areas.

Throughout the surveys carried out to date, the Site has recorded lapwing, mallard, oystercatcher, pink-footed goose, shelduck and whooper swan, of which pink-footed goose and whooper swan has been observed to exceed the threshold for functional linked land (FLL). Within the 600m buffer surround the Site, the same species recorded within the Site, plus additional redshank, teal and ruff have been recorded. Only whooper swan and ruff have been observed to exceed the FLL threshold.

Throughout surveys carried out to date, Mitigation Area 1 has recorded lapwing, pink-footed goose, shelduck and whooper swan, with only pink-footed goose exceeding the FLL threshold. Within the 600m buffer zone, curlew, lapwing, mallard, oystercatcher, shelduck, teal and whooper swan were recorded, with teal and whooper swan both exceeding the FLL threshold.

Surveys at Mitigation Area 2 have recorded curlew, golden plover, lapwing, mallard, oystercatcher, pink-footed goose, redshank, shelduck and whooper swan. Golden plover, pink-footed goose and whooper swan all were recorded as exceeding the FLL threshold.

Vantage point surveys have been conducted across two winter periods (one of which is ongoing) and flight activity is typically low for most Target Species, with only pink-footed goose, lapwing and whooper swan exceeding 20 at-risk flights to date. Collision risk model (CRM) analysis will be conducted at the end of the survey period, on those Target Species meeting the criteria of ≥ 3 at-risk flights, or ≥ 20 birds.

Whilst the Site has recorded pink-footed goose and whooper swan as exceeding the threshold for FLL for the Ribble and Alt Estuaries SPA and Martin Mere SPA, flock sizes where this was exceeded occurred on two or less survey visits. The Natural England (2021)[1] publication on functional linked land supporting SPA waterbirds states that the threshold should be met on 2/3 of the survey visits. As the threshold was met on no more four visits in each survey season for any single qualifying species there is no evidence that the Site or Mitigation Area 1 are functionally linked to the nearby SPAs. Mitigation Area 2 recorded whooper swan above the recognised FLL threshold during 40% of the surveys. Mitigation Area 2 has so far recorded whooper swan on 8 of the 20 surveys with all 8 of those exceeding the FLL threshold. Whilst the threshold of 2/3 of surveys has so far not been met or exceeded, there is the possibility that Natural England may advise that Mitigation Area 2 is already functioning as an important habitat for whooper swan (albeit the usage of the area by the species falls short of reaching the 2/3 threshold indicative of high FLL). If Natural England do take this view they may not consider Mitigation Area 2 suitable for offsetting any effects of the proposed development onsite (if mitigation is required).

Prepared by: Zac Hinchcliffe *MRes BSc (Hons.)*

Reviewed by: Colin Bonnington *DPhil MSc BSc (Hons) MCIEEM*