

Technical Appendix 8.1

Bloch Wind Farm: Breeding Bird Survey 2021

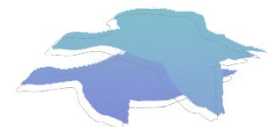


Report to Renewable Energy Systems Ltd

Steve Percival, Tracey Percival, Tom Lowe and Stuart Piner

Ecology Consulting, Swallow Ridge Barn, Old Cassop, Durham DH6 4QB

Email: steve.percival@ecologyconsult.co.uk



Ecology Consulting

March 2022

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BLOCH WIND FARM: BREEDING BIRD SURVEYS 2021

Introduction

1. This report presents the results of ornithological work carried out for the proposed Bloch Wind Farm, Dumfries and Galloway. This comprised a breeding bird survey to provide a breeding season's baseline data on the bird populations, activity and flight paths within the vicinity of the proposed wind farm site, to inform subsequent ornithological impact assessment.
2. The surveys were designed to take into account NatureScot (SNH 2017) guidance on bird surveys for wind farms. The surveys were undertaken by Tom Lowe and Stuart Piner, both highly experienced bird surveyors.

Study Area

3. The site is located about 5.5km south-west of Langholm, in Dumfries and Galloway. The breeding bird survey areas were chosen to include all areas within the possible zone of ornithological influence of the proposed wind farm. This included the proposed wind farm site, plus a 500m buffer (the core survey area, following NatureScot guidance, SNH 2017) and a 2km buffer for the key species surveys (the wider survey area), where access was possible and where there was potentially suitable habitat. The extents of these areas are shown in Figure 1. It was not possible to get full access to the buffer zone around the site, nor to parts of the site itself during April and May (when sensitivities due to lambing restricted access). The areas affected by these restrictions are shown in Figure 2. The main core survey area covered a total area of 17.8km² and the wider survey area 52.4km². It comprised predominantly upland moorland habitat, currently used mainly for grazing sheep, with the Solwaybank wind farm adjacent to the west (within an area of extensive conifer plantation).
4. The site lies mainly within the '*Border Hills*' NatureScot Natural Heritage Zone (NHZ20), though the southern edge of the survey area is within the '*West Southern Uplands and Inner Solway*' (NHZ19).

Breeding Bird Survey Methods

5. The aim of the breeding season fieldwork was to obtain data on the importance of the proposed wind farm site and its surrounds for breeding birds, and on the flight lines of key target species. They included moorland bird surveys, raptor surveys and black grouse surveys.

Core breeding bird survey

6. The main breeding bird walkover survey followed the standard moorland survey method (Brown and Shepherd 1993) but with two additional visits as recommended in current NatureScot guidance (SNH 2017). They commenced in April and continued

through to July, and were done between 8:30 hours and 18:00 hours. The survey dates were 26/28 April, 24/26 May, 23/24 June, and 13/14 July 2021. These surveys covered all of the open (i.e. non-forested) habitat within a buffer zone of 500m around the developable area where access/viewing was possible. Access was not possible into some of the site (where lambing activities prevented access), and moorland areas to the south (outside the land ownership) where surveys were restricted to public access. The restricted access area is shown in Figures 2 to 14 of this document.

7. All bird locations and behaviour were mapped to 1:10,000 scale, using the standard BTO Common Birds Census notation. All species were recorded. In addition, the survey effort per unit area was standardised to make the surveys as repeatable as possible, recording systematically for approximately 2 hours per km². A route was chosen to ensure that all parts of the study area were covered to within about 100m of the observer, where access was possible. The survey route was plotted onto the survey map as it was carried out.
8. The surveys avoided strong winds, heavy rain, fog and low cloud. Birds were located by walking, listening and scanning by eye and with binoculars. Standard BTO notation will be used to record the birds' activities; singing, calling, carrying nest material, nests or young found, repetitively alarmed adults, disturbance displaying, carrying food or in territorial dispute.
9. The survey data were analysed to determine spatially distinct clusters of records, equivalent to breeding territories (following Brown and Shepherd 1993), with the number of such territories used to calculate the breeding population for each species (Gilbert *et al.* 1998). A record in potentially suitable breeding habitat on a single visit was considered sufficient to indicate a potential breeding attempt.

Raptor breeding surveys (wider survey area)

10. As the survey area was considered likely, from the results of an initial desk study and the site location, to be used by a range of scarce raptors, raptor surveys of a 2km buffer zone around the developable area were undertaken during April-July 2021. Raptor surveys comprised walkovers where access was allowed, supplemented by a series of mini-VPs (shorter watches from additional VPs) to cover other areas, to detect displaying or nesting behaviour during the breeding season of raptor species in accordance with methods described in Gilbert *et al.* (1998) and Hardey *et al.* (2013). Surveys recorded all Schedule 1 and Annex I raptor species including those species for which evidence of breeding has previously been recorded in the vicinity (including goshawk, red kite, peregrine, barn owl and short-eared owl) and where potentially suitable breeding habitat for these species was present. This included surveys visits, undertaken on 26/28 April, 24/26 May, 23/24 June, 13/14 July and 19/22 August 2021.

Black Grouse Survey

11. Black grouse surveys were undertaken following the methods outlined in Gilbert *et al.* (1998). All suitable black grouse habitat within the site boundary and a 2km buffer was surveyed (where access was possible – see above). Surveys were carried out on 22/23 March 2021, 26/28 April and 24/26 May. Areas of suitable habitat to which

access was not possible were scanned with binoculars from the site boundary, from publicly accessible locations and from suitable vantage points within the site. A minimum three-visit survey was undertaken as follows (though additional data were also collected during other surveys):

- Visit 1: site visit to assess habitat for black grouse suitability;
- Visit 2: areas of suitable habitat with the potential to support lekking black grouse were visited twice on different mornings to establish presence/absence; and
- Visit 3: any locations where black grouse were recorded as present during the second visit were revisited in order to provide an accurate count of the number of lekking birds present. The survey was undertaken one hour prior to dawn until one hour after dawn.

Vantage point surveys

12. Vantage Point surveys were carried out to determine bird flight activity within the wind farm site to assess collision risk. The surveys quantified the bird numbers that could potentially be at risk of collision (including roost flight observations at dawn/dusk). All flight lines of target species were mapped, and the flight height of each flock recorded. Target species included all EU Birds Directive Annex 1 species, Wildlife & Countryside Act (1981) Schedule 1 species and Red-listed birds of Conservation Concern (Eaton *et al.* 2015), as per NatureScot (SNH 2017).
13. The specific aim of the VP surveys was to collect data on key target species flight activity to enable estimates to be made of:
 - The time spent flying over the survey area
 - The relative use made of different parts of the survey area
 - The proportion of flying time spent at different elevations above the ground.
14. Two vantage points were used to cover the potential wind farm site. The computer-generated viewsheds (using Global Mapper v21) are shown in Figure 1. For each VP, a basic 36 hours' VP surveys during the breeding season from each VP were carried out (as set out in NatureScot guidance, SNH 2017), spread evenly across the breeding season.
15. All key target species flights (and any other species of specific nature conservation interest) were recorded, irrespective of their distance from the vantage point. Observations were carried out throughout daylight hours but not in periods of severely reduced visibility (<3km).
16. During the VP surveys all key target species flights were mapped and cross-referenced to a standard recording form using a numbering system, and the flight height of each recorded. To estimate flight height as accurately as possible available reference structures were used. Heights were estimated as accurately as possible recorded as a raw estimate, rather than being summarised to height classes. Below 10m estimates were made to 1m, between 10 and 20m to 2m, between 20m and 50m to 5m, and above 50m to 10m. When birds were observed over an extended period, estimates of flight height were recorded every 30 seconds. The activity during each flight was also recorded. Particular attention was paid to any observations of birds at rotor height.

Breeding Bird Surveys 2021: Results

Core breeding bird survey

17. The breeding bird populations found within the core breeding bird survey area during the 2021 breeding bird surveys are summarised in Table 1. Note that as access was restricted to part of the survey area during April and May (see Figure 2), these numbers should be treated as minimum values and that some early breeding birds and birds that failed in the first part of the breeding season may have been missed.

Table 1. Breeding bird populations in the Bloch Wind Farm core survey area during April-July 2021.

Species	Estimated numbers of breeding pairs
Mallard	7
Goosander	2
Pheasant	11
Buzzard	11
Kestrel	1
Oystercatcher	5
Lapwing	3
Snipe	9
Curlew	9
Rock Dove	1
Stock Dove	5
Woodpigeon	57
Collared Dove	1
Cuckoo	9
Great Spotted Woodpecker	4
Skylark	295
Sand Martin	69
Swallow	21
House Martin	5
Tree Pipit	4
Meadow Pipit	1032
Grey Wagtail	8
Pied Wagtail	27
Dipper	3
Wren	80
Dunnock	12
Robin	45
Redstart	8
Whinchat	6
Stonechat	28
Wheatear	3
Blackbird	25
Song Thrush	21
Mistle Thrush	18
Grasshopper Warbler	6
Sedge Warbler	7
Blackcap	5
Whitethroat	2
Chiffchaff	10
Willow Warbler	110
Goldcrest	14
Spotted Flycatcher	3

Species	Estimated numbers of breeding pairs
Pied Flycatcher	1
Long-tailed Tit	4
Blue Tit	9
Great Tit	7
Coal Tit	38
Treecreeper	1
Jay	1
Jackdaw	21
Rook	7
Carrion Crow	37
Raven	4
Starling	13
House Sparrow	9
Chaffinch	100
Goldfinch	13
Siskin	37
Linnet	21
Lesser Redpoll	42
Common Crossbill	1
Bullfinch	2
Reed Bunting	57

18. The distributions of the breeding birds of conservation importance within the survey area in 2021 are shown on Figures 2 to 14. The more abundant species (i.e. 10 or more breeding pairs) of conservation interest have been presented separately for clarity.
- **Breeding waders** (Figure 2) – the distributions of breeding oystercatcher, lapwing, snipe and curlew is shown in Figure 2. Higher densities of these species were found in the central part around Bloch Farm (particularly oystercatcher and lapwing, though curlew were more widely distributed across the open moorland habitats).
 - **Skylarks** (Figure 3) and **Meadow Pipit** (Figure 4) were both abundant over all the open moorland habitat within the survey area.
 - **Swallow** (Figure 5) were widely distributed but associated mainly with agricultural and other buildings.
 - **Duncock** (Figure 6) were found mostly in the woodland habitat on the fringes of the survey area.
 - **Song Thrush**, (Figure 7), **Mistle Thrush** (Figure 8) **Willow Warblers** (Figure 9) and were all widely distributed but largely restricted to the woodland habitats on the edge of the survey area.
 - **Starling** (Figure 10) was another species associated mainly with agricultural and other buildings.
 - **Linnet** (Figure 11) and **Lesser redpoll** (Figure 12) were widely distributed but found mainly on the edges of the survey area rather than within the main moorland areas.
 - **Reed bunting** (Figure 13) were widely distributed across most of the open habitats across the survey area.

19. Other less abundant species of conservation importance (Figure 14) were found mainly in the fringes of the survey area and mostly associated with woodland habitats, with no important concentrations noted and few within the proposed wind farm site itself.
20. Additional species seen during the breeding bird surveys but not showing any evidence of breeding within the survey area included (peak counts): grey heron (1), golden plover (19 – migrant birds seen in April), lesser black-backed gull (20), swift (4) and fieldfare (46 – migrant birds seen in April).

Black Grouse survey results

21. There were no records of black grouse during any of the specific surveys for this species or any other surveys.
22. The only record of note during the black grouse surveys was a single golden plover seen on moorland 1.8km SW from the site on 28/4/21.

Raptor survey results

23. **Hen Harrier** – there was a record of a single male over-flying the site on 26/4/21 during the VP surveys.
24. **Goshawk** – a single was seen overflying the northern edge of the core survey area during the raptor surveys (on 14/7/21), and two during the VP surveys over-flying the site (on 13/7/21 and 21/8/21).
25. **Osprey** – a single was seen over-flying the site during the VP surveys on 13/7/21.
26. **Peregrine** - there was a single record of this species overflying during the breeding raptor surveys (on 28/4/21) and two during the VP surveys (see Figure 21), but no evidence of breeding within the core or the wider survey area.
27. No evidence was found that any of these species were breeding within the core or the wider survey areas.

Vantage Point Survey Results

28. The rates of bird flight movement observed across the survey area during the vantage point surveys are summarised in Table 2. This gives the flight rate per hour recorded in each month and the total number of flights recorded.
29. Table 2 also gives the percentage of flights of each species that were recorded at rotor height (taking rotor height conservatively - to allow for errors in estimation and uncertainty as to turbine specification at this stage - as between 21m and 200m above ground level).

Table 2. Bird flight rates recorded over the Bloch Wind Farm survey area during April-August 2021 vantage point surveys. N = 36 hours total observation from each of the three VPs.

Species	Flight rate (birds/hour)					Total number of birds overflying	% flights at rotor height
	April	May	June	July	Aug		
Greylag Goose	0.47	0	0	0	0	7	25%
Mallard	0.13	0.13	0	0	0	4	33%
Goosander	0	0	0	0	0.07	1	100%
Grey Heron	0	0	0.20	0	0	3	100%
Hen Harrier	0.07	0	0	0	0	1	100%
Goshawk	0	0	0	0.07	0.07	2	50%
Buzzard	0.47	1.53	1.93	1.04	0.43	79	67%
Osprey	0	0	0	0.07	0	1	100%
Kestrel	0.13	0.13	0.67	0.74	0	24	57%
Peregrine	0	0	0.13	0	0	2	0%
Oystercatcher	0.33	0.13	0.40	0.07	0	14	11%
Lapwing	0.40	1.27	0	0.89	3.14	81	8%
Snipe	0	0.13	0	0.37	0.21	10	57%
Curlew	1.87	0.87	0.53	0	0	49	31%
Common Gull	0	0	0	0.07	0	1	100%
Lesser Black-backed Gull	1.47	1.33	1.47	1.41	0.14	85	63%
Herring Gull	0.13	0	0.07	0	0	3	67%
Great Black-backed Gull	0	0.13	0	0.22	0.14	7	86%

30. Key species' flight lines are mapped in Figures 15-19. Oystercatcher flight activity (Figure 15) was broadly similar to the distribution of the breeding birds, concentrated mainly around the central part of the survey area near Bloch Farm.
31. Lapwing flights (Figure 16) and snipe flights (Figure 17) were also concentrated around their main breeding areas in the central part of the survey area.
32. Curlew flight activity was widespread across most of the survey area, reflecting their abundance and their wide breeding distribution (Figure 18).
33. Scarce raptors (Figure 19) (hen harrier, goshawk, osprey and peregrine) were only seen very infrequently, and no particular concentrations of activity were apparent.

Conservation Evaluation of Breeding Bird Populations

34. The conservation value of the breeding bird populations was determined using the criteria specified in Table 3 (from Percival 2007) and is summarised in Table 4. This includes the criteria adopted by NatureScot in Guidelines for Selection of Biological SSSIs (Drewitt *et al.* 2020), using 1% of the resource to define international and national importance (Frost *et al.* 2021). An additional category of regional importance was assigned for species approaching the threshold for national importance and those for which the survey area held a notable concentration (>1%) in a NHZ context (Wilson *et al.* 2015). A further category of 'local importance' was used for species that did not reach regional importance but were still of some ecological value. This included all species on the red or amber lists of the 'Birds of Conservation Concern' (Stanbury *et*

al. 2021) that did not reach national or regional importance at the development site. National (GB) and international wintering waterfowl baseline populations have been taken from the most recently published population figures (Frost *et al.* 2021) from the national Wetland Birds Survey and other species from Woodward *et al.* (2020). In addition, listing on Annex 1 of the EU Birds Directive, Schedule 1 of the Wildlife and Countryside, NERC Act Section 41 priority species and Scottish BAP species were all considered in the evaluation process.

Table 3. Definition of terms relating to the conservation value of the ornithological receptors at the site.

Conservation Value	Definition
VERY HIGH	Cited interest of SPAs, SACs and SSSIs. Cited means mentioned in the citation text for the site as a species for which the site is designated (SPAs/SACs) or notified (SSSIs).
HIGH	Other species that contribute to the integrity of an SPA or SSSI. A local population of more than 1% of the national population of a species. EU Birds Directive Annex 1, EU Habitats Directive priority habitat/species and/or W&C Act Schedule 1 species. Ecologically sensitive species, e.g. large birds of prey or rare birds (<300 breeding pairs in the UK).
MEDIUM	Regionally important population of a species, either because of population size (>1% NHZ) or distributional context. NERC Act Section 41 priority species (if not covered above).
LOW	Any other species of conservation interest, e.g. species listed on the Birds of Conservation Concern not covered above. Scottish BAP species (if not covered above).

Table 4. Conservation evaluation of the breeding bird populations in the Bloch Wind Farm core survey area.

Species	Estimated breeding pairs 2021	>1% NHZ	EU Birds Dir Ann 1	W and C Act Sch 1	Red [R]/ Amber [A] List	UK priority sp	Scottish BAP sp	Conservation Value
<i>Breeding Species:</i>								
Mallard	7				A			Low
Goosander	2							Nil
Pheasant	11							Nil
Buzzard ²	11							Nil
Kestrel	1				A		✓	Low
Oystercatcher	5				A			Low
Lapwing	3				R	✓	✓	Medium
Snipe ²	9				A			Low
Curlew ²	9				R	✓	✓	Medium
Rock Dove	1							Nil
Stock Dove	5				A			Low
Woodpigeon	57				A			Low
Collared Dove	1							Nil
Cuckoo ^{2.5}	9				R	✓	✓	Medium
Great Spotted Woodpecker	4							Nil
Skylark	295				R	✓	✓	Medium
Sand Martin	69							Nil

Species	Estimated breeding pairs 2021	>1% NHZ	EU Birds Dir Ann 1	W and C Act Sch 1	Red [R]/ Amber [A] List	UK priority sp	Scottish BAP sp	Conservation Value
Swallow	21							Nil
House Martin	5				R			Low
Tree Pipit	4				R	✓	✓	Medium
Meadow Pipit	1032				A			Low
Grey Wagtail ²	8				A			Low
Pied Wagtail	27							Nil
Dipper ^{2,5}	3				A			Low
Wren	80				A			Low
Dunnock	12				A	✓		Medium
Robin	45							Nil
Redstart	8							Nil
Whinchat ²	6				R			Low
Stonechat ²	28							Nil
Wheatear ¹	3				A			Low
Blackbird	25							Nil
Song Thrush	21				A	✓	✓	Medium
Mistle Thrush	18				R			Low
Grasshopper Warbler	6				R	✓	✓	Medium
Sedge Warbler	7				A			Low
Blackcap	5							Nil
Whitethroat	2							Nil
Chiffchaff	10							Nil
Willow Warbler	110				A			Low
Goldcrest	14							Nil
Spotted Flycatcher	3				R	✓	✓	Medium
Pied Flycatcher	1				A			Low
Long-tailed Tit	4							Nil
Blue Tit	9							Nil
Great Tit	7							Nil
Coal Tit	38							Nil
Treecreeper	1							Nil
Jay	1							Nil
Jackdaw	21							Nil
Rook	7				A			Low
Carrion Crow	37							Nil
Raven	4							Nil
Starling	13				R	✓		Medium
House Sparrow	9				R	✓	✓	Medium
Chaffinch	100							Nil
Goldfinch	13							Nil
Siskin	37						✓	Low
Linnet	21				R	✓	✓	Medium
Lesser Redpoll	42					✓	✓	Medium
Common Crossbill	1			✓				High
Bullfinch	2				A	✓	✓	Medium
Reed Bunting	57				A	✓	✓	Medium
<i>Additional non-breeding species:</i>	<i>Peak count</i>							
Greylag Goose	7				A			Low
Grey Heron	1							Nil
Hen Harrier	1		✓	✓	R		✓	High
Goshawk	1			✓				High

Species	Estimated breeding pairs 2021	>1% NHZ	EU Birds Dir Ann 1	W and C Act Sch 1	Red [R]/ Amber [A] List	UK priority sp	Scottish BAP sp	Conservation Value
Osprey	1		✓	✓	A		✓	High
Peregrine	1		✓	✓			✓	High
Golden Plover	19		✓				✓	High
Common Gull	1				A			Low
Lesser Black-backed Gull	20				A			Low
Herring Gull	2				R	✓	✓	Medium
Great Black-backed Gull	3				A			Low
Swift	4				R		1	Low
Fieldfare	46				R			Low

Note: superscripts indicate contribution to the JNCC breeding bird assemblage score for the main habitat within the survey area, 'Upland moorland and grassland without waterbodies'.

35. Only one high value species was recorded breeding within the core breeding bird survey area during 2021, common crossbill (with a single pair in woodland on the northern edge of the site).
36. Fifteen breeding species were classed as medium conservation value: lapwing, curlew, cuckoo, skylark, tree pipit, dunnoek, song thrush, grasshopper warbler, spotted flycatcher, starling, house sparrow, linnet, lesser redpoll, bullfinch and reed bunting. All were classed as medium value for their listing as NERC Act Section 41 priority species (UK Biodiversity Action Plan priority species).
37. A further nineteen breeding species were classed as low sensitivity, through their listing on RSPB *et al.*'s (Stanbury *et al.* 2021) amber lists of birds of conservation concern and/or the Scottish Biodiversity List.
38. The overall conservation value of the breeding bird community, measured from the core survey data as the breeding bird assemblage score, was 18. This is below the threshold for national importance (27) but above the threshold for regional importance (14) for the main habitat within the survey area, 'Upland moorland and grassland without water bodies' (Drewitt *et al.* 2020). The core survey area therefore supports a regionally important breeding bird community.

Conclusions

39. The 2021 breeding bird surveys have found that the survey area supports a range of upland breeding species and a regionally important assemblage.
40. One species specially protected from disturbance under Schedule 1 of the 1981 Wildlife and Countryside Act found breeding in the core survey area, common crossbill. This was outside the proposed wind farm site boundary (and outside the area where they would be likely to be affected by the wind farm).
41. The main target species at risk of collision would be the breeding waders using the site, particularly lapwing and curlew (those these did not occur at particularly high density). Raptor flight activity over the site at rotor height (other than buzzard) occurred at only a very low level.

42. Careful site design and appropriate mitigation where necessary should enable any potentially significant effects on these species to be avoided. No spatial constraints were identified within the current site boundary in relation to breeding birds.
43. Given the widespread distribution of curlew across the site, it will be difficult to avoid this species in the design process, so alternative mitigation measures, e.g. habitat enhancement away from the wind farm, may be required.

References

Brown, A. F. and K. B. Shepherd. (1993). A method for censusing upland breeding waders. *Bird Study* 40: 189-195.

Calladine, J., G. Garner, C. Wernham, and Thiel, A. (2009). The influence of survey frequency on population estimates of moorland breeding birds. *Bird Study* 56: 381-388.

Drewitt, A.L., Whitehead, S. and Cohen, S. 2020. Guidelines for the Selection of Biological SSSIs. Part 2: Detailed Guidelines for Habitats and Species Groups. Chapter 17: Birds (Version 1.1). Joint Nature Conservation Committee, Peterborough.

Frost, T.M., Calbrade, N.A., Birtles, G.A., Hall, C., Robinson, A.E., Wotton, S.R., Balmer, D.E. and Austin, G.E. 2021. Waterbirds in the UK 2019/20: The Wetland Bird Survey. BTO/RSPB/JNCC. Thetford.

Gilbert, G., D. W. Gibbons, and J. Evans. (1998). *Bird Monitoring Methods: a manual of techniques for key UK species*. RSPB /BTO/WWT/JNCC/ITE/The Seabird Group.

Hardey, J., H. Q. P. Crick, C. V. Wernham, H. T. Riley, B. Etheridge, and D. B. A. Thompson. (2013). *Raptors: a field guide to survey and monitoring*. 3rd Edition. The Stationary Office Ltd, Edinburgh.

Percival, S.M. 2007. Predicting the effects of wind farms on birds in the UK: the development of an objective assessment methodology. *Birds and Wind Farms: risk assessment and mitigation* (ed. M. de Lucas, Janss, G.F.E. and Ferrer, M.). Quercus, Madrid.

Ruddock, M. & Whitfield, D. P. 2007. A Review of Disturbance Distances in Selected Bird Species. A report from Natural Research (Projects) Ltd to Scottish Natural Heritage.

Scottish Natural Heritage (2016). Environmental Statements and Annexes of Environmentally Sensitive Bird Information Guidance for Developers, Consultants and Consultees. Version 2. SNH Guidance.

Scottish Natural Heritage (2017). Recommended bird survey methods to inform impact assessment of onshore wind farms. SNH Guidance.

Stanbury, A., M. Eaton, N. Aebischer, D. Balmer, A. Brown, A. Douse, P. Lindley, N. McCulloch, D. Noble, and I. Win. 2021. The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* 114:723-747.

Woodward, I., Aebischer, N., Burnell, D., Eaton, M., Frost, T., Hall, C., Stroud, D. and Noble, D. 2020. Population estimates of birds in Great Britain and the United Kingdom. *British Birds*, 113: 69-104.

Bloch Wind Farm

FIGURE 1

Breeding Bird Survey Areas 2021

KEY:

- Site Boundary
- Proposed turbines (scoping)
- Vantage Point (VP) locations
- Core Breeding Bird Survey Area 2021
- VP1 Viewshed
- VP2 Viewshed
- Solwaybank wind farm tracks
- Solwaybank turbines (operational)



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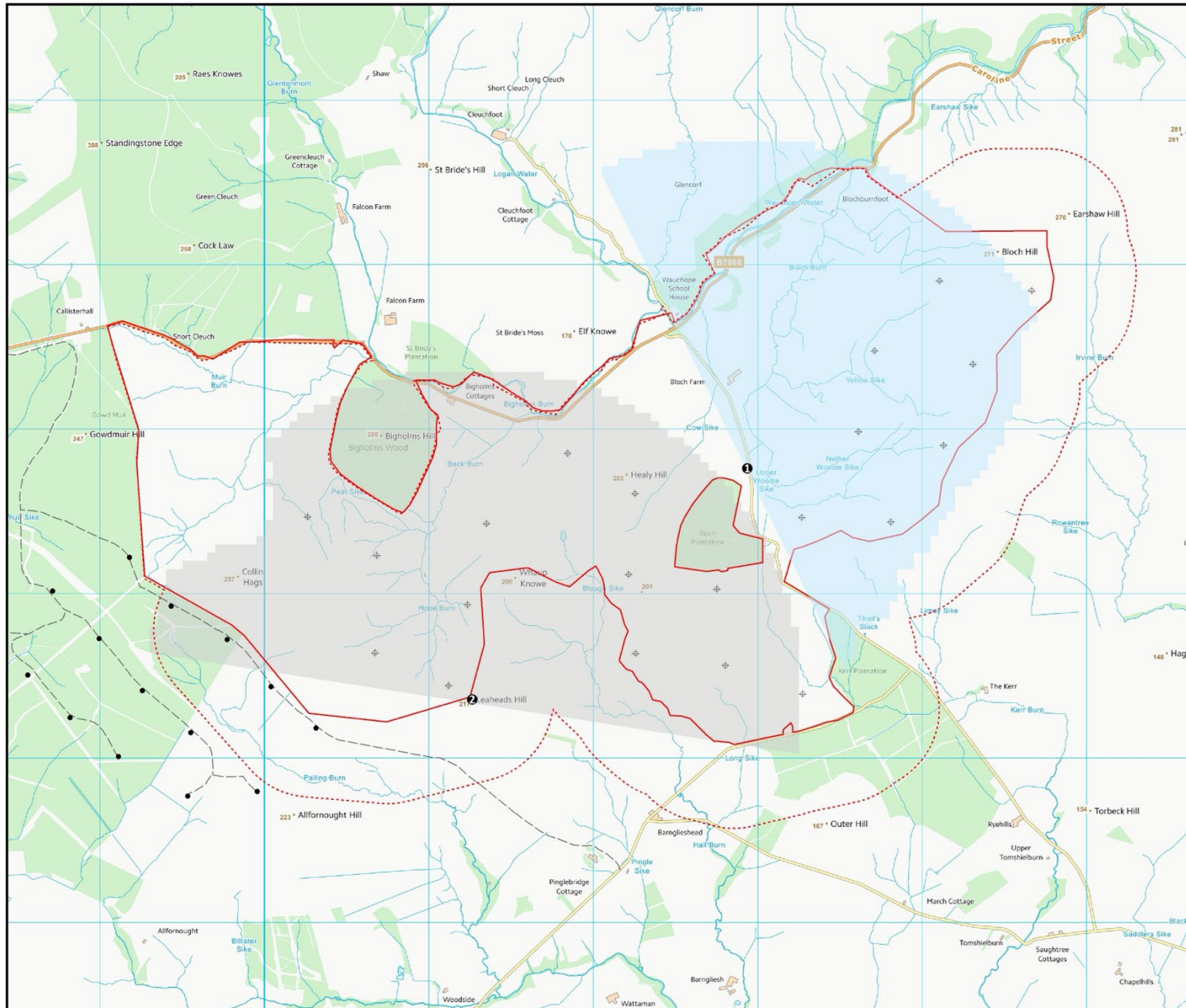
SCALE: DATE: N/A PROJECT NO: N/A

PROJECT NUMBER: SB2021-1

SCALE - 1:22,000 @ A3

EXTENSION BREEDING BIRD SURVEYS 2021

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FIGURE 2

Distribution of Breeding Waders, 2021

KEY:

Site Boundary

Core Breeding Bird Survey Area 2021

Restricted access

No access

Access only after May

Approx. breeding locations:

CU - Curlew

L - Lapwing

OC - Oystercatcher

SN - Snipe



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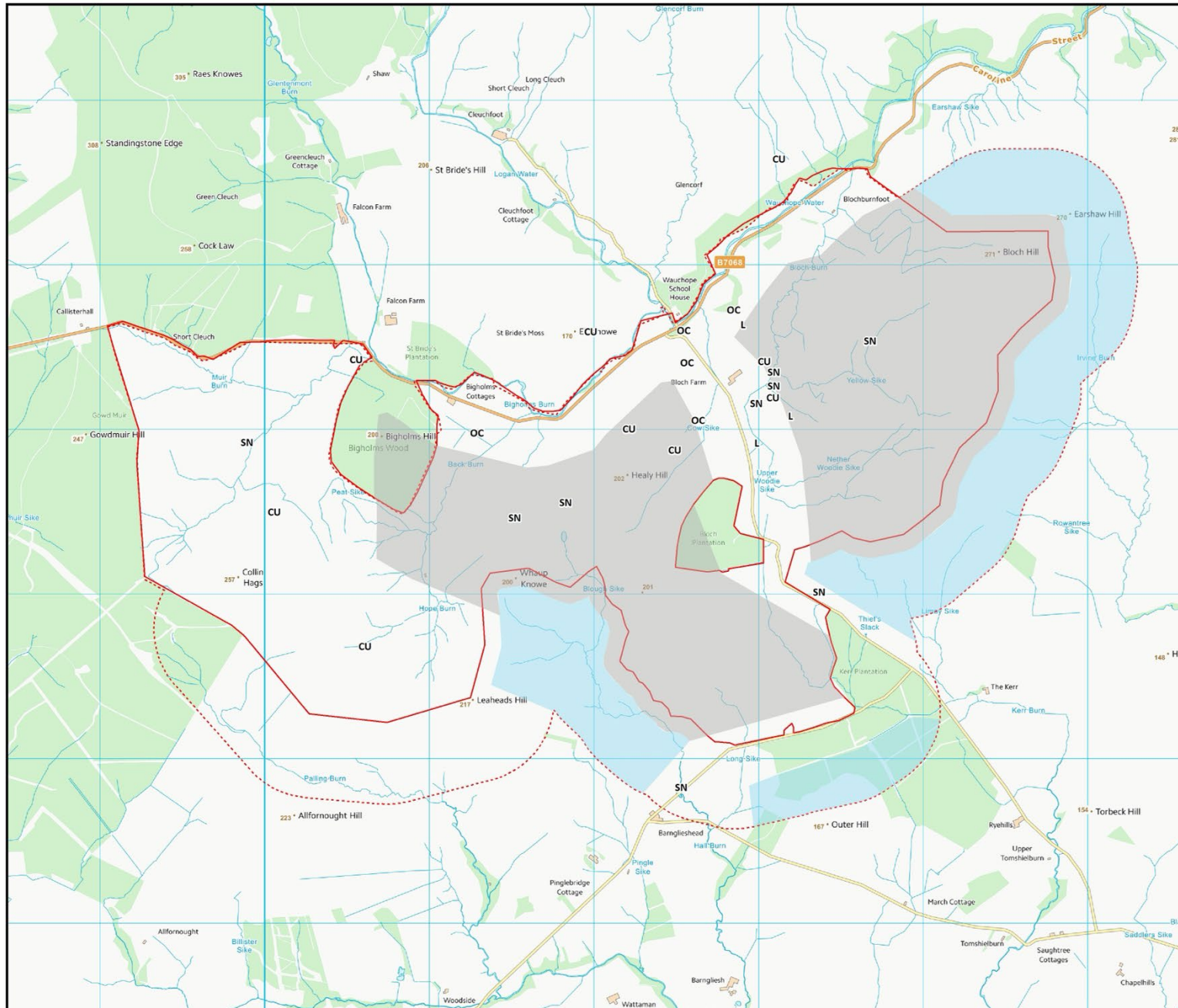
PROJECT NO: N/A DRAWING NO: N/A

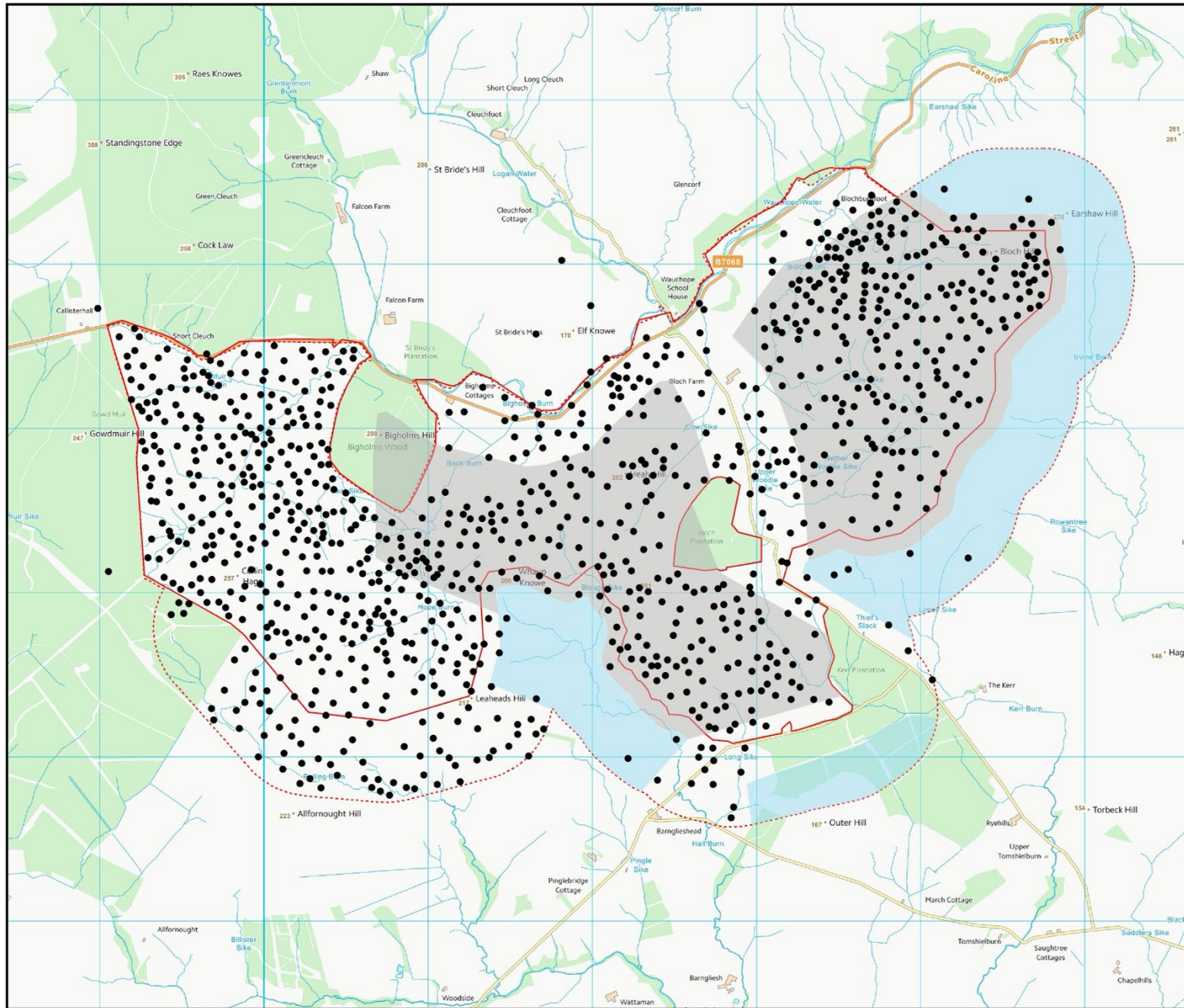
ISSUANCE NUMBER: SB2021-1

SCALE - 1:22,000 @ A3

BREEDING BIRD SURVEYS 2021

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Bloch Wind Farm

FIGURE 4

Distribution of Breeding Meadow Pipit, 2021

KEY:

- Site Boundary
- Core Breeding Bird Survey Area 2021
- Restricted access**
- No access
- Access only after May
- Approx. breeding locations:



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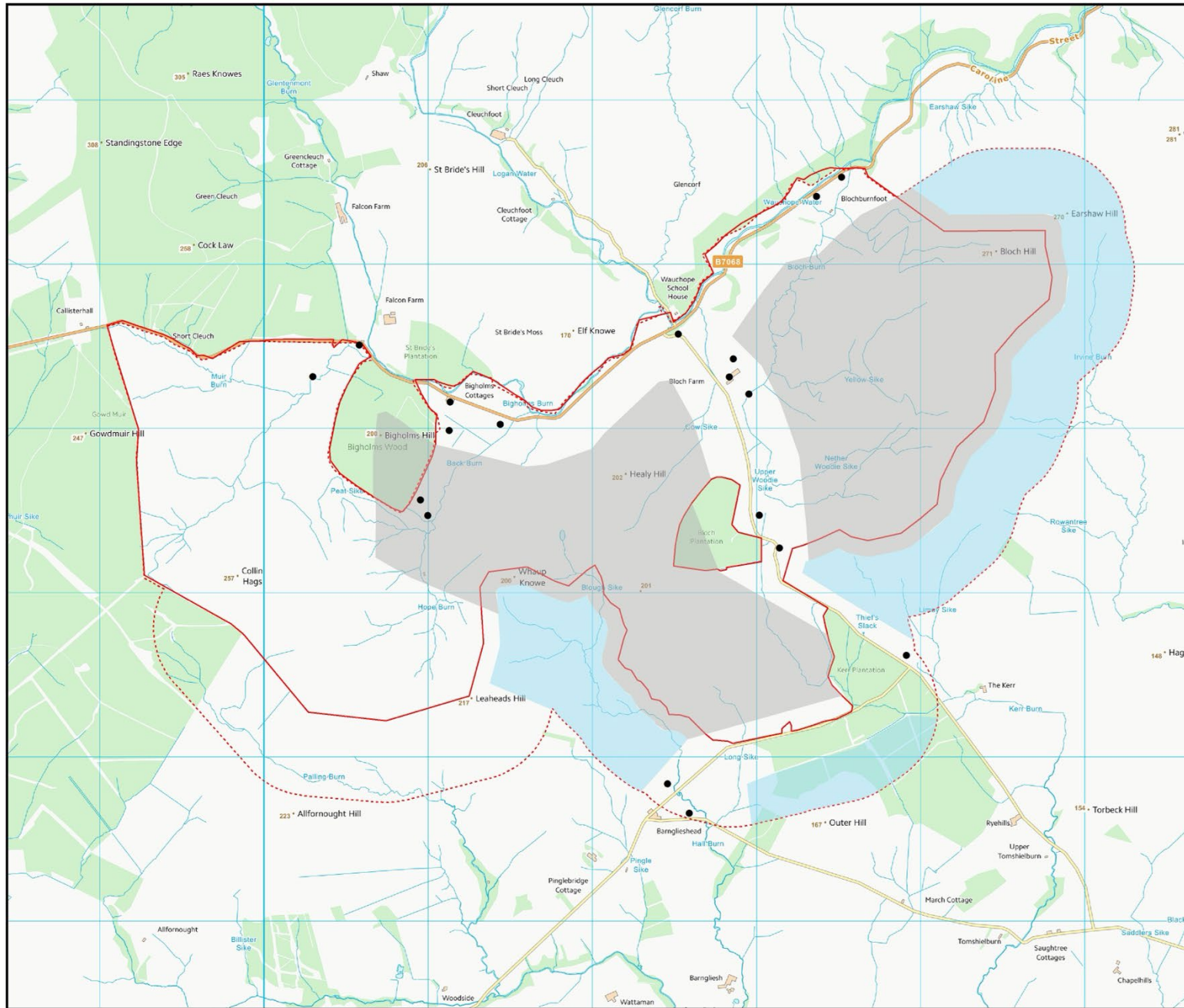
LAYOUT DATE: N/A	LAYOUT NO.: N/A
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DRAWING NUMBER: SB2021-1

SCALE - 1:22,000 @ A3

BREEDING BIRD SURVEYS 2021

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FIGURE 5

Distribution of Breeding Swallow, 2021

KEY:

Site Boundary

Core Breeding Bird Survey Area 2021

Restricted access

No access

Access only after May

Approx. breeding locations:



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DOCUMENT NO: SB2021-1

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BREEDING BIRD SURVEYS 2021

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FIGURE 6

Distribution of Breeding Dunnock, 2021

KEY:

Site Boundary

Core Breeding Bird Survey Area 2021

Restricted access

No access

Access only after May

Approx. breeding locations:



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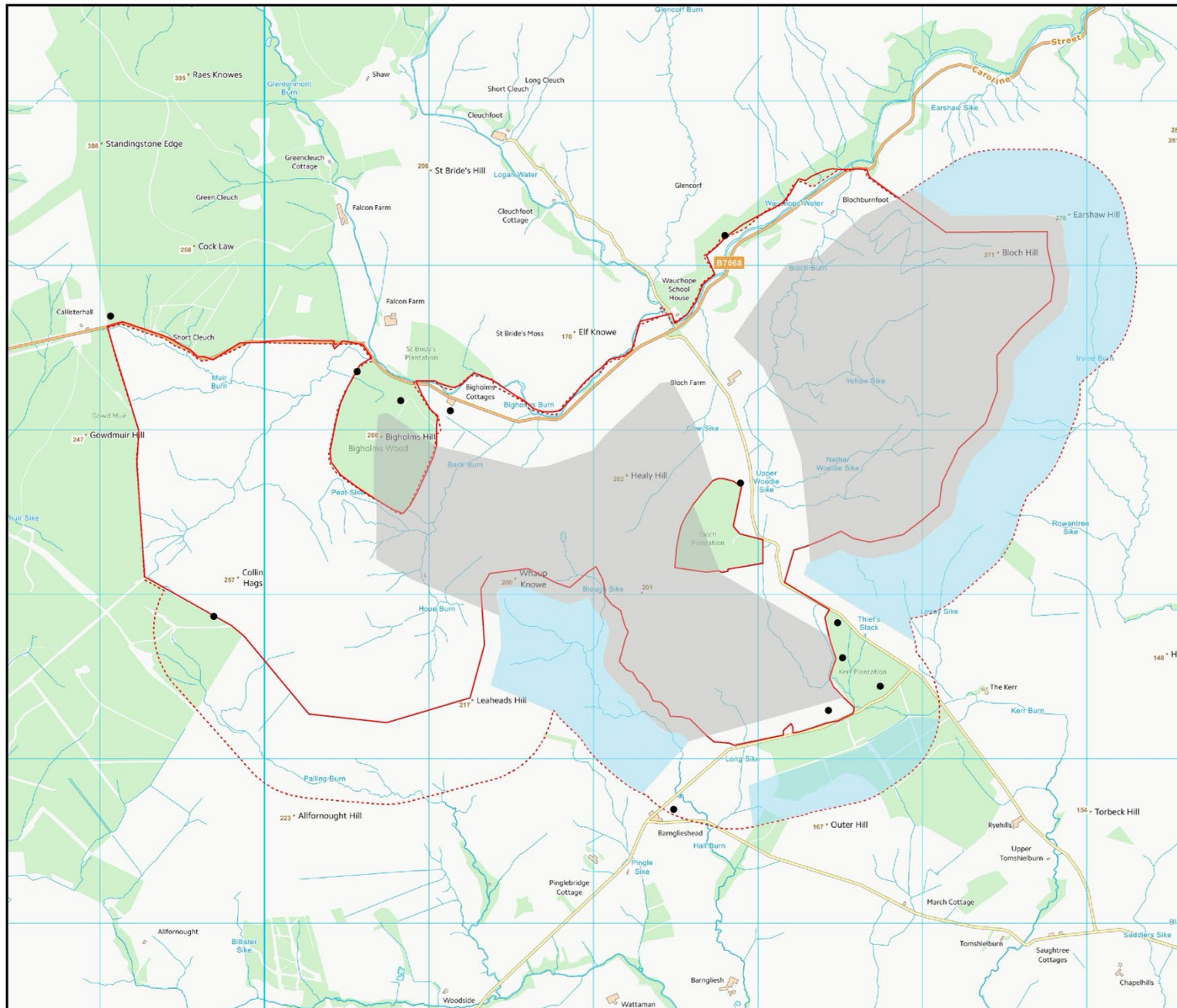
PROJECT NO: N/A DRAWING NO: N/A

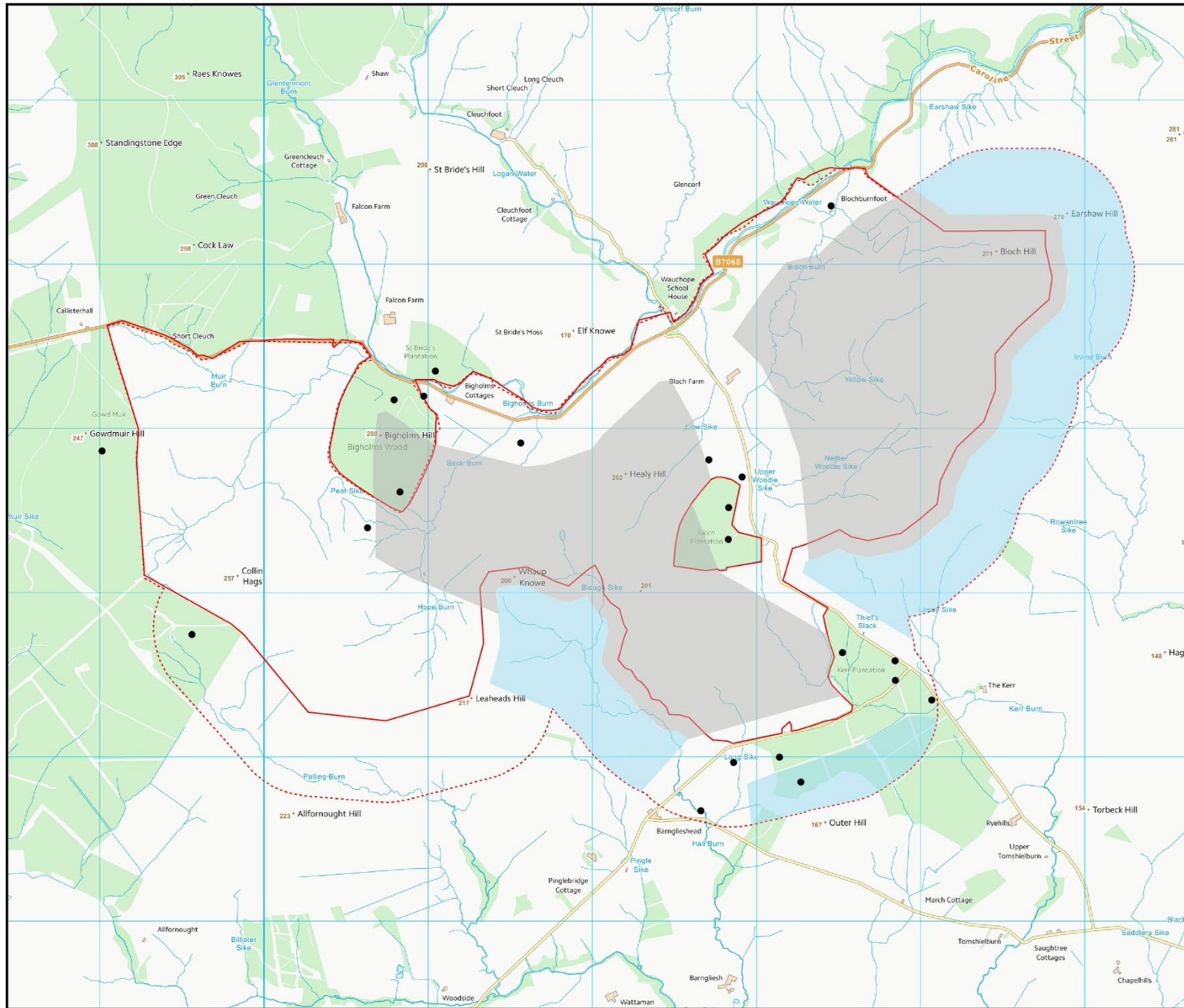
ISSUANCE NUMBER: SB2021-1

SCALE - 1:22,000 @ A3

**BREEDING BIRD
SURVEYS 2021**

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FIGURE 7

Distribution of Breeding Song Thrush, 2021

KEY:

Site Boundary

Core Breeding Bird Survey Area 2021

Restricted access

No access

Access only after May

Approx. breeding locations:



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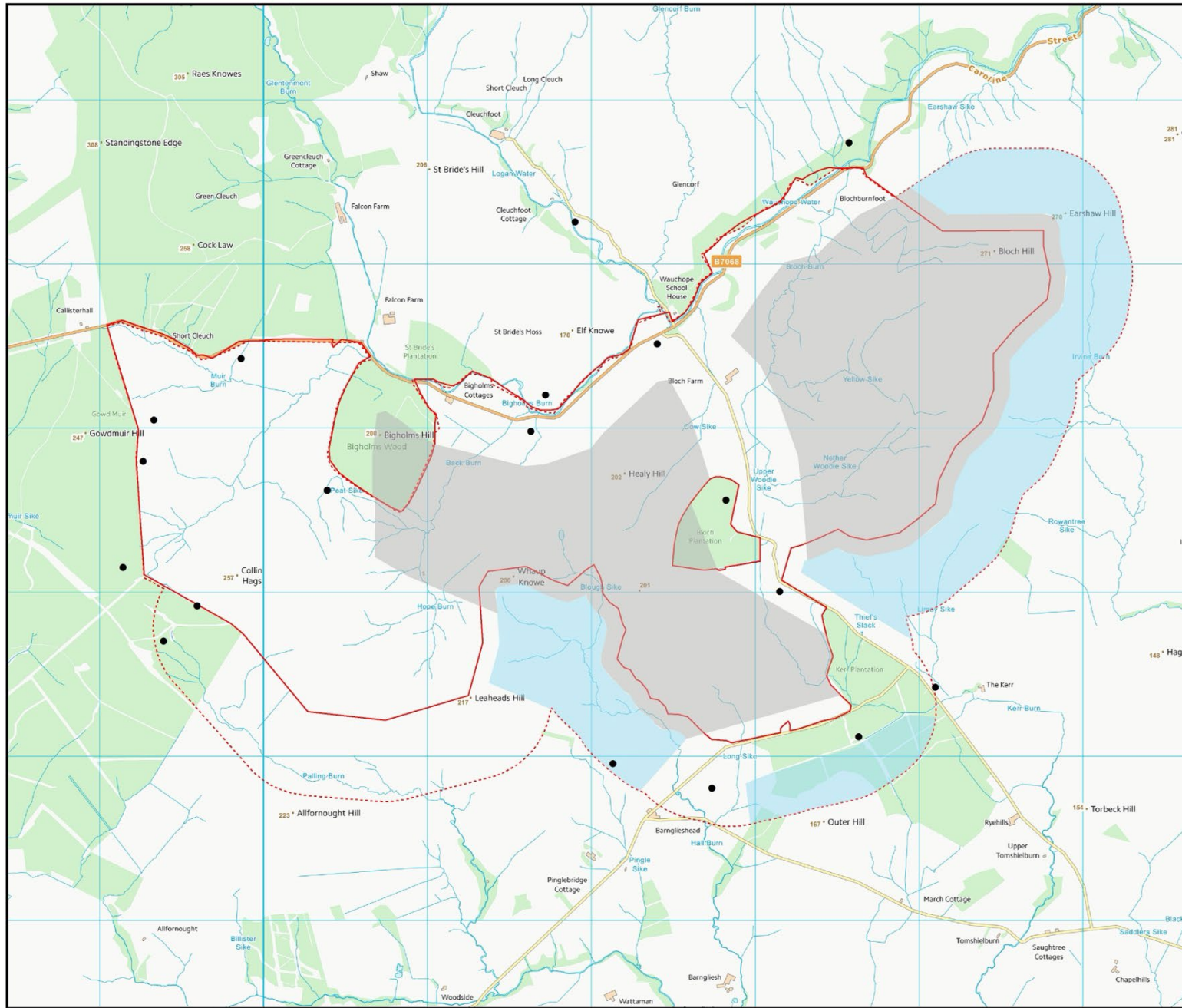
PROJECT NO: N/A DRAWING NO: N/A

ISSUANCE NUMBER: SB2021-1

SCALE - 1:22,000 @ A3

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FIGURE 8

Distribution of Breeding Mistle Thrush, 2021

KEY:

- Site Boundary
- Core Breeding Bird Survey Area 2021
- Restricted access**
- No access
- Access only after May
- Approx. breeding locations:



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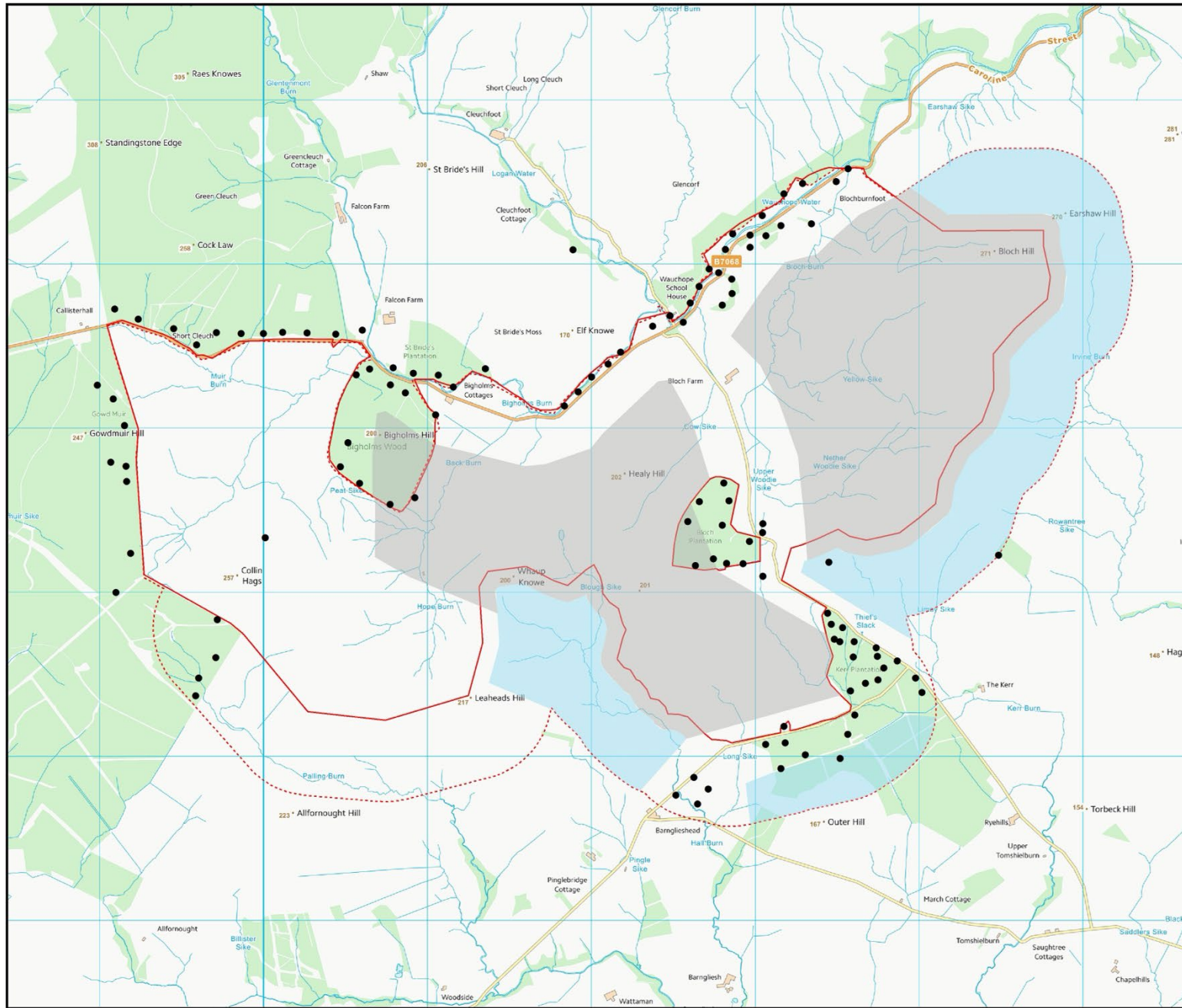
PROJECT ID: N/A | CLIENT NO: N/A

DOCUMENT NUMBER: SB2021-1

SCALE - 1:22,000 @ A3

BREEDING BIRD SURVEYS 2021

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FIGURE 9

Distribution of Breeding Willow Warbler, 2021

KEY:

Site Boundary

Core Breeding Bird Survey Area 2021

Restricted access

No access

Access only after May

● Approx. breeding locations:



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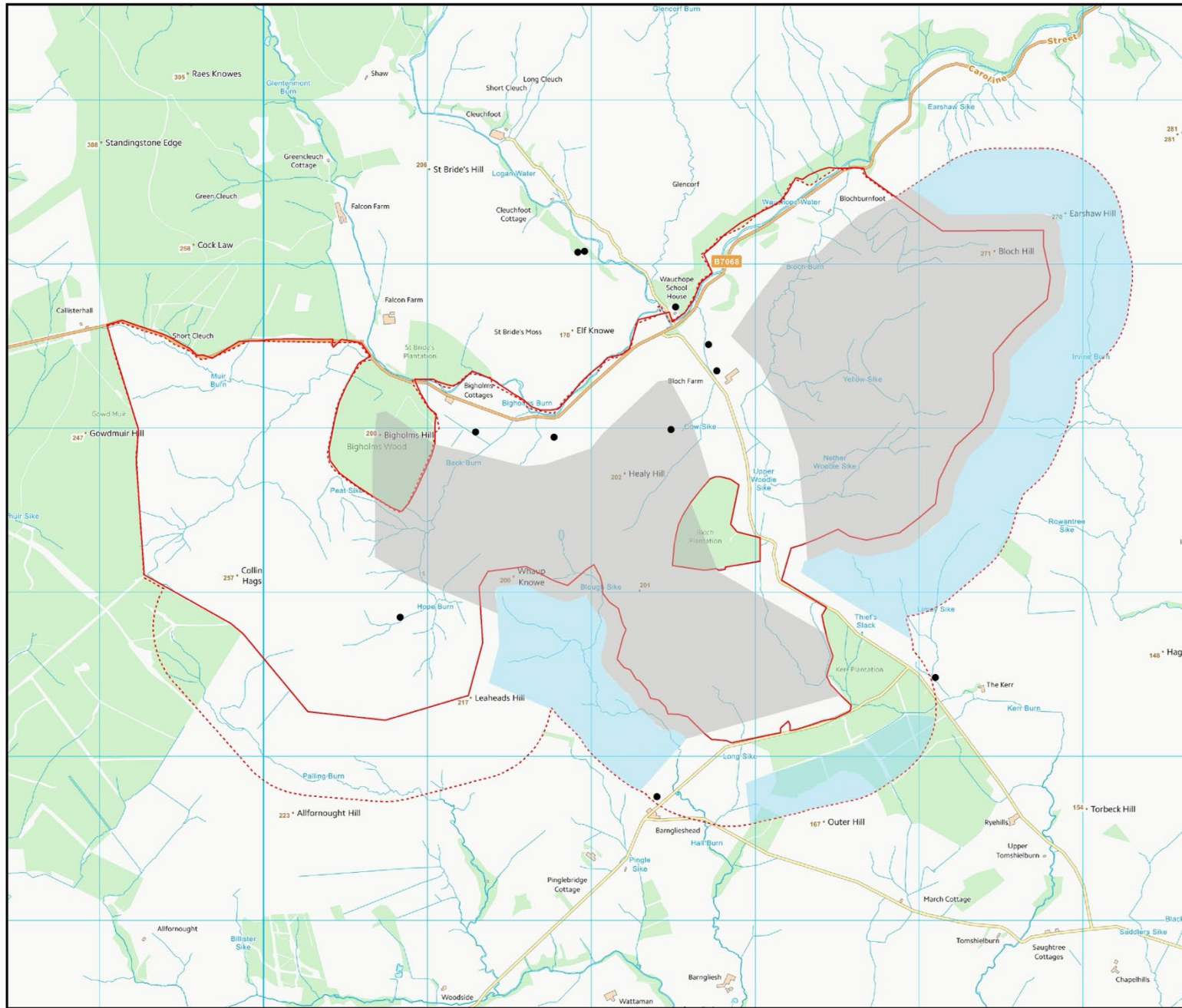
PROJECT CODE: N/A | CLIENT NO.: N/A

DOCUMENT NUMBER: SB2021-1

SCALE - 1:22,000 @ A3

BREEDING BIRD SURVEYS 2021

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FIGURE 10

Distribution of Breeding Starling, 2021

KEY:

Site Boundary

Core Breeding Bird Survey Area 2021

Restricted access

No access

Access only after May

● Approx. breeding locations:



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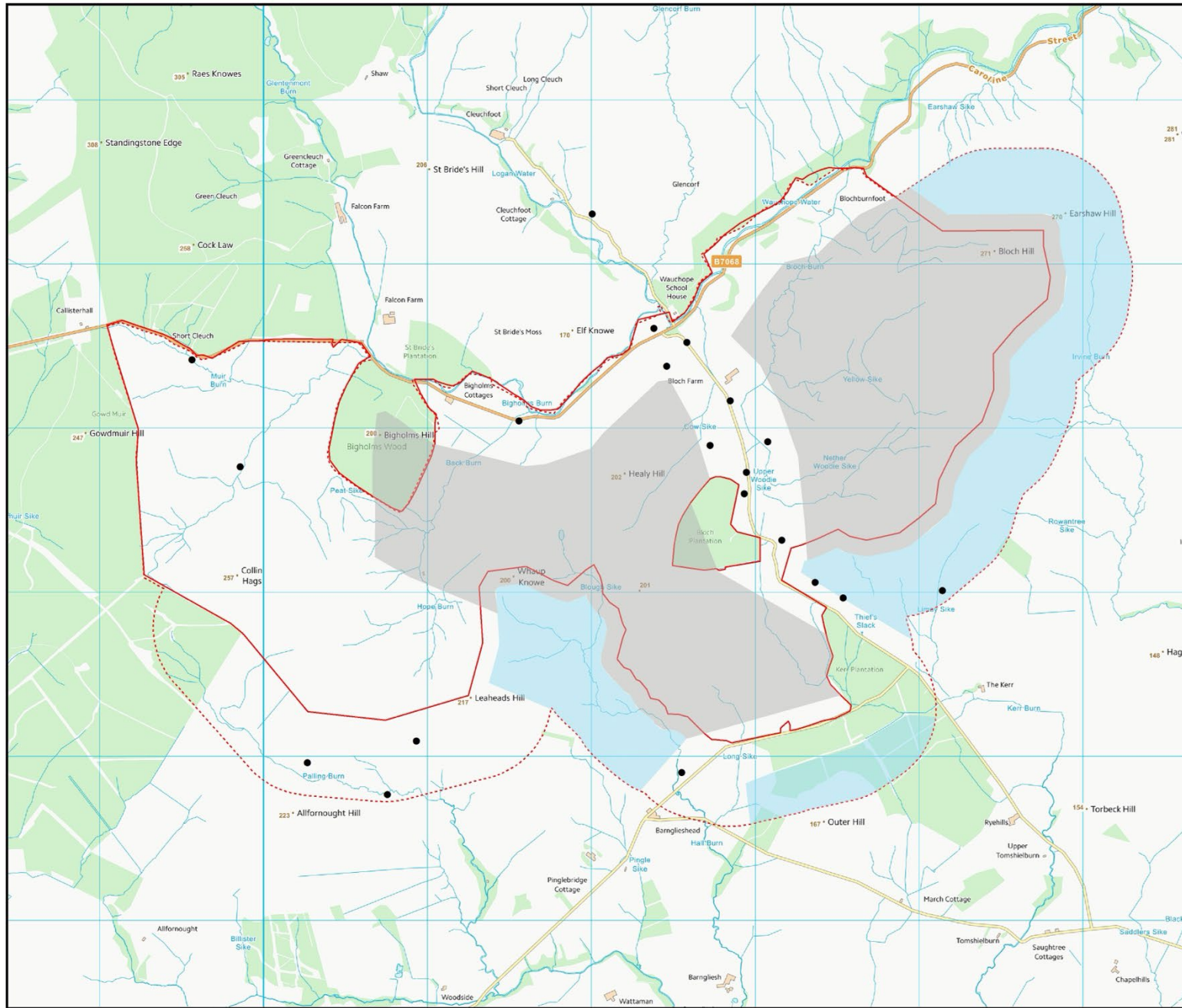
PROJECT NO: N/A | CLIENT NO: N/A

DOCUMENT NUMBER: SB2021-1

SCALE - 1:22,000 @ A3

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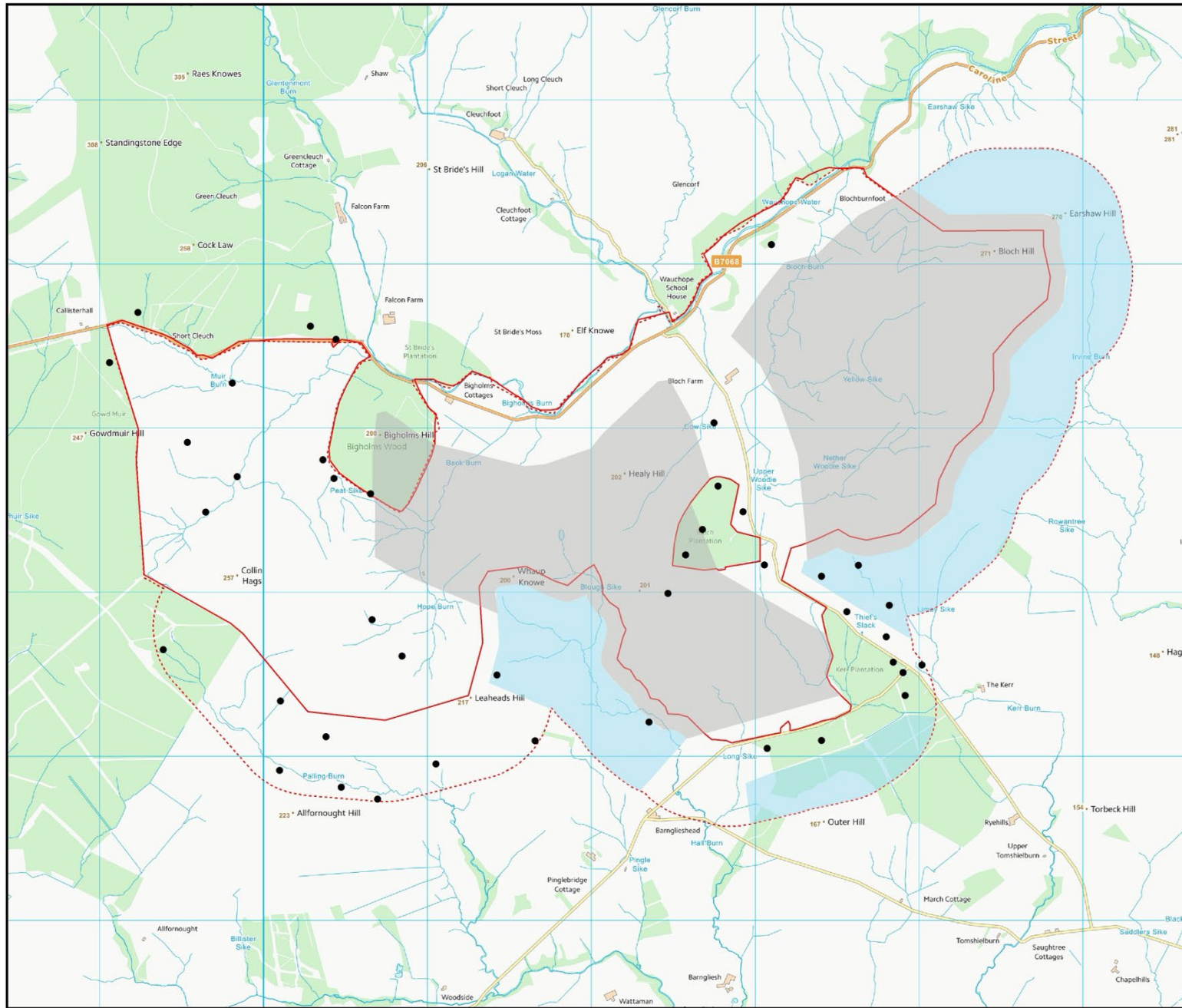
FIGURE 11

Distribution of Breeding Linnet, 2021

- KEY:**
- Site Boundary
 - Core Breeding Bird Survey Area 2021
 - Restricted access**
 - No access
 - Access only after May
 - Approx. breeding locations:



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PROJECT NO:	N/A
DRAWING NUMBER:	SB2021-1
SCALE - 1:22,000 @ A3	
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FIGURE 12

Distribution of Breeding Lesser Redpoll, 2021

KEY:

- Site Boundary
- Core Breeding Bird Survey Area 2021
- Restricted access**
- No access
- Access only after May
- Approx. breeding locations:



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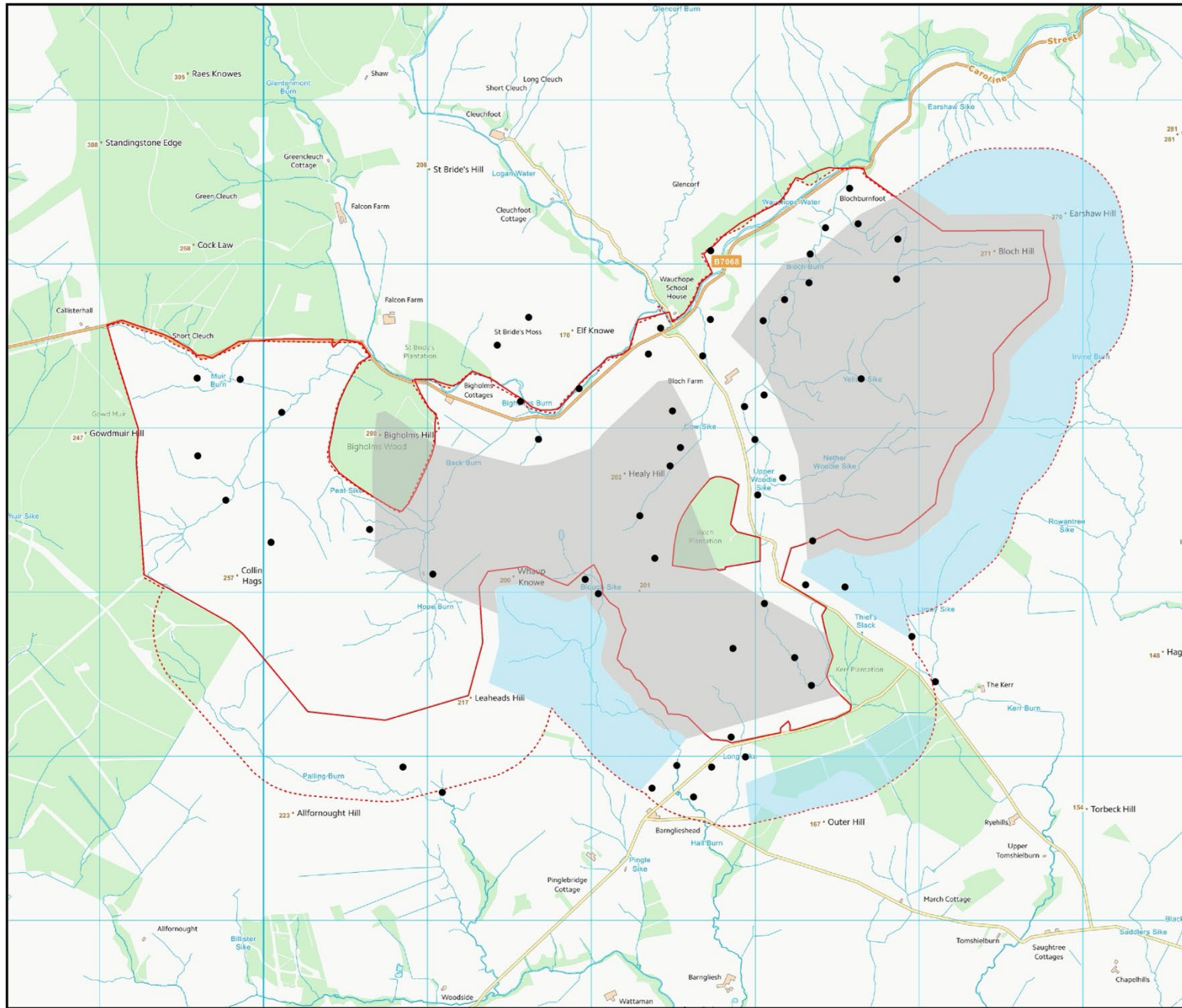
PROJECT NO: N/A	PROJECT NO: N/A
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DOCUMENT NUMBER: SB2021-1

SCALE - 1:22,000 @ A3

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FIGURE 13

Distribution of Breeding Reed Bunting, 2021

KEY:

Site Boundary

Core Breeding Bird Survey Area 2021

Restricted access

No access

Access only after May

● Approx. breeding locations:



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DOCUMENT NUMBER: SB2021-1

SCALE - 1:22,000 @ A3

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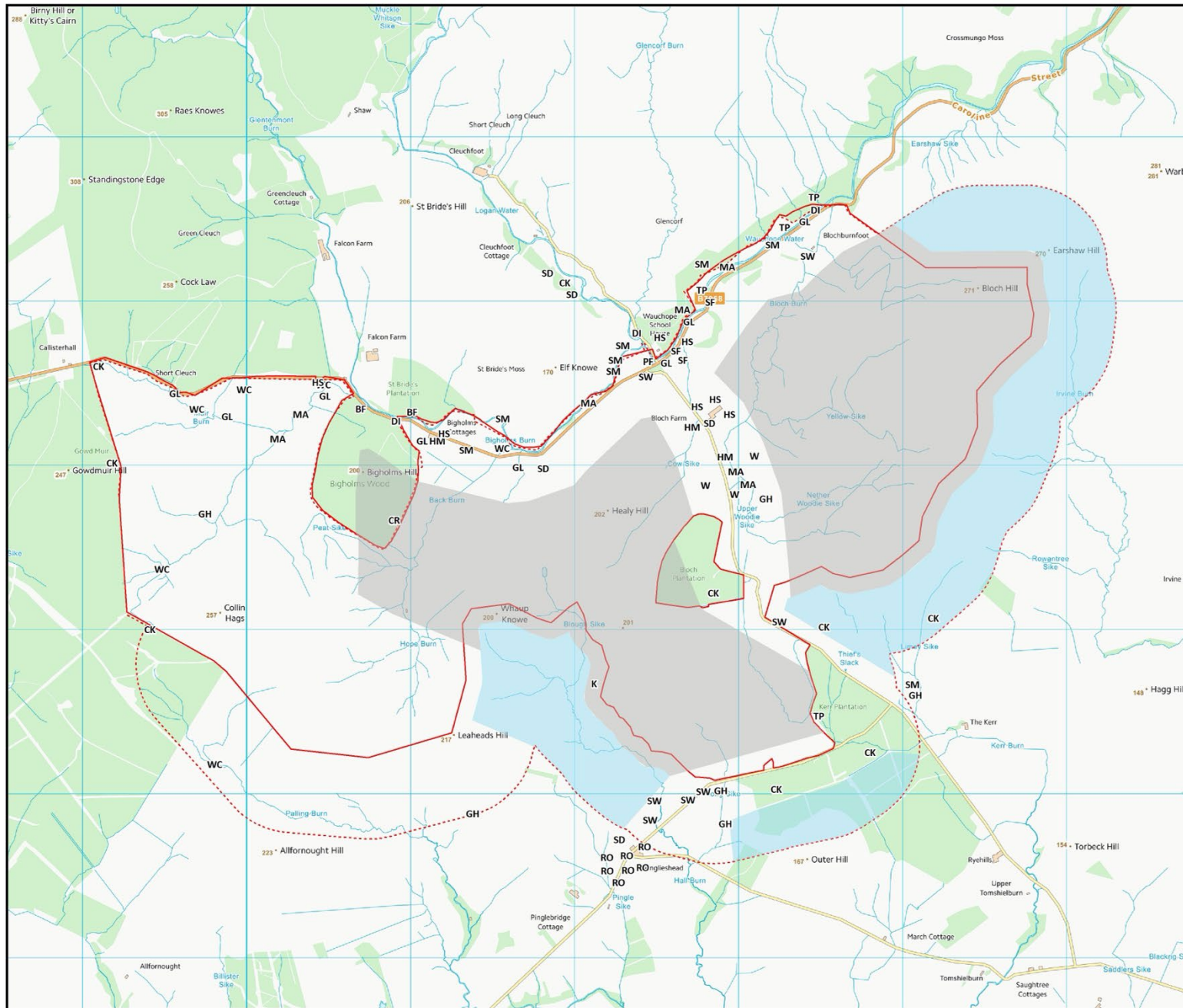
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FIGURE 14

Distribution of Other Breeding Species, 2021



KEY:

- Solwaybank Ext Site Boundary
- Core Breeding Bird Survey Area 2021

Restricted access

- No access
- Access only after May

Approx. breeding locations:

- MA - Mallard
- K - Kestrel
- SD - Stock Dove
- CK - Cuckoo
- SM - Sand Martin
- HM - House Martin
- TP - Tree Pipit
- GL - Grey Wagtail
- DI - Dipper
- W - Whinchat
- W - Wheatear
- GH - Grasshopper Warbler
- SW - Sedge Warbler
- SF - Spotted Flycatcher
- PF - Pied Flycatcher
- RO - Rook
- HS - House Sparrow
- CR - Common Crossbill
- BF - Bullfinch



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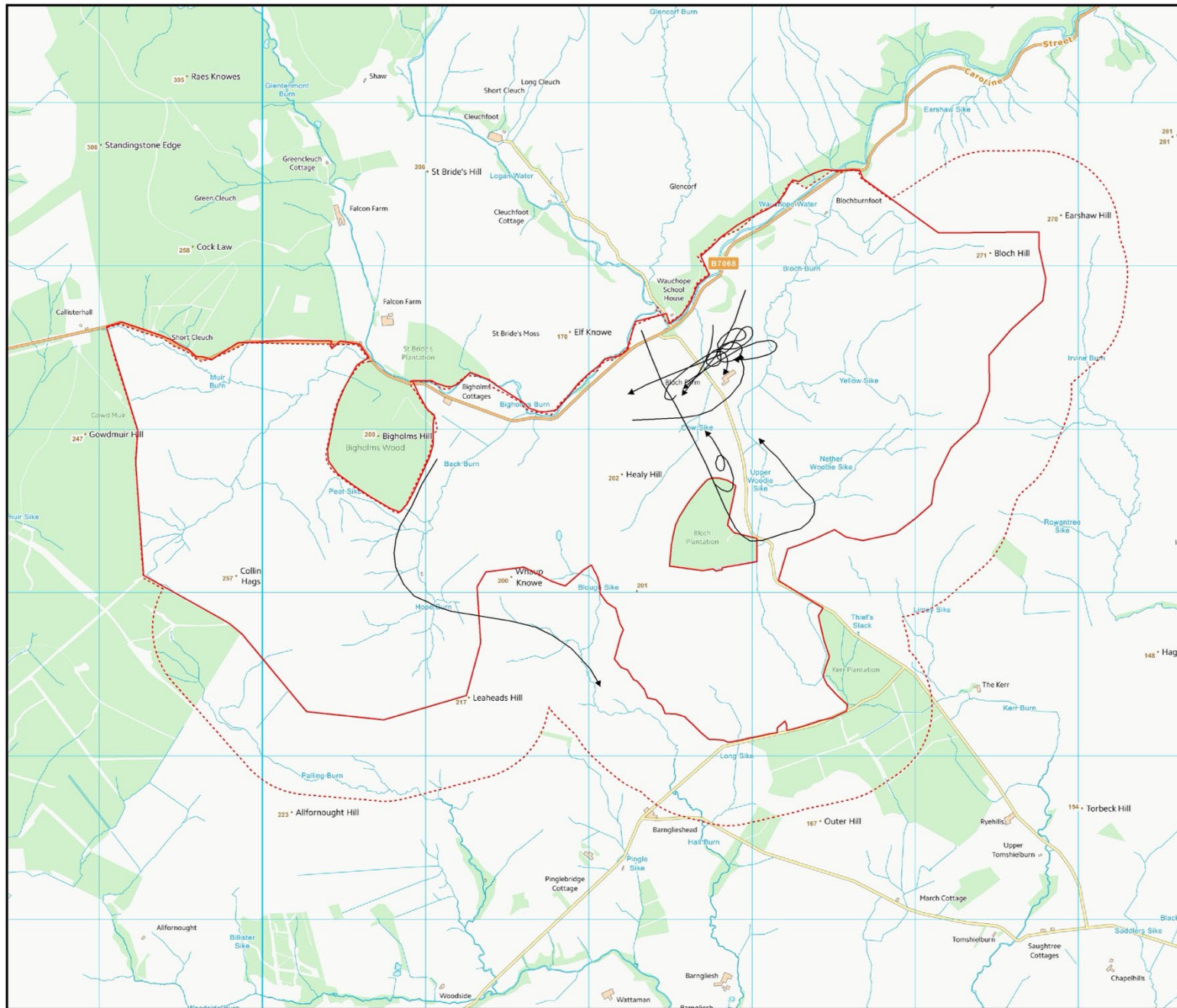
PROJECT NO: N/A £ PROJECT NO: N/A

DOCUMENT NUMBER: SB2021-1

SCALE - 1:22,000 @ A3

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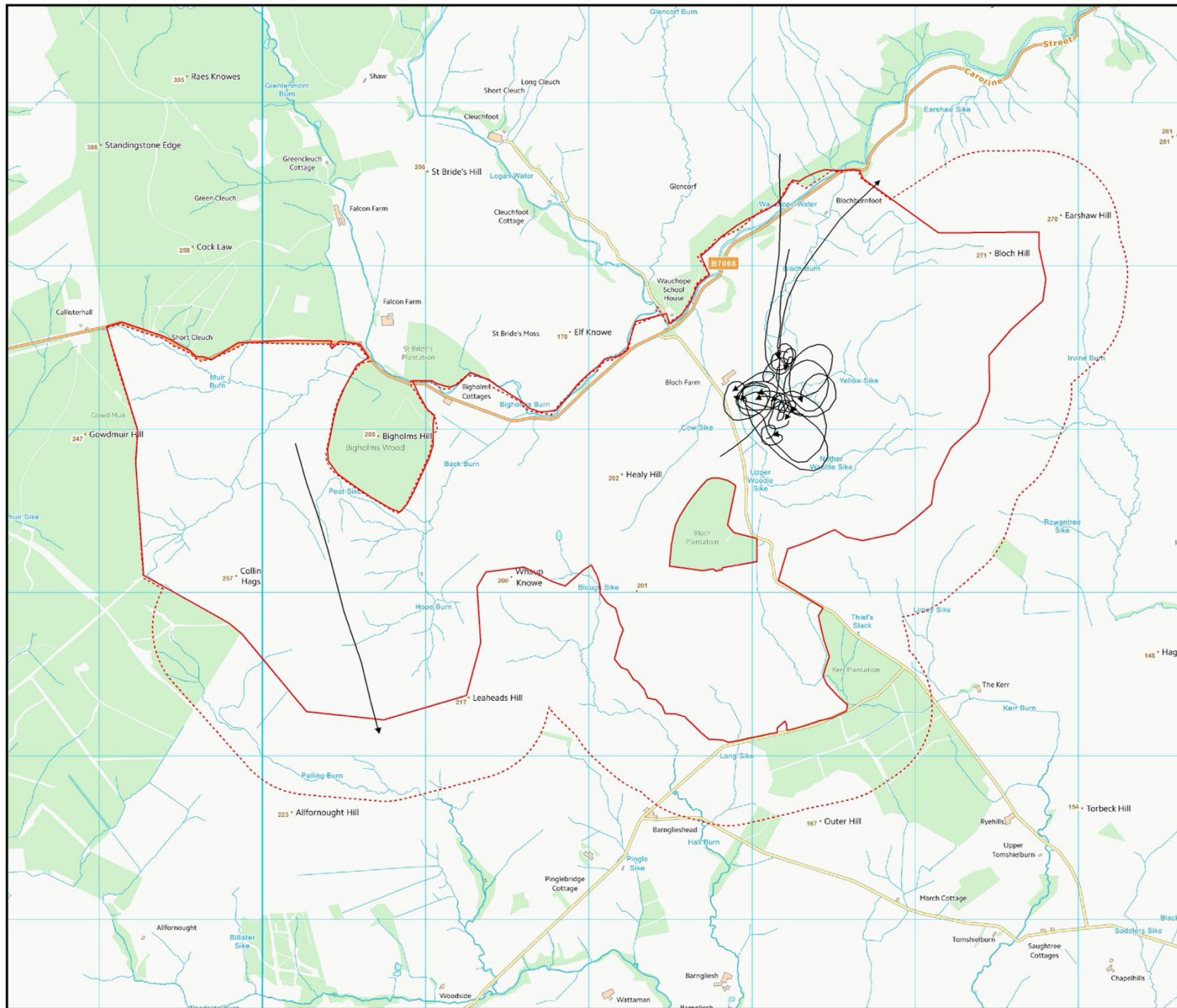
FIGURE 15

Oystercatcher flight activity, 2021

- KEY:**
- Solwaybank Ext Site Boundary
 - Core Breeding Bird Survey Area 2021
 - VP flight lines



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DRAWING NUMBER	N/A
SB2021-1	
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FIGURE 16

Lapwing flight activity, 2021

KEY:

- Solwaybank Ext Site Boundary
- Core Breeding Bird Survey Area 2021
- VP flight lines



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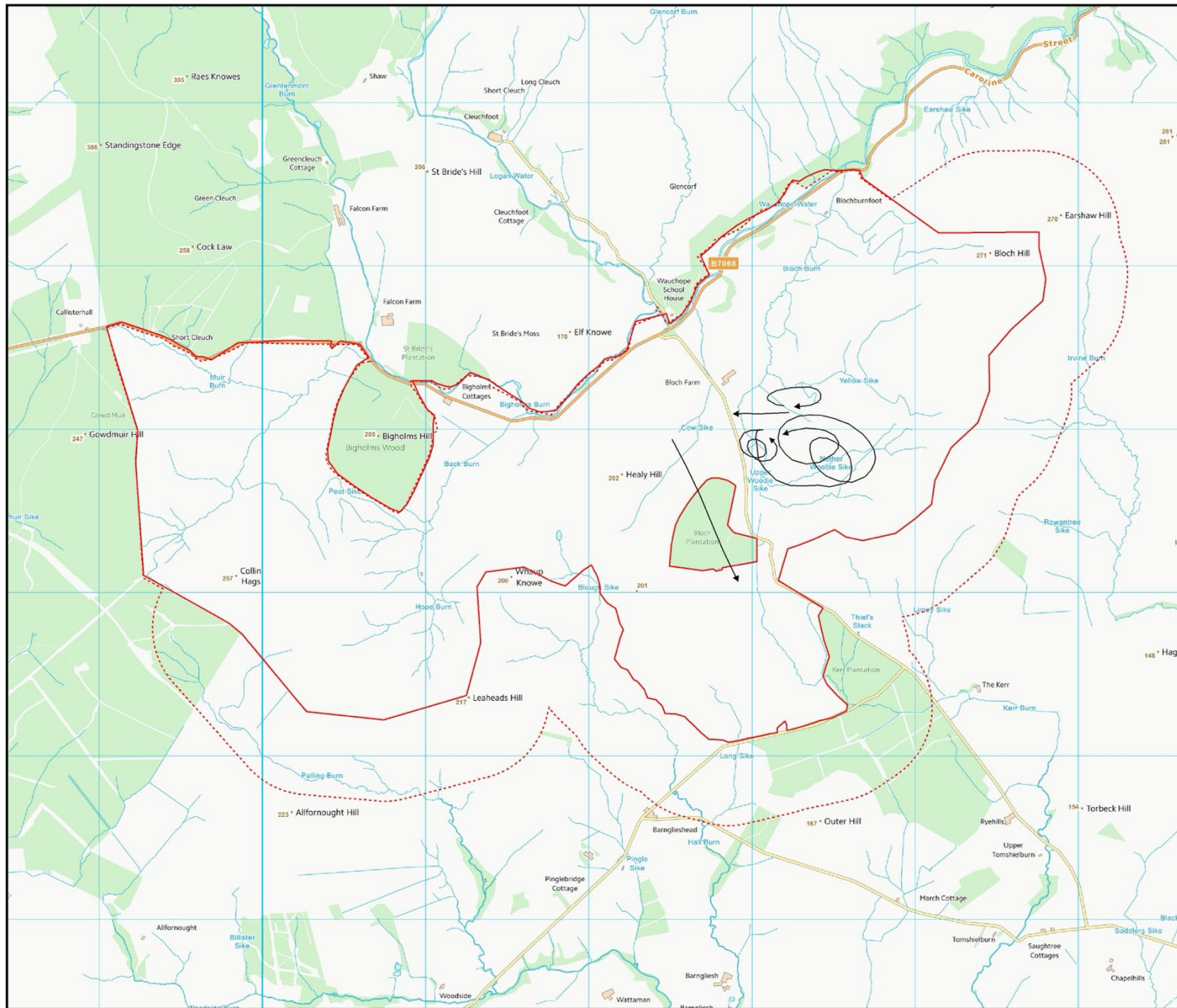
PROJECT NO: N/A 1. LAYOUT NO: N/A

DOCUMENT NUMBER: SB2021-1

SCALE - 1:22,000 @ A3

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FIGURE 17

Snipe flight activity, 2021

KEY:

- Solwaybank Ext Site Boundary
- Core Breeding Bird Survey Area 2021
- VP flight lines



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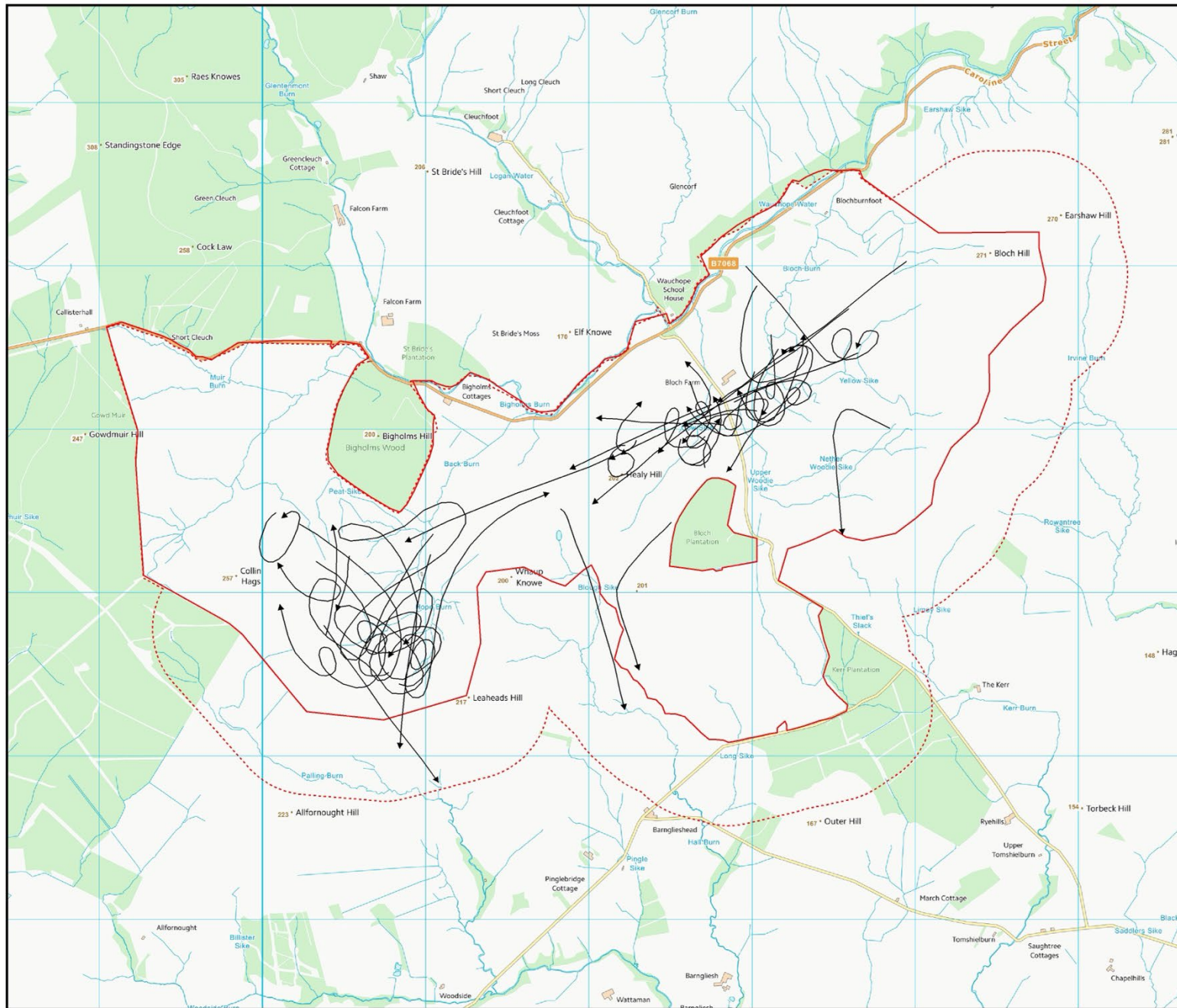
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DOCUMENT NUMBER: SB2021-1

SCALE - 1:22,000 @ A3

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FIGURE 18

Curlew flight activity, 2021

KEY:

- Solwaybank Ext Site Boundary
- Core Breeding Bird Survey Area 2021
- VP flight lines



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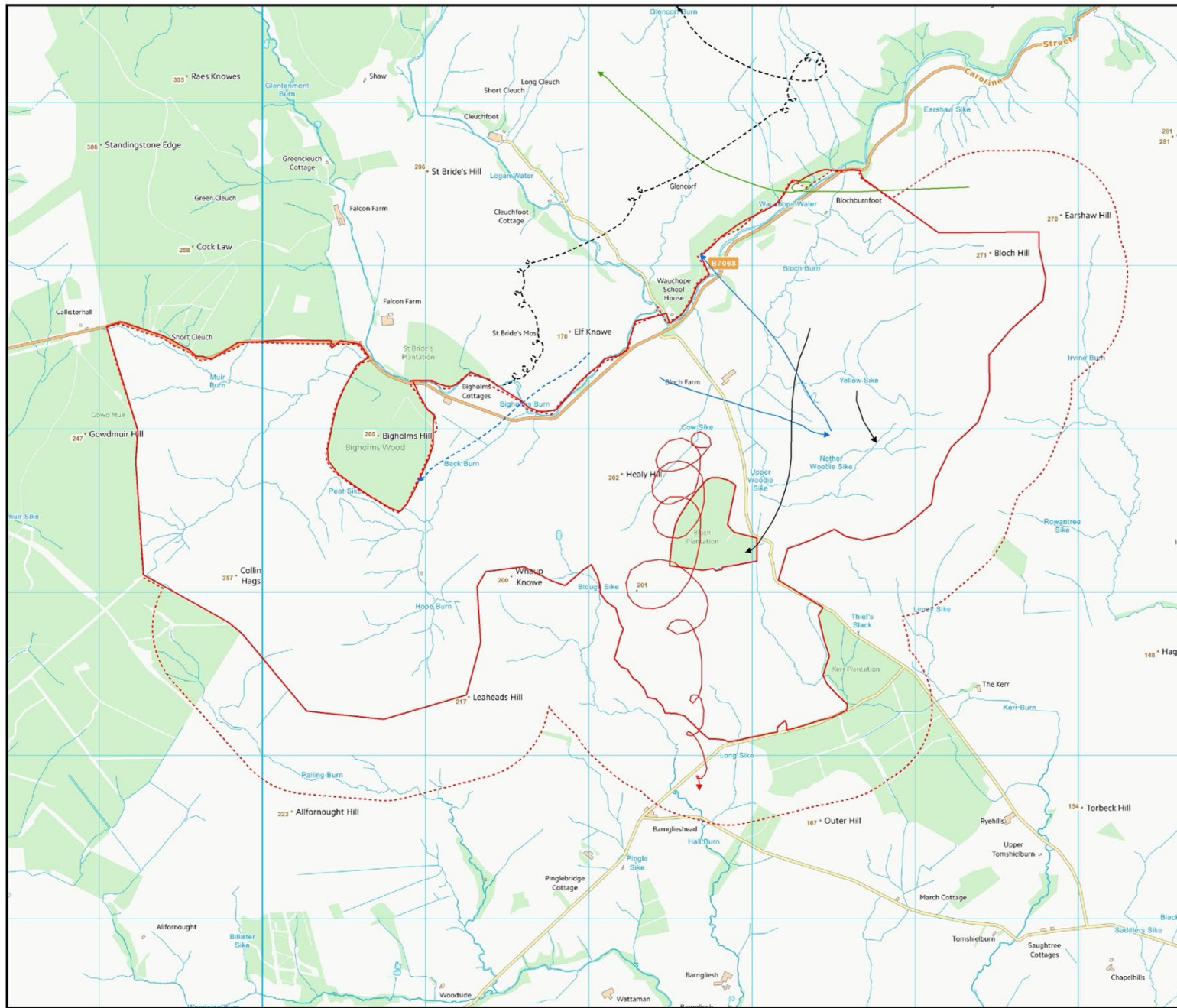
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DOCUMENT NUMBER: SB2021-1

SCALE - 1:22,000 @ A3

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FIGURE 19

Scarce raptor flight activity, 2021

- KEY:**
- Solwaybank Ext Site Boundary
 - Core Breeding Bird Survey Area 2021
- Wider surveys:**
- Goshawk
 - Peregrine
- VP flight lines:**
- Goshawk
 - Hen Harrier
 - Osprey
 - Peregrine



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APPENDIX 1. VANTAGE POINT SURVEY DATA

Survey Information

Date	Vantage Point No	Start time	Finish time	Observation time	Weather
26/04/2021	3	12:20	15:20	03:00	cloud 8/8, wind SW 3, 9C, vis very good
26/04/2021	3	15:50	18:20	02:30	cloud 8/8, wind SW 3, 8C, vis very good
26/04/2021	3	18:50	20:50	02:00	cloud 8/8, wind SW 3, 8C, vis very good
26/04/2021	2	12:45	15:45	03:00	3 SW-WSW wind, 8/8 cloud, light showers, very good vis
26/04/2021	2	16:15	19:15	03:00	8/8 cloud, 3-2 WSW wind, good vis
26/04/2021	2	19:45	21:15	01:30	8/8 cloud, 3 SW wind, very good vis
24/05/2021	2	08:50	11:50	03:00	cloud 7/8, wind WSW 2, 10C, vis very good
24/05/2021	2	12:20	13:50	01:30	cloud 4/8, wind W 3, 11C, vis very good
24/05/2021	2	17:30	20:30	03:00	cloud 6/8, wind W 3, 12C, vis excellent
24/05/2021	3	17:40	20:40	03:00	8/8 cloud, 3-2 W-WSW wind, excellent vis, light rain
24/05/2021	3	08:40	11:40	03:00	4-6/8 cloud, 3 W wind, excellent vis
24/05/2021	3	12:10	13:40	01:30	3-6/8 cloud, 3-4 W wind, excellent vis
24/06/2021	2	06:30	09:30	03:00	cloud 8/8, wind WSW 1, 15C, vis good
24/06/2021	2	10:00	13:00	03:00	cloud 8/8, wind SSW 2, 15C, vis very good
24/06/2021	2	13:30	15:00	01:30	cloud 3/8, wind SSW 4, 18C, vis very good
24/06/2021	3	06:45	09:45	03:00	8/8 cloud, 0-3 WSW wind, excellent vis
24/06/2021	3	10:15	13:15	03:00	3-7/8 cloud, 2-4 WSW wind, excellent vis
24/06/2021	3	13:45	15:15	01:30	4-6/8 cloud, 3-4 WSW wind, excellent vis
13/07/2021	3	14:15	17:15	03:00	cloud 7/8, wind NNW 1, 20C, vis very good
13/07/2021	3	17:45	19:15	01:30	cloud 6/8, wind W 2, 20C, vis very good
14/07/2021	3	06:30	08:30	02:00	cloud 8/8, wind 0, 14C, vis very good
14/07/2021	2	07:10	10:10	03:00	7-8/8 cloud, 0-1 SSW wind, excellent vis
14/07/2021	2	10:40	13:40	03:00	5-8/8 cloud, 2 WSW - W wind, excellent vis
14/07/2021	2	14:10	15:10	01:00	4/8 cloud, 2 W wind, excellent vis
19/08/2021	2	08:45	11:45	03:00	8/8 cloud, 1 SSW - SW wind, very good vis, 13 to 14C
19/08/2021	2	14:30	17:30	03:00	6-8/8 cloud, 3 SW wind, excellent vis
19/08/2021	2	18:00	19:00	01:00	7/8 cloud, 3 SW wind, excellent vis
21/08/2021	3	09:00	12:00	03:00	8/8 cloud, 0-2 SE-SW wind, 14C to 16C, light to steady rain and periods of dry
21/08/2021	3	13:15	16:15	03:00	8/8 cloud, 1-2 SE-SW wind, excellent vis, 16C, very brief light rain shower
21/08/2021	3	17:35	18:35	01:00	8/8 cloud, 3 SE wind, very good vis, light rain

Key Species Data

VP	Date	Time	Species	Count	Direction of flight	Flight height (m)	Activity	Time bird observed (sec)	Notes
3	26/04/2021	12:22	L	2	circle	13	display	480	on and off throughout
3	26/04/2021	12:25	CU	1	SW	10	display	70	male, landed
3	26/04/2021	12:50	CU	1	W	6	display	30	male, same as 2, landed
3	26/04/2021	13:05	CU	2	SSW	13	display	80	pair, same as 4
3	26/04/2021	13:06	CU	1	SSW	18	display	50	
3	26/04/2021	13:55	CU	2	SSW	15	flushed	70	pair landed, brief display
3	26/04/2021	13:56	CU	2	ENE	23	display	110	pair same as 5, landed
3	26/04/2021	14:26	CU	1	SSE	10	display	70	male, same as 10
3	26/04/2021	14:44	CU	2	SSW	13	display	80	
3	26/04/2021	14:56	OC	1	SSW	8	feed	50	landed
3	26/04/2021	16:01	CU	2	SSE	15	display	80	pair landed, brief display
3	26/04/2021	16:01	CU	1	SSW	13	display	70	male, landed
3	26/04/2021	16:25	CU	1	SSE	10	display	80	male, same as 3, landed
3	26/04/2021	16:54	OC	2	SSW	5	feed	30	landed
3	26/04/2021	17:26	L	1	circle	8	display	70	landed
3	26/04/2021	17:57	L	1	circle	10	display	60	landed
3	26/04/2021	18:10	OC	2	SW	9	flushed	40	pair same as 8, landed on barn roof
3	26/04/2021	19:06	CU	2	SSW	9	roost	50	landed
3	26/04/2021	19:10	L	1	circle	8	display	60	landed
3	26/04/2021	19:29	CU	1	N	3	feed	20	male, landed
3	26/04/2021	19:58	CU	2	SW	9	display	70	same as 2, landed
3	26/04/2021	20:06	L	1	circle	6	display	50	landed
3	26/04/2021	20:26	CU	2	circle	15	display	60	same as 21
2	26/04/2021	13:13	CU	1		20	display	110	
2	26/04/2021	13:45	CU	1	SW	13		60	landed
2	26/04/2021	13:56	CU	2	W	28		130	
2	26/04/2021	14:01	CU	1	SE	25		90	
2	26/04/2021	18:12	HH	1	circle S	93		300	male
2	24/05/2021	09:11	CU	1	SSW	10		80	
2	24/05/2021	10:18	CU	1	circle	13	display	150	landed
2	24/05/2021	10:26	CU	1	circle	10	display	90	same as 6, landed
2	24/05/2021	11:10	CU	1	NNE	7		50	
2	24/05/2021	13:18	CU	1	SSW	3		20	landed
3	24/05/2021	17:46	L	3		20		80	
3	24/05/2021	17:50	OC	1	SE	20		70	with 3
3	24/05/2021	17:50	OC	1	SE	15		50	with 2
3	24/05/2021	18:02	CU	2	SW	30		130	landed
3	24/05/2021	18:08	CU	2	SW	8		35	flew from ground
3	24/05/2021	18:11	L	1		5		30	
3	24/05/2021	18:26	L	2		3		70	
3	24/05/2021	18:37	L	2		8		150	
3	24/05/2021	19:11	CU	1		5	display	45	
3	24/05/2021	19:21	L	1		3		70	
3	24/05/2021	19:35	L	1		3		25	
3	24/05/2021	19:56	SN	2		25	display	75	
3	24/05/2021	20:15	CU	1	SW	7		90	
3	24/05/2021	08:57	L	1	WNW	2		25	flew between fields
3	24/05/2021	09:36	L	1		13	mob	40	mobbed C
3	24/05/2021	10:18	L	1		10		45	
3	24/05/2021	10:38	L	1		10		120	
3	24/05/2021	11:29	L	2		15		420	
3	24/05/2021	12:36	L	2		10		170	
3	24/05/2021	12:55	L	1		5	mob	20	mobbed C
3	24/05/2021	13:26	CU	1	SE	40		130	
3	24/05/2021	13:35	CU	1	WSW	15		60	
2	24/06/2021	07:00	CU	2	SE	33	display	1560	pair responding to intruder
2	24/06/2021	07:00	CU	1	SSW	30	display	1080	
2	24/06/2021	07:17	OC	3	SSW	43		170	
2	24/06/2021	07:51	CU	1	SE	23	display		
2	24/06/2021	08:46	CU	1	SSE	50		90	
2	24/06/2021	14:47	CU	1	SW	33		70	
3	24/06/2021	07:13	OC	2	circle	15		90	
3	24/06/2021	07:17	OC	1	E	10		70	landed
3	24/06/2021	09:12	CU	2	NW	40		70	
3	24/06/2021	11:23	PE	1	ESE	13		50	adult, landed
3	24/06/2021	11:28	PE	1	NW	20		60	adult, flew from ground
3	13/07/2021	14:28	GI	1	SSW	21	hunt	120	female, prob 2cy
3	13/07/2021	17:04	OP	1	W	43		200	
3	14/07/2021	06:50	SN	1	circle	15	display	80	chipping, landed
3	14/07/2021	06:54	SN	1	circle	25	display	110	drumming, landed again
3	14/07/2021	07:14	SN	1	W	4		20	landed
3	14/07/2021	07:33	SN	1	circle	18	display	170	chipping, landed
3	14/07/2021	08:00	OC	1	ENE	6	feed	50	landed
3	14/07/2021	08:12	L	12	NE	60		140	
3	14/07/2021	08:15	SN	1	circle	50	display	750	drumming, landed again
2	19/08/2021	16:41	L	1	SSE	55	direct flight	115	
3	21/08/2021	11:48	L	2	S	13		40	landed
3	21/08/2021	13:31	L	1	circle SW	5		55	flew between field
3	21/08/2021	14:48	L	19	S	20		70	landed
3	21/08/2021	15:04	GI	1	S	6		25	adult, lost to view
3	21/08/2021	15:15	L	21		15		130	flew between fields
3	21/08/2021	18:14	SN	3	SW	23		70	