

## Assessment of Potentially Functionally Linked Land – Lancaster South Area Action Plan

### Summary of Wintering Bird Surveys Oct 2021 to Jan 2022



*Highland Brow, Galgate*

For

Lancaster City Council

By

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***February 2022***

## **1 INTRODUCTION**

- 1.1 In July 2020 Lancaster City Council adopted a new Local Plan for the district, which contained a number of strategic growth areas including the designation of a “Broad Location for Growth” in South Lancaster, this includes the creation of a new settlement at Bailrigg Garden Village.

GMEU has surveyed the area previously (2018) for wintering bird interest, and assessed the area for its potential to act as functionally linked land (to the nearby Special Protection Areas). References in the earlier wintering bird survey reports prepared by Greater Manchester Ecology Unit (GMEU) refer to ‘Bailrigg Garden Village’, however they do relate to the wider South Lancaster area, although the boundaries of individual compartments have been adjusted and a new compartment 8 added.

- 1.2 The City Council commissioned GMEU to undertake updated wintering bird surveys of the land that falls within the scope of the Lancaster South Area Action Plan (figure 1), to build the evidence base that will be used to prepare a new Development Plan Document setting out the detailed policies and land allocations for South Lancaster.
- 1.3 The primary objective of the bird surveys is to establish whether any of the land, which may be allocated for development, is functionally linked to the Morecambe Bay and Duddon Estuary Special Protection Area/Ramsar site and the Bowland Fells Special Protection Area (described further in the GMEU wintering bird surveys of 2018).
- 1.4 The term ‘functional linkage’ refers to the role or ‘function’ that land or sea beyond the boundary of a European designated site might fulfil in terms of supporting the populations for which the site was designated or classified. Such an area of land or sea is therefore ‘linked’ to the site in question because it provides a (potentially important) role in maintaining or restoring a protected population at favourable conservation status.

Whilst areas beyond a site boundary might serve a function in respect of a designated habitat type, for example by being linked hydrologically to the qualifying habitat, in the context of this report ‘functional linkage’ refers only to land or sea which is linked to a qualifying species (whether an Annex II species for which a SAC has been designated, or a bird species for which a SPA has been classified).

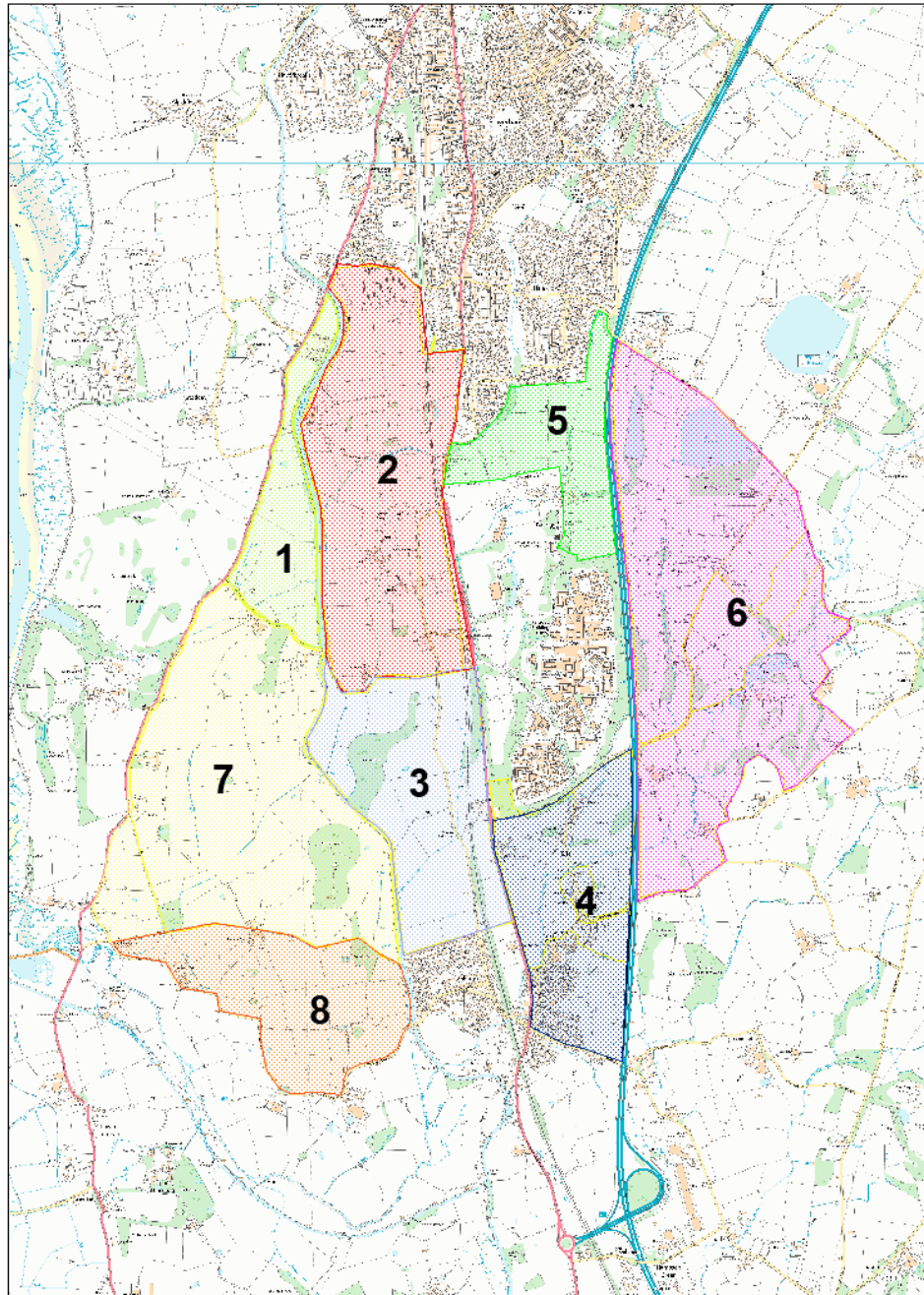
To qualify as ‘functionally linked land’, an area should have been shown to be of substantive importance to the ecology of a qualifying species - that is, if the land were to become unavailable to the qualifying species the lifecycle of the species could be compromised. In practice, to be assessed as functionally linked a site or area should have been shown to support important numbers of qualifying species on a regular basis.

Because there are no established protocols for empirically defining functional linkage, a certain degree of expert opinion is needed when assessing a site or area for functional linkage.

- 1.5 Landscape assessments and wintering bird surveys of compartments one to six, and the north of compartment seven, were previously carried out by GMEU in 2017 and in February/March and October/November 2018, comprising at least three survey visits to each compartment and totalling approximately 92 hours of total survey effort. The results of these surveys are complementary to the current surveys and should be referred to in any overall assessment of the potential of the areas to be functionally linked to designated sites. In addition, GMEU carried out habitat surveys of the areas concerned in 2017.
- 1.6 In previous surveys only one of the compartments surveyed (the north of Compartment 6, Forrest Hills) was assessed as having moderate potential to act as land Functionally Linked to the Morecambe Bay and Duddon Estuary SPA. This mostly concerns the northern part of the Forrest Hills compartment, and an area to the north, around Blea Tarn Reservoir assessed as having moderate potential because of the relatively high numbers of golden plover recorded in and close to these areas. (GMEU 2018).
- 1.7 Following discussions between Natural England and Lancaster City Council, it was agreed that insufficient survey effort had been carried out of the area to provide the necessary degree of certainty that the areas concerned were not functionally linked. Additional surveys needed to be carried out between December 2020 and March 2021 and October 2021 to Jan 2022 to assess whether any changes had occurred in the use of the land by SPA qualifying species and to add to the existing evidence base. Further, the extreme weather conditions experienced in February/March 2018, (sometimes referred to as “The Beast from the East” weather system, involving an unusually prolonged period of very cold weather and strong, cold winds) could potentially have displaced birds which in normal winter conditions would be present in the area.
- 1.8 Survey results from the period Dec 2020 to March 21 have been reported previously.
- 1.9 Since 2018 further desktop information has been made available, including bird data from the Lancashire Environmental Record Centre, the Fylde Bird Club, the Lancaster and District Birdwatching society.

In addition, the Lancaster City Council Local Plan has been subject to a Habitats Regulations Assessment which has also assessed the area for its potential to be functionally linked to designated sites.

**Figure 1** - The proposed area of the Lancaster South Area Action Plan and numbered survey compartments as referred to in the text.



1.10 The Compartment boundaries are shown in figure 1

1. Land to the West of Lancaster Canal
2. Land surrounding Burrow Heights and Whinney Carr
3. South Lancaster
4. Ellel
5. Bailrigg
6. Forrest Hills
7. Land to the south of Tarnwater Lane (west of Lancaster Canal)
8. Land north of Conder Green Road / West of Galgate

Compartment 5 Bailrigg to the north of Lancaster University is currently the subject of a planning application and has also been surveyed and assessed by others in relation to this application for development.

Parts of compartment 6 to the east of the M6 have recently been surveyed by others in relation to an application for the development of a solar farm

## 2 Methods

2.1 New desktop data was obtained for the area from

- Lancashire Environmental Records Network (LERN)
- The Fylde Bird Club
- The Lancaster and District Birdwatching Society

2.2 Field surveys were led by Stephen Atkins, an experienced ornithologist, who is the Assistant County Bird Recorder for Greater Manchester, assisted by Principal Ecologist Derek Richardson BSc Hons MPhil and Ecologist Shea O'Neill MCIEEM .

2.3 The survey methodology employed was the same as in 2018 and earlier in 2021, with a walkover of each compartment and point counts conducted from vantage points giving the best views over the surrounding landscape. Vantage points were the same as the late Winter/early Spring surveys of 2021. The routes taken around the compartments were along public rights of way and minor roads, consequently some areas were not able to be surveyed comprehensively. This limitation was not considered to have significantly influenced the overall conclusions of the surveys.

Each survey visit was of at least five to six hours duration, the first two taking place on 16<sup>th</sup> October 2021 and the last on 9<sup>th</sup> January 2022.

The full survey schedule is shown in Table 1 below and covers the start of migration when birds will be staging in Lancashire and moving south.

Natural England recommends that comprehensive survey for functional linkage should involve bi-weekly surveys of land. However, in this case

- There is already existing recent survey data available for the areas concerned (except part of compartment 8). The surveys reported in this report are supplementary to existing information.
- The landscape and habitat analysis of the areas concerned (GMEU 2017 and 2018) do not indicate that they have high potential to be functionally linked
- There is desk-top information available which supplement field surveys.

Accordingly, survey effort in 2021/2022, when considered in the light of previous survey effort, was considered to be proportionate and adequate to arrive at an accurate overall assessment of the potential of the area to be functionally linked.

**Table 1 – Survey Schedule**

<b>Compartment no</b>	<b>Survey Dates</b>
1	Oct 16 <sup>th</sup> , Nov 13 <sup>th</sup> , Nov 20 <sup>th</sup>
2	Oct 17 <sup>th</sup> , Nov 14 <sup>th</sup>
3	Oct 23 <sup>rd</sup> , Nov 28 <sup>th</sup>
4	Nov 20 <sup>th</sup> , Nov 28 <sup>th</sup>
5	Nov 20 <sup>th</sup> , Dec 4 <sup>th</sup>
6	Nov 21 <sup>st</sup> , Dec 4 <sup>th</sup> , Dec 5 <sup>th</sup>
7	Oct 30 <sup>th</sup> , Oct 31 <sup>st</sup> , Dec 11 <sup>th</sup> , Jan 7 <sup>th</sup>
8	Oct 30 <sup>th</sup> , Dec 11 <sup>th</sup> , Dec 12 <sup>th</sup>

In addition to the full compartment surveys listed above, certain areas of the compartments were monitored on other dates throughout the survey period.

## **2.4 Assessment**

The compartments have been assessed using the Site Scoring System applied to the data collected during the 2017 and 2018 surveys (GMEU 2018)

## **2.5 Survey Limitations**

Birds are capable of rapidly changing foraging and refuge behaviour in relation to changing land uses.

In the survey areas, all within 5km of the coastal SPA, birds are in almost constant movement related to changing weather conditions, changes to land use and tidal conditions.

The survey results presented in this report can only record the birds present at the time the surveys were carried out and may not provide a true representation of the long-term use of sites and areas.

However, for the survey areas concerned there have been a number of surveys and assessments, carried out over a number of years, which do provide a high degree of confidence in the overall assessment.

Nocturnal surveys were not carried out, although some surveys of some compartments began before dawn. Nocturnal use of the sites may therefore not have been recorded, and crepuscular species / use may have been underrecorded.

## 2.6 Key to species maps

**Table 2 Species Key**

Species code	Species (English name)	Species (scientific name)	Designation
CU	Curlew	<i>Numenius arquata</i>	SPA, S41, Red-listed
D.	Dunnoek	<i>Prunella modularis</i>	S41, Amber-listed
GP	Golden Plover	<i>Pluvialis apricaria</i>	SPA, Amber-listed
KF	Kingfisher	<i>Alcedo atthis</i>	Schedule 1 (W&C act)
L.	Lapwing	<i>Vanellus vanellus</i>	SPA/S41, Red-listed
LB	Lesser Black-backed Gull	<i>Larus Fuscus</i>	SPA, Amber-listed
LR	Lesser Redpoll	<i>Carduelis cabaret</i>	S41, Red-listed
ET	Little Egret	<i>Egretta garzetta</i>	SPA
HS	House Sparrow	<i>Passer domesticus</i>	S41, Red-listed
MU	Mediterranean Gull	<i>Larus melanocephalus</i>	Schedule 1 (W&C act) Amber-listed
OC	Oystercatcher	<i>Haemotopus ostralegus</i>	SPA, Amber-listed
PG	Pink-footed Geese	<i>Anser brachyrhynchus</i>	SPA, Amber-listed
RB	Reed Bunting	<i>Emberiza Schoeniclus</i>	S41, Red-listed
S.	Skylark	<i>Alauda arvensis</i>	S41, Red-listed
SG	Starling	<i>Sturnus vulgaris</i>	S41, Red-listed
ST	Song Thrush	<i>Turdus philomelos</i>	S41, Red-listed
SU	Shelduck	<i>Tadorna tadorna</i>	SPA, Amber-listed
TS	Tree Sparrow	<i>Passer montanus</i>	S41, Red-listed



### **3 Results**

#### **3.1 Desktop Data**

- 3.1.1** Data from LERN, the Lancaster and District Birdwatching Club and the Fylde Bird Club dating back to 2010 concerning the distribution of Pink-footed geese does not indicate that the areas surveyed are of significant importance for Pink-footed geese.

All the available records indicate that, outside of the SPA, the areas south of Glasson Dock and around Thurnham Moss are of most value to geese (and swans). It is notable that inland Biological Heritage Sites (BHS) have been designated for wading and water birds associated with the Morecambe Bay SPA, and that these BHS sites lie to the south of the study area, particularly around Pilling Moss. No significant numbers of geese have been recorded within the areas concerned in this study.

There are however significant bird records for a 2km grid square encompassing part of the study area, as reported in the HRA of the Lancaster Local Plan, these records are associated with Blea Tarn Reservoir.

Compartment 5 is currently the subject of an application for development (Lancaster City Council planning application reference 19/01135/OUT). Recent wintering bird surveys have been undertaken by others to inform this application, and an Appropriate Assessment has been undertaken. The surveys demonstrated that the compartment is not functionally linked; Natural England have accepted the results of this Assessment and have not raised any objections to the application on these grounds.

Parts of Compartment 2 have also been subject to recent planning applications (Lancaster City Council planning application reference 19/00332/OUT). This area was also subject to bird surveys undertaken by others and was not shown to be functionally linked. It is notable that none of the areas included in this study appear to be visited on a regular basis by local birdwatchers, a possible indication that the areas are not known for their significant bird interest (birdwatchers tend to go where the birds are found).

Part of Compartment 6 has also been subject to wintering bird surveys and a project-based HRA in connection with a planning application for a solar farm.

This desktop data confirms the views of GMEU surveyors, and that of local birdwatchers, that the areas of most value to birds outside of the SPAs are to the south of Glasson Dock to Pilling and to the north, around the Leighton Moss RSPB Reserve / SPA.

## **3.2 Field Surveys - habitats**

### **3.2.1 Habitats**

With the exception of compartment 8, the habitats were described in detail, in previous GMEU reports (GMEU 2017, GMEU 2018, GMEU 2021).

The habitats and land use are largely unchanged with much of the land consisting of improved grassland closely grazed by sheep and/or cattle, therefore providing little in the way of food resources for Pink-footed Geese, but of some potential use to foraging waders such as Curlews, Golden Plovers and Lapwings.

Some fields in compartments 1 and 3 (the same as in 2017/2018) contained maize stubble which in other areas in Lancaster district does attract flocks of Pink-footed Geese (e.g, Aldcliffe in January 2021)

### **3.2.2 Compartment 8 habitats**

This was a new compartment surveyed for the first time in late 2021.

A large compartment (approx. 77 ha), dominated by improved agricultural grassland, with relatively small fields enclosed by hedgerows, with an average field size of about 5ha.

The terrain is undulating, and there are some small copses and scattered ponds. The ponds are together designated as a BHS for their amphibian value.

Electricity pylons and wires cross part of the Compartment north-to-south, effectively bisecting the site.

The predominant land use is sheep / cattle grazing and these fields consist typically of very short, uniform sward improved grassland generally unsuitable for Pink-footed Geese, but suitable for use by some wader species.

## **3.3 Field surveys - species**

### **3.3.1 Compartment 1**

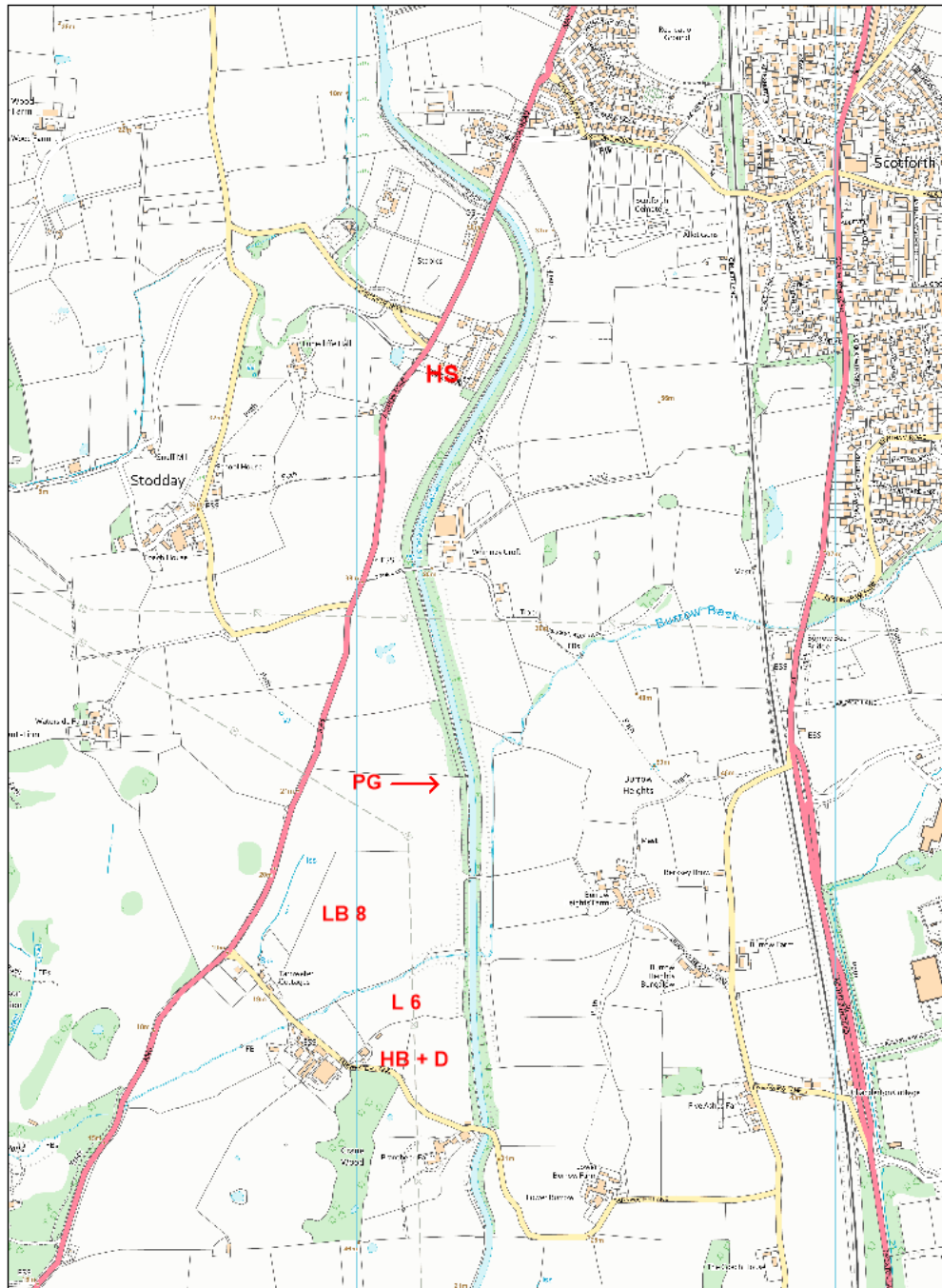
The Compartment was surveyed on Oct 16<sup>th</sup>, Nov 13<sup>th</sup> and Nov 20<sup>th</sup>

The only SPA qualifying species observed during the surveys were small numbers (6-8) lesser Black-backed Gulls (*Larus fuscus*), small numbers of Lapwings (4-6).

Curlew were heard on all of the survey dates, but not seen down in fields. On Nov 13<sup>th</sup> a flock of 30+ pink-footed geese flew over the compartment from west-to-east, but were not seen to land.

Other priority species included Dunnock and House Sparrow

The assessment of this compartment remains unchanged from 2018 and is scored as 2: Low potential to support wintering birds associated with Morecambe Bay & Duddon Estuary/Bowlands Fells SPAs (see figure 1) and to act as functionally linked land.



### Compartment 1, notable records

### **3.3.2 Compartment 2**

Surveyed on Oct 17<sup>th</sup> and Nov 14<sup>th</sup>

The north of the compartment is on the urban fringe of south Lancaster and the eastern boundary separated from Lancaster University by the west coast main railway line and the A6.

On Nov 14<sup>th</sup> four pink-footed geese were seen in a field just north of Burrow Beck and west of the railway line (NGR 347 740, 458 576).

Also on Nov 14<sup>th</sup>, geese were heard flying over the compartment but were not seen.

Unlike January 2021, no Lapwings were recorded during surveys.

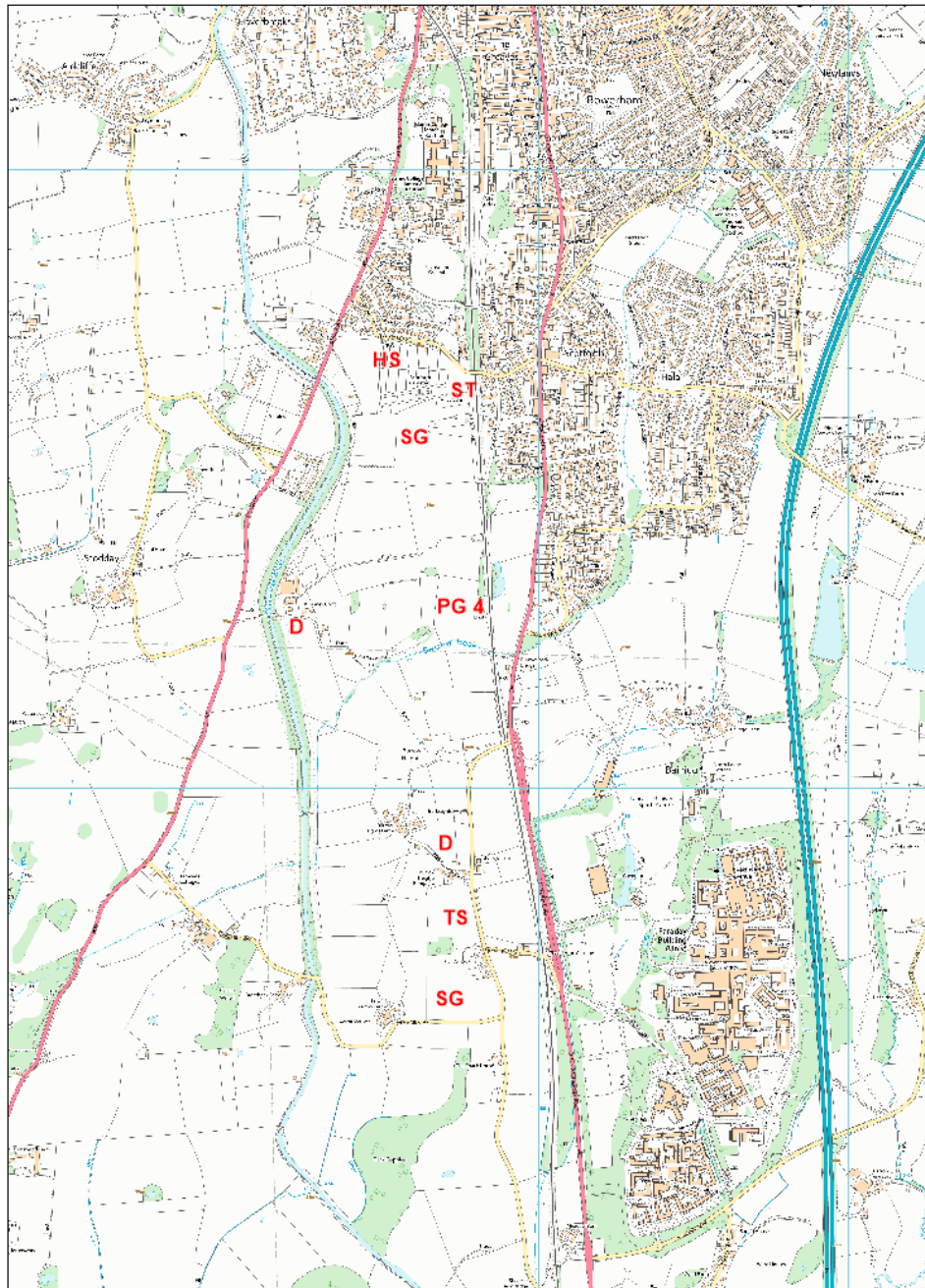
No other SPA target species were recorded during surveys.

Reasonable numbers of gulls (mainly black-headed gulls but also herring gulls) were foraging in fields east of the canal on each survey date, maximum numbers of 60+ black-headed gulls and 15-18 herring gulls

Tree sparrows were again seen and heard along Burrow Heights Lane (priority species). Other priority species (S41 NERC Act) present in small numbers around the compartment were House Sparrows, Dunnocks, Song Thrushes and Starlings, all of which are likely to breed in the area.

Small flocks of Starlings (about 20-30 birds were foraging in the fields to the south of Scotforth cemetery but moving frequently.

The assessment of this compartment remains unchanged and is scored as 2: Low potential to support wintering birds associated with Morecambe Bay & Duddon Estuary/Bowlands Fells SPAs (see figure 1) and to act as functionally linked land.



**Compartment 2, notable records**

### 3.3.3 Compartment 3

Surveyed on Oct 23<sup>rd</sup> and Nov 28<sup>th</sup>

Reasonable numbers of Lapwing (16) were again recorded in this compartment, in fields to the east of Park Coppice. Lapwings were recorded here in 2018 and were present again in early 2021.

Seventeen Lapwings were also in fields close to Ashton Park Bridge on Nov 28<sup>th</sup>. Grey Partridge were also in these fields.

A single Curlew was seen in fields close to Ou Beck in Oct., and a single Oystercatcher was seen just north of Galgate.

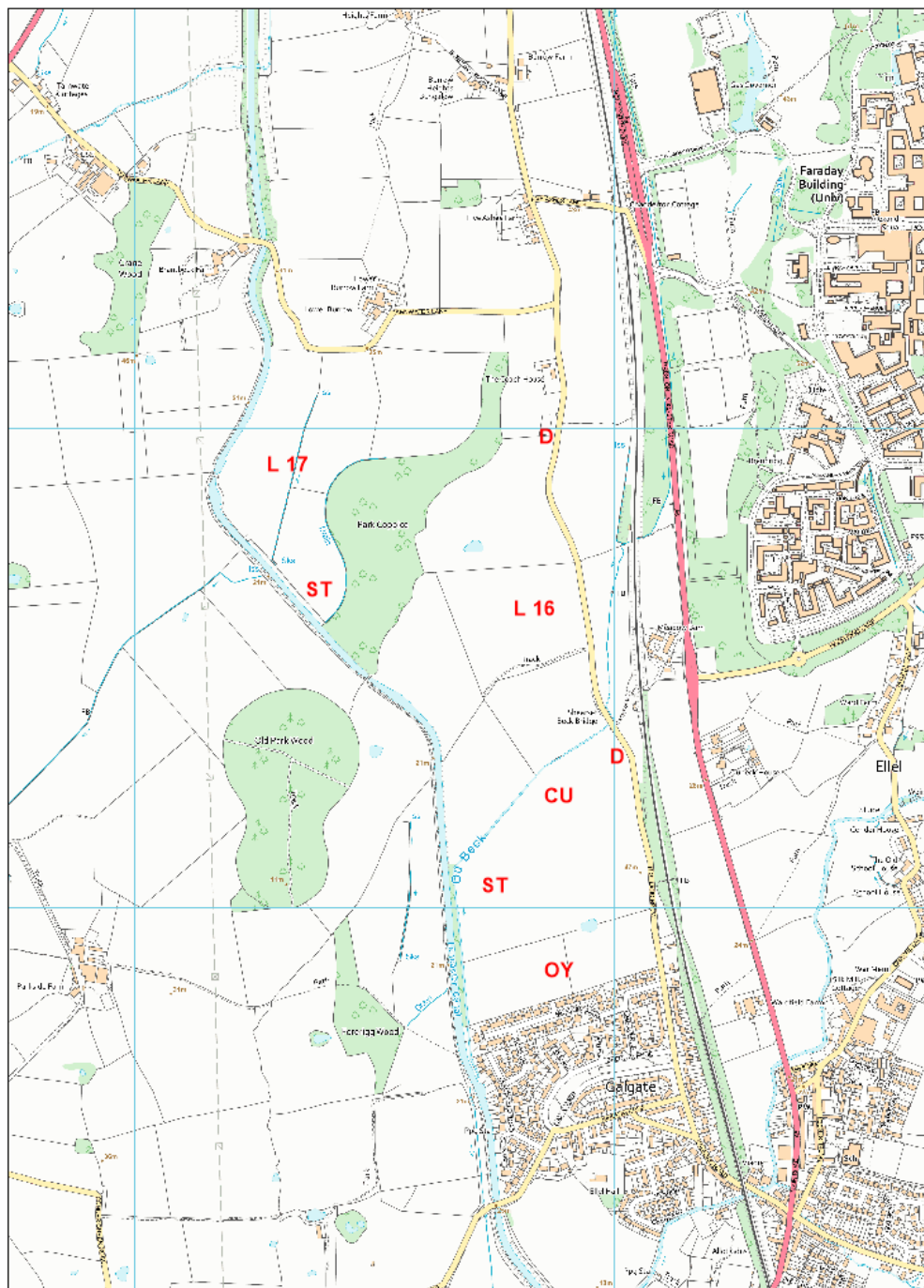
No other target species were recorded in the Compartment.

Other priority species (S41) recorded included song thrush and Dunnock (along Tarnwater Lane)

The assessment of this Compartment remains unchanged from 2017 and 2018 i.e. overall Score = 2. Low potential to support wintering birds associated with Morecambe Bay & Duddon Estuary/Bowlands Fells SPAs (see figure 1) and to act as functionally linked land.

However, the compartment has value for Lapwings.





Compartment 3, notable records

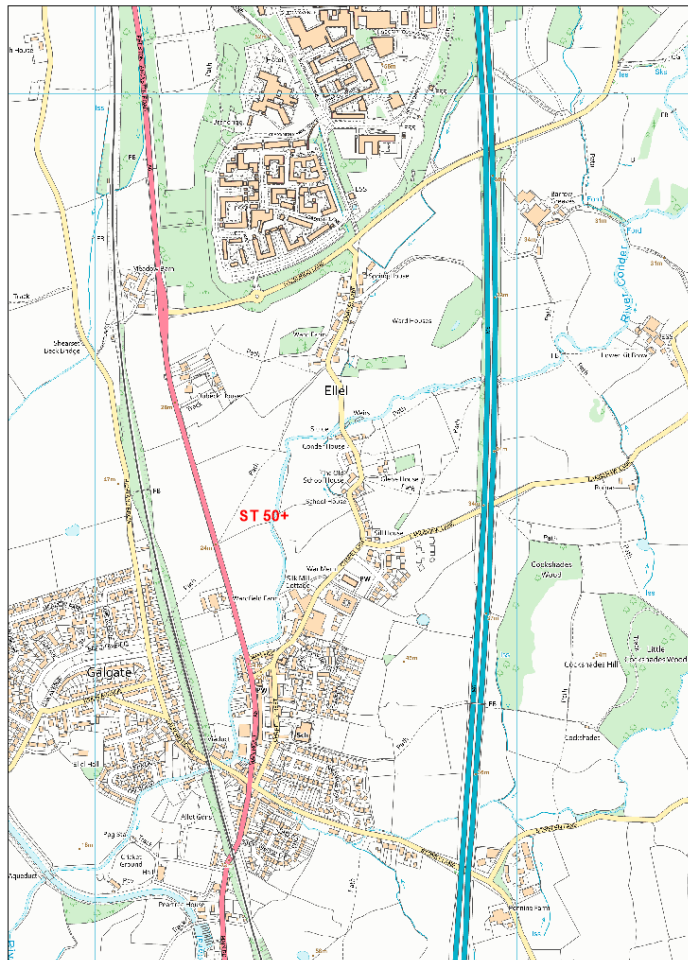
### 3.3.4 Compartment 4 – Ellel

Surveyed on Nov 20<sup>th</sup> and Nov 28<sup>th</sup>

Unlike in previous surveys when good numbers of Lapwings and Golden plovers have been recorded in this compartment, no target species were recorded in the compartment during these surveys.

The only birds of note were a flock of foraging starlings (50+) and small numbers of corvids (crows and jackdaws) and low numbers of black-headed gulls (single figures)

The assessment of compartment 4 remains unchanged, i.e. overall Score = 2. Low potential to support wintering birds associated with Morecambe Bay & Duddon Estuary/Bowlands Fells SPAs (see figure 1) and to act as functionally linked land.



Compartment 4, notable records

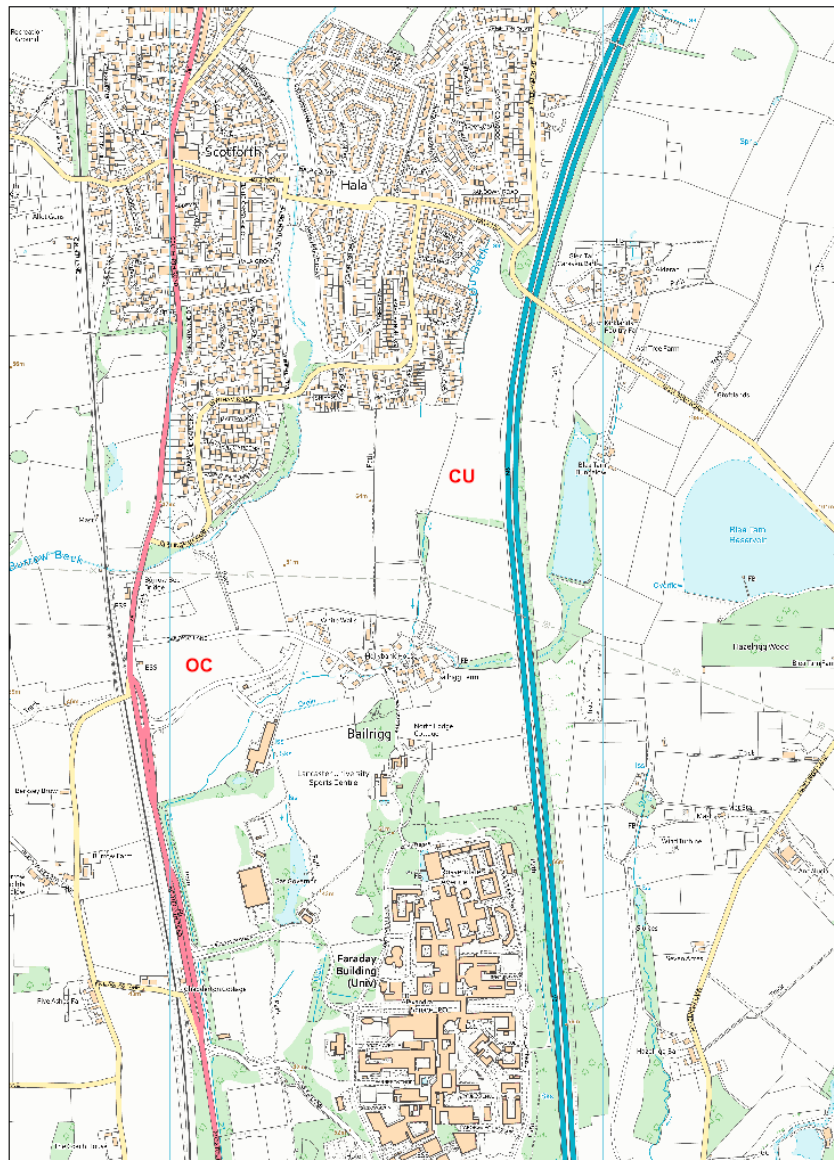


### 3.3.5 Compartment 5 – Bailrigg

Surveyed on Nov 20<sup>th</sup> and Dec 4<sup>th</sup>/5<sup>th</sup>

The only species of note recorded were a single Curlew on Dec 4<sup>th</sup> and two Oystercatchers on Dec 5<sup>th</sup>

The Compartment is again assessed as 2 – low priority to be functionally linked land.



Compartment 5, notable records

### 3.3.6 Compartment 6 – Forrest Hills

Surveyed on Nov 21<sup>st</sup>, Dec 4<sup>th</sup>/5<sup>th</sup>

The compartment includes Blea Tarn Reservoir and the land west of the reservoir to the M6.

A large area of land to the east of Hazelrigg Lane and north of the Forrest Hills Golf Complex has been surveyed extensively by others recently in relation to a planning application for a solar farm and consequently was not closely surveyed during these surveys.

Nonetheless, a few species were observed and recorded whilst walking along Hazelrigg Lane and are shown on the compartment 6 map.

No Pink-footed Geese were recorded in this Compartment during these surveys.

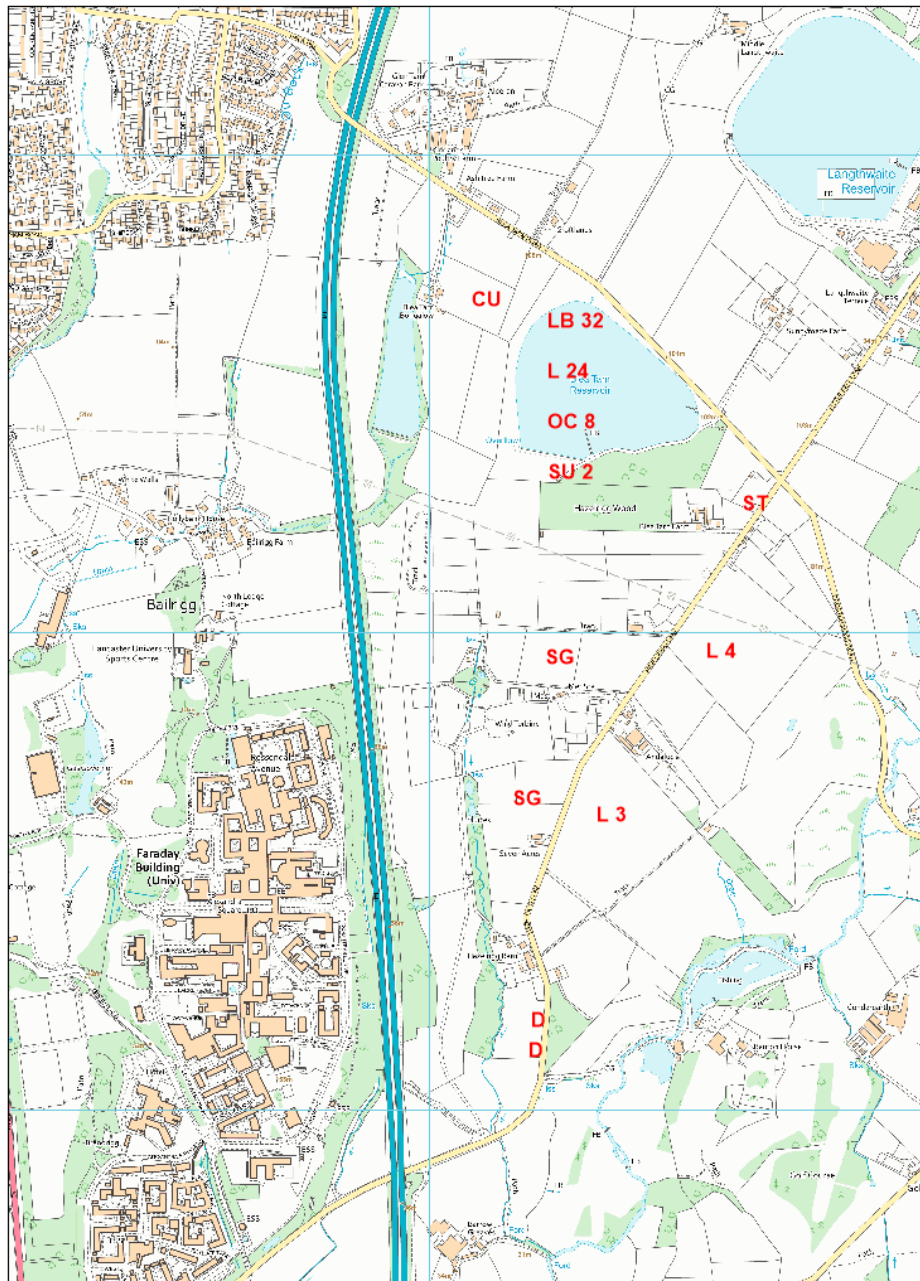
SPA qualifying species observed were mainly at Blea Tarn Reservoir and the immediately surrounding land –

- 32 Lesser Black-backed Gulls,
- 24 Lapwings,
- 8 Oystercatchers
- Two Shelduck present on the Dec visit
- Curlew

The results of the 2021 surveys when compared with those from the other compartments would suggest a general overall score of 2 for the majority of the compartment: Low potential to support wintering birds associated with Morecambe Bay & Duddon Estuary/Bowlands Fells SPAs (see figure 1) and to act as functionally linked land.

**However**, Blea Tarn reservoir and the immediately surrounding land is clearly of high value for birds and must be assessed as having at least moderate potential to act as functionally linked land.

Note that a significant part of this area has a permission for a solar farm.



Compartment 6, notable records

### **3.3.7 Compartment 7 – Land to south of Tarnwater Lane (west of Lancaster Canal)**

Surveyed on Oct 30<sup>th</sup>, Oct 31<sup>st</sup>, Dec 11<sup>th</sup> and Jan 7<sup>th</sup>

Again, the compartment stands out as being the most important compartment for SPA qualifying species, especially Curlew, Lapwing and to a lesser extent Golden Plover. This is perhaps unsurprising, since the compartment is closest to the important feeding grounds within the SPA to the west.

The only Pink-footed Geese seen were flying over the Compartment and none were seen on the ground

A flock of 90+ Lapwings was again seen feeding in fields north and east of Heronswood Farm, adjacent to the A588, on Dec 11<sup>th</sup>, with 20+ west of Crane Wood. Four curlew were also in fields east of the A588. More than 60 were in fields west of Old Park Wood.

A pair of Oystercatcher Priority (S41) was recorded north of Crow Wood on Dec 11<sup>th</sup>.

A pair of Shelduck were at Conder Green on Dec 11<sup>th</sup>.

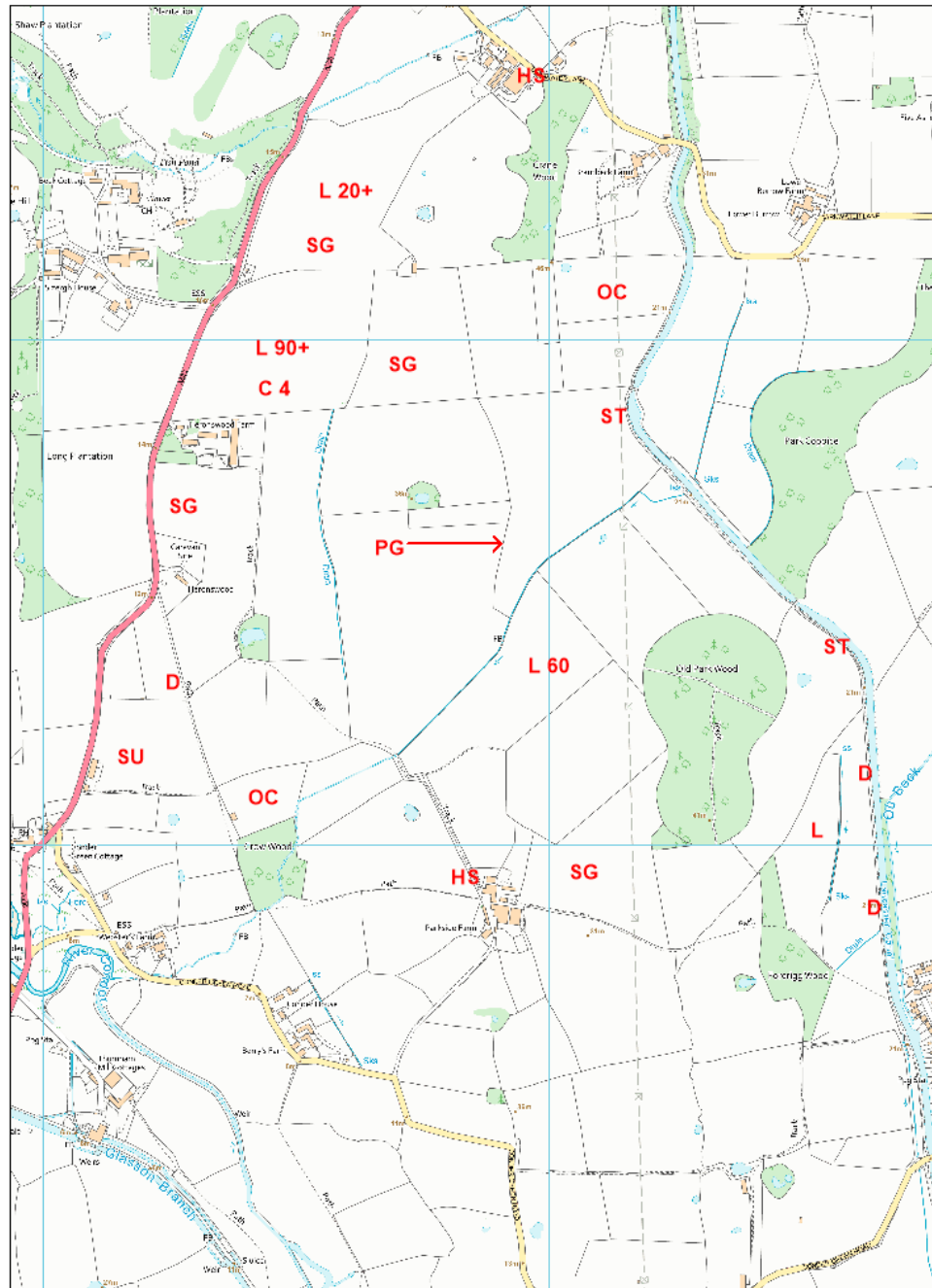
Good numbers of gulls (100+ black-headed and 30+ herring) were recorded in different fields on all of the survey dates

House Sparrows, Dunnock, Starling and Song Thrush were recorded on all the survey days.

Brown hare are also present in this Compartment.

Overall, Compartment 7 is assessed as 3. Moderate potential to support overwintering birds associated with Morecambe Bay & Duddon Estuary/Bowlands Fells SPAs and to act as Functionally Linked Land.

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Compartment 7, notable records

### 3.3.8 Compartment 8

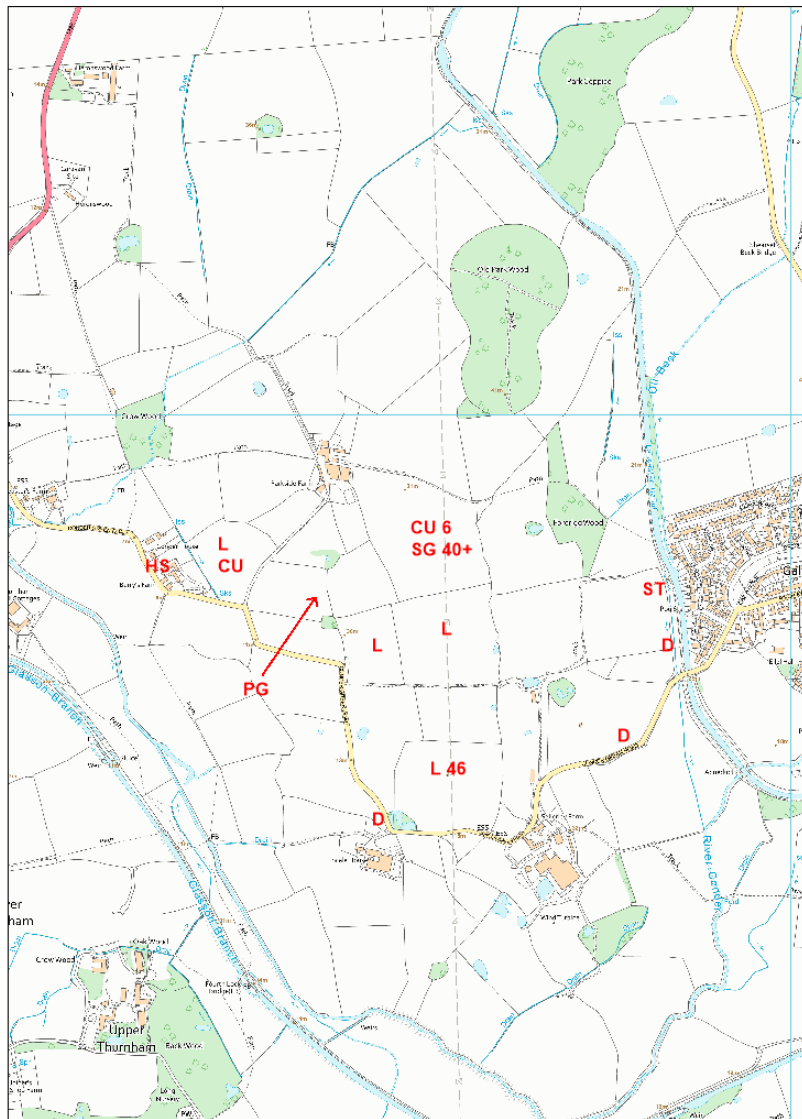
Surveyed on Oct 30<sup>th</sup>, Dec 11<sup>th</sup> and Dec 12<sup>th</sup>

As with Compartment 7, good numbers of Lapwing and reasonable numbers of Curlew were recorded in this compartment.

A flock of 100 + Pink footed geese flew over the compartment late on Oct 30<sup>th</sup> but did not land.

Large numbers of gulls were present, 300+ Black headed Gulls and more than 50 herring Gulls on Dec 11<sup>th</sup> and with good numbers also present on the 12<sup>th</sup>.

Other priority species present included Dunnock, House Sparrow, Song Thrush and Starling



**Compartment 8, notable records**

## **4 Overall Summary and Discussion**

Whilst the surveys carried out between December 2020 and Jan 2022 have collected a considerable amount of new data from these areas of South Lancaster which, as far as we are aware, normally receive little coverage, the assessments reached following the 2018 surveys (GMEU 2018) remain largely unchanged.

Most areas of the new compartments 7 and compartment 8 did not receive any coverage in 2018 and the numbers of birds using these compartments in 2020-2022 were significantly higher than the other compartments.

Consequently, these compartments have been cautiously assessed as having moderate potential to act as land Functionally Linked to the Morecambe Bay and Duddon Estuary SPA. However, neither compartment appeared to have any value for geese and/or swans.

In addition, the northern part of the Forrest Hills compartment 6, including Blea Tarn Reservoir and the surrounding land, maintains its assessment as having moderate potential because of the relatively high numbers of Golden Plover recorded in and close to the compartment in March 2018, and reasonable numbers of other notable bird species recorded throughout all of the surveys.

It is recommended that these areas are re-surveyed as part of any future applications for development in the compartments.

Compartments 1, 2, 3, 4 and 5 are considered to have low potential to act as Functionally Linked land but nonetheless do have some ecological value and we would recommend that the species recorded during the surveys going back to 2017 are considered when drawing up development plans.

There are several Biological Heritage Sites within the compartments including the Lancaster Canal, which bisects the whole area west of the M6.

Unlike in 2018, the winter weather did not have a major impact on the distribution of birds across the South Lancaster area, with the exception of the survey on January 9th, 2021, when heavy snowfall the preceding day increased the numbers of Lapwings and Golden Plovers using compartments, 2,3 and 4, the weather was cold and dry on the survey days and the ground unfrozen.



**Table 2 Summary scores for Compartments Surveyed**

Compartment no.	Compartment name	Potential for the Compartment to act as Functionally Linked Land
1	Land to the west of the Lancaster Canal	2 = Low potential
2	South Lancaster Urban Extension	2 = Low potential
3	South Lancaster Safeguarded Land	2 = Low potential
4	Ellel	2 = Low potential
5	Bailrigg	2 = Low potential
6	Forrest Hills	3 = Moderate potential
7	Land to the south of Tarnwater Lane (west of Lancaster Canal)	3 = Moderate potential
8	Land west of Galgate	3 = Moderate potential

## **5 REFERENCES**

Wintering Bird Surveys of Sites in Lancaster Under Consideration for Potential Future Development (GMEU 2017)

Assessment of Potentially Functionally Linked Land. Bailrigg Garden Village Lancaster (GMEU 2018)

Birds of Conservation Concern 4 (Eaton et al 2015)

British Birds 108 (708-746)