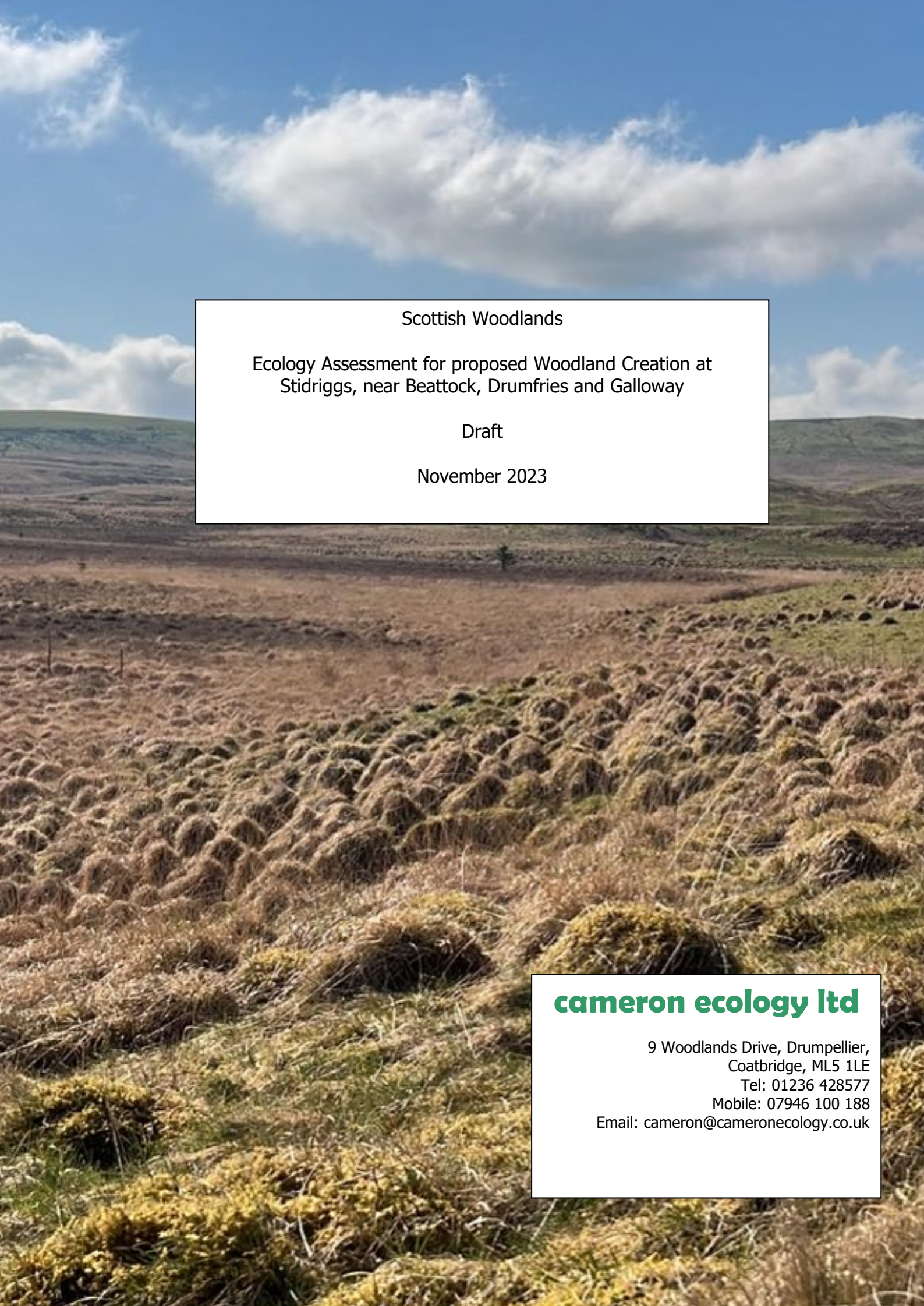

Scottish Woodlands

Ecology Assessment for proposed Woodland Creation at Stidriggs, near Beattock, Drumfries and Galloway

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1 Introduction

Cameron Ecology Ltd was commissioned by Scottish Woodlands to undertake an ecological assessment of a woodland creation proposal at Stidriggs, near Beatock in Dumfries and Galloway.

This work had two main objectives:

1. Identify the ecological constraints and opportunities associated with the woodland creation; and
2. Provide an assessment of the potential ecological effects of woodland creation at this location.

This report sets out the findings of this work to date. This includes baseline information gathered about the site to date, an evaluation of the important ecological receptors present at this site, and identification of constraints and opportunities to be taken into account in the design process.

2 Methods

This section of the report sets out the methods used in the ecological assessment process. The first stage in the ecological assessment process is determining the baseline ecological conditions. Two main methods have been used in this: desk study and field survey. These are described in more detail below.

2.1 *Desk Study and Consultation*

The desk study involved a review of the results of data searches from a number of sources.

Online resources in relation to designated sites were searched using the NatureScot Sitelink website.

A data request was submitted to The South West Scotland Environmental Information Centre (SWSEIC), which is the biological records centre covering this area.

The Native Woodland Survey of Scotland (NWSS)[1] was also consulted as a desk study source, together with a range of other online sources.

Informal consultations were also undertaken with a number of individuals, including the tenant farmer, in relation to the wildlife interest of the area.

2.2 *Field Survey*

Field survey included the following surveys:

- A Phase 1 habitat survey[2] and National Vegetation Classification (NVC) [3] survey of semi-natural habitats present in a wider area was undertaken. Fieldwork in relation to this work was undertaken on the following dates: 26, 27 June, and 31 July 2023. The habitat survey area is shown in Figure 1;
- A four-visit breeding bird survey following the methods described by Brown & Shepherd (1993)[4], modified to include recording all species including passerines was undertaken. This included visits on 18 & 20 April, 3 May, 2 and 5 June and 12 July 2023.
- A black grouse survey, following the methods described in Gilbert *et al* 1998[5] was undertaken on 20 April 2023;
- A generalised search for ground nesting raptors including field signs was undertaken on 24 May and 2 June 2023. This followed the range occupancy element of the ground nesting raptor methodologies described in Hardey *et al* 2013[6].

1 Native Woodland Survey of Scotland – dataset downloadabale from forestry.gov.uk

2 Nature Conservancy Council 1990 Handbook for Phase 1 habitat survey – a technique for environmental audit Joint Nature Conservancy Council, Peterborough

3 Rodwell, J.S. (ed), 1991 et seq British Plant Communities Vols 1-5 Cambridge University Press, Cambridge

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

5 Gilbert, G, Gibbons, D.W. and Evans, J 1998 *Bird Monitoring Methods:* a manual of techniques for key UK species, Royal Society for the Protection of Birds, Sandy, Bedfordshire

6 Hardey, J., Crick, H. Wernham, C., Riley, H., Etheridge, B. and Thompson, D. 2013 'Raptors: A field guide for surveys and monitoring' The Stationery Office, Edinburgh

- Search for field signs of badger. Field signs of badger are described in the following references: Neal and Cheeseman (1996)[7], Bang and Dahlström (2001)[8], SNH (2001)[9] and Sargent and Morris (2003)[10]. The area searched is the same as the habitat survey area and is shown in Figure 1, and was searched on the same dates as the habitat survey, and 5 and 26 June 2023;
- Search for field signs of water vole and otter. Areas surveyed included spot checks on all watercourses within the habitat survey area, and were undertaken on the same dates as the badger surveys described above. Survey methods are described in more detail in Strachan & Moorhouse (2006)[11] and Chanin (2003)[12];
- Generalisd assessment of structures and trees present in relation to their potential to support bat roosts on the same dates as the habitat survey; and
- A watching brief for other protected or otherwise notable species.

2.3 *Limitations*

Strongly tussocked *Molinia* grassland in parts of the site made walking difficult and in these areas there will have been fewer spot checks on the watercourses. No systematic surveys were undertaken for reptiles, amphibians and invertebrates.

No other specific limitations have been identified in this study.

2.4 *Assessment Methods*

Once the baseline has been described (following the methods outlined above) the ecology assessment involves three main stages:

- Evaluation of features of ecological importance;
- Characterisation of potential effects; and
- Determination of significance.

These stages are described in more detail below.

2.4.1 Evaluation of Features of Ecological Importance

This process involves assigning a value to "Features of Ecological Importance" (FEIs). FEIs are the designated sites, habitats and species of highest ecological value present on the site.

Designated receptors are usually straightforward to assign a value to as most designations have an intrinsic value level associated with them. For example, a Site of Special Scientific Interest is a national level designation and so is of "national" value. Non-designated receptors are assigned a value using these same principles, relying on suitable guidance where this exists. The table given below is intended to illustrate the approach to valuing ecological features.

7 Neal, E. and Cheeseman, C. (1996). Badgers. Christopher Helm, London

8 Bang, P. and DahlstrØm, P. (2001). Animal Tracks and Signs. Oxford University Press, Oxford

9 Scottish Natural Heritage (2001). Scotlands Wildlife: Badgers and Development, Scottish Natural Heritage, Battleby

10 Sargent, G. and Morris, P. (2003). How to find & Identify Mammals. The Mammal Society, London

11 Strachan, R. and Moorhouse, T. (2006). Water vole conservation handbook 2nd ed. Wildlife Conservation Research Unit, University of Oxford, Oxford

12 Chanin P (2003). Monitoring the Otter Lutra lutra. Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough

Table 1 Approach to Valuing Ecological Features

Level of Value	Examples
International	An internationally designated site (e.g. SAC), or site meeting criteria for international designations.
	Species present in internationally important numbers (>1% of biogeographic populations).
National	A nationally designated site (Site of Special Scientific Interest, SSSI, or a National Nature Reserve, NNR), or sites meeting the criteria for national designation.
	Species present in nationally important numbers (>1% UK population).
	Large areas of priority habitat listed on Annex I of the EC Habitats Directive and smaller areas of such habitat that are essential to maintain the viability of that ecological resource.
Regional (Natural Heritage Zone or Local Authority Area)	Species present in regionally important numbers (>1% Western Southern Uplands and Inner Solway Natural Heritage Zone[13] (NHZ) population.
	Sites falling slightly below criteria for selection as a SSSI.
	Site of Importance for Nature Conservation, Scottish Wildlife Trust Reserves, Local Nature Reserves, or areas meeting criteria for these designations.
Local	Areas of semi-natural ancient woodland larger than 0.25 ha.
	Areas of habitat or species considered to appreciably enrich the ecological resource within the local context, e.g. species-rich flushes or hedgerows.
Negligible	Usually widespread and common habitats and species. Receptors falling below local value are not normally considered in detail in the assessment process.

2.4.2 Characterisation of Potential Effects

The assessment seeks to systematically describe potential effects on ecological features in relation to set criteria such as magnitude, extent, duration, frequency, reversibility and probability of occurrence.

2.4.3 Determination of Significance

The primary purpose of the assessment process is to determine whether an effect is ecologically significant. The approach taken in this assessment is to make a judgement as to whether there will be an effect on the integrity of a defined ecological feature.

[13] https://www.nature.scot/about-naturescot/our-work/natural-heritage-futures, accessed 22 Aug 23

3 Ecological Baseline

3.1 *Desk Study Results*

Figure 1 shows nature conservation designations within 1km.

No statutory nature conservation designations were recorded applying to the site itself, based on a search of NatureScot datasets. The nearest statutory designation is Lochwood Site of Special Scientific Interest (SSSI), more than 2km to the south-west. This is a designation primarily protecting veteran oak wood-pasture and related interests.

There are no Special Areas of Conservation (SACs) or Special Protection Areas (SPAs) within 10km of the survey area.

No non-statutory designations were identified by SWSEIC within 1km.

There is one area of broad-leaved woodland that has been surveyed as part of the Native Woodland Survey of Scotland – Stidriggs Wood. This area is described as being predominantly W11 Birchwood in terms of its vegetation.

A broad habitat map of the area provided by SWSEIC describes the bulk of the area as grass-heath, with some semi-improved and neutral grassland around Stidriggs Farm and Stidriggs Wood.

702 records, covering 126 different taxa were provided by SWSEIC. Most of these were based on presence within a 2km square overlapping the site or a 1km boundary of the site. 77 of the species recorded were bird species. 21 species noted were of invertebrates, eighteen mammals, five plants, three reptiles and two amphibians. This indicates that the area is not well recorded in relation to biological recording in general, with a particularly low level of recording of plants in this area.

Mammal records included records of both red and grey squirrel.

3.2 *Desk Study – Wader Sensitivity Mapping*

In relation to other sites, the BTO have previously highlighted the availability of the work they have produced in relation to wader sensitivity mapping[14],[15]. Outputs from this modelling show predicted 'heat maps' for wader species. The heat maps for this site do not show any particular sensitivities for this area, but it should be noted that input data for this area may be less comprehensive than for other areas.

[14] https://app.bto.org/wader-map/index.jsp, accessed 21 Aug 2023

[15] O'Connell, P., Wilson, M., Wetherhill, A., Calladine, J. 2021 'Sensitivity mapping for breeding waders in Britain: towards producing zonal maps to guide wader conservation, forest expansion and other land use changes. Report with specific data for Northumberland and north-east Cumbria' BTO Research Report 740

3.3 *Phase 1 and NVC vegetation walkover results*

The Phase 1 and NVC fieldwork was undertaken on 26, 27 June and 31 July 2023.

Figure 2 shows the results of this survey. Appendix 1 provides a species list and target notes, and some other summary statistics in relation to the vegetation survey results. Species names in the text and in Appendix 1 follow Stace (2019[16]). Eighteen habitat types have been recorded. Descriptions of the habitat types recorded are provided below:

1. **Semi-natural Broadleaved Woodland –** Stidriggs Wood is a block of established native woodland in the eastern part of the survey area supporting primarily upland birchwood. Much of the woodland has a grazed understorey that is relatively species-poor. Some more steeply sloping sections have grazing excluded through fencing and these support a more structurally diverse field and shrub layer. High-quality existing semi-natural broadleaved woodland is also present in a linear strip alongside the Kinnel Water in the north-east of the survey area; in many cases this is also open to grazing and supports a relatively impoverished ground flora. However all of the areas mapped as semi-natural woodland are of conservation importance as they support mature native trees.
2. **Coniferous Plantation –** Around the edges of the survey area to the north and west there are extensive existing blocks of coniferous plantation. These are primarily Sitka spruce plantations, and are almost all closed-canopy woodlands. As a result there is a very sparse ground flora in these areas. These are of limited ecological value.
3. **Mixed Plantation Woodland** – A small block of planted woodland at Stidriggs Farm was coded as mixed plantation. This area was not surveyed in detail.
4. **Dense Scrub** –Unusually, there was almost no gorse scrub in this survey area, but an area of dense bog myrtle in the north-east of the survey area was coded as scrub. Scrub of this type is generally of low intrinsic value for nature conservation but can provide useful habitat for nesting birds such as linnet.
5. **Unimproved Acid Grassland** – Unimproved acid grassland is the second most abundant habitat type in the survey area, accounting for 13% by area. Acid grassland is distributed on steeply sloping ground and more mineral mounds within the survey area. The vast majority of this vegetation conforms to U4a *Festuca ovina- Agrostis capillaris – Galium saxatile* grassland in the NVC, commonly the typical sub-community U4a, and also the heathier form U4e, the *Luzula mutiflora – Rhytidiadelphus loreus* sub-community. Quite commonly this vegetation type occurs in mosaic with other vegetation types, including scattered bracken, or wet grassland communities. Other acid grassland communities were quite restricted in occurrence, with U5a *Nardus stricta – Galium saxatile* grassland occurring on very steep slopes in one polygon in the southern part of the survey area, together with some U6 *Juncus squarrosus – Festuca ovina* grassland. Quite possibly fragments of these other acid grassland communities will occur elsewhere but they were generally not sufficiently abundant to map.
6. **Semi-improved Acid Grassland** – Less steeply sloping ground, often on lower slopes than the unimproved grasslands noted above, supported semi-improved acid grassland. The most common NVC community here was the more nutrient-rich sub-community of U4, U4b *Festuca ovina- Agrostis capillaris*

[16] Stace, C 2019 *New Flora of the British Isles, 4th Edition* C & M Floristics, Suffolk. (Note that a number of name changes have been introduced in this most recent revision).

– *Galium saxatile* grassland, *Holcus lanatus – Trifolium repens* sub-community. A range of other vegetation communities were recorded in these areas, typically indicating wetter conditions and higher nutrient status; overall these habitats are of lower importance for nature conservation.

7. **Unimproved Neutral Grassland** – The lower reaches of the floodplain of a tributary of the Kinnel Water (the Fauld Burn) in the north of the survey area supported a species-rich form of wet neutral grassland. Although mostly dominated by a species-rich form of M23a *Juncus acutiflorus* rush-pasture, this area supported some MG1c, *Arrhenatherum elatioris* grassland, *Filipendula ulmaria* sub-community, in mosaic with less diverse areas of MG9 *Holcus lanatus – Deschampsia cespitosa* grassland. This is a fairly uncommon habitat type in southern Scotland.
8. **Improved Grassland –** Enclosed grasslands around Stidriggs Farm (and in a few other places) have been cultivated and re-seeded with agricultural seed mixes. Most of these areas support vegetation strongly dominated by perennial rye-grass; these are MG6 *Lolium perenne – Cynosurus cristatus* grasslands. These are common and widespread habitats of low diversity from an ecology point of view.
9. **Marshy Grassland** – By far the most abundant habitat type in the survey area is marshy grassland, with 216 hectares (40% of the survey area) coded as this category. This is the dominant habitat type outside of the improved grasslands around Stidriggs Farm. There are two main NVC communities within this habitat type. The most abundant are the areas of *Molinia* grassland – NVC M25 *Molinia caerulea – Potentilla erecta* mire; these are particularly extensive in the south and west of the survey area. Some areas of M25 grassland included an element of wet heath type vegetation in mosaic – these areas include some M15 *Trichophorum germanicum – Erica tetralix* wet heath vegetation in the polygon label. The other main vegetation community in this category are wet grasslands dominated by *Juncus* rushes – forms of M23 rush pasture. Within the M23 areas there was considerable variation, and these included some species-rich forms of M23a *Juncus acutiflorus – Galium palustre* rush pasture, which have been coded as being of high sensitivity, often being quite herb-rich. Typically the M23b forms (dominated by *J. effusus* (soft-rush)) were of lower ecological sensitivity.
10. **Species-poor semi-improved grassland** – This code was used for one area in the field containing the communications mast. The vegetation was assessed as a species-poor form of U4b, most likely this area is reverting from a sown seed mix, with frequent ryegrass persisting in the sward.
11. **Dense Bracken** – Polygons of dense bracken were generally small, and were scattered throughout the survey area. Dense bracken is coded here as U20c – *Pteridium aquilinum – Galium saxatile* community – species-poor sub-community. Generally, bracken has relatively low importance for nature conservation, although it can provide nesting opportunities for various birds, for example stonechat are frequently recorded in this community.
12. **Scattered Bracken** – Areas coded as scattered bracken were similarly widely distributed and were generally larger polygons. The dominant NVC community in these areas is the U20a *Pteridium aquilinum – Galium saxatile* community, *Anthoxanthum odoratum* sub-community. This occurs in mosaic with a range of acid grassland vegetation types, usually U4a. As with dense bracken (above) this is generally regarded as a vegetation community of low importance for nature conservation.

13. **Wet Heath** – 41 hectares (7% of the survey area) has been coded as wet heath, making this the fourth most abundant habitat type in the survey area. These are areas dominated by the species-poor sub-community of M15: M15b *Trichophorum germanicum – Erica tetralix* wet heath. The wet heath vegetation here support mixtures of *Calluna vulgaris* (heather), *Molinia caerulea* (purple moor-grass) with occasional plants of *Erica tetralix* (cross-leaved heath) often with a carpet of mixed mosses, with mat-forming (pleurocarpous) mosses and occasional sphagnum mosses such as *Sphagnum capillifolium.* Wet heath is a semi-natural vegetation type of value as part of an upland habitat mosaic. In one polygon there is some blanket bog-type vegetation (NVC M17a) in mosaic.
14. **Blanket Bog** – Scattered throughout the survey area but usually associated with the flattest areas were some polygons where the vegetation has been coded as blanket bog. These are relatively small blanket bog units, and all have the M17 *Trichophorum germanicum – Eriophorum vaginatum* blanket mire vegetation community within them, sometimes in mosaic with other vegetation types. This vegetation type is sensitive and of value for nature conservation.
15. **Wet Modified Bog** –A variety of vegetation communities have been coded as wet modified bog, including polygons with hare's-tail cotton-grass: these are M20 *Eriophorum vaginatum* mire vegetation communities in mosaic with other vegetation types. Also included in this community are areas of blanket bog vegetation that are likely on relatively shallower peats, and support mosaics of wet heath and blanket bog vegetation – typically M17 in mosaic with M15. This kind of vegetation is also sensitive and has the potential to be restored to more functional forms of peatland.
16. **Acid Flushes and Related Wetlands** – A total of 6.1 hectares (1% of the survey area) has been coded as being a flushed wetland habitat type. Two sub-communities of M6 *Carex echinata – Sphagnum fallax/denticulatum* mire are included in this habitat type; M6c and M6d, representing forms dominated by sift rush and sharp-flowered rush respectively. Also within this category were species-rich forms of M23a where plants such as *Mentha aquatica* (water mint) or *Valeriana officinalis* (Valerian) indicate some enrichment most likely from groundwater flushing, and occasionally a polygon with flushed forms of M15 wet heath is included in this category.
17. **Running Water** – There are a number of watercourses within the survey area, including most significantly the Kinnel Water, a large watercourse that has historically supported salmon and sea trout.
18. **Tracks/Buildings** – This category is included for completeness and is used to code both public roads and other tracks.

In relation to the habitats and plant species recorded, the most important areas from a nature conservation point of view are the peatlands and related habitats – blanket bog, modified bog and acid flushes.

3.4 *Birds*

The bird surveys undertaken have identified a total of 53 species of bird in the vicinity of the survey area, of which at least 41 are considered to be breeding on or very close to the site. A full list of bird species recorded and their conservation status[17] is provided in Appendix 2. This list includes birds recorded through incidental observations in the course of habitat and protected species surveys in addition to bird survey records.

This is a moderate level of diversity reflecting the range of habitats present in the survey area including watercourse corridor, open hill and mature broad-leaved woodland. The birds present are grouped as follows:

- Passage waders – golden plover;
- Breeding waders – curlew and snipe;
- Open hill passerines – skylark, meadow pipit, wheatear, whinchat and similar species;
- Woodland passerines – blackcap, nuthatch, long-tailed tit and similar species;
- Raptors and Owls; and
- Incidental species recorded overflying.

These species groups are considered in more detail below.

3.4.1 Passage Waders

Golden plover were recorded on the 18 April visit only. Three registrations were made, of a group of 16 birds, and then two registrations of groups of three, all in the vicinity of Haw Moss. The fact that the birds were present in groups like this is consistent with a pre-breeding flock on passage to breeding grounds further north. Historically this species may have bred in locations like this, and though it is currently absent from the wider area as a breeding bird, peatland of this kind in good condition with a high water table could in theory sustain one or two breeding territories in the future.

3.4.2 Breeding Waders

Two curlew territories are interpreted to be present based on the results from the four visits. Both of these are in the southern part of the survey area; interestingly both are centred on mosses – one on Haw Moss, and the other just outside the site boundary at Goosedub Moss.

Five snipe territories were interpreted to be present, with three associated with the corridor of wet ground associated with the Green Burn and two in the south-west of the survey area.

[17] *Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. 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. Available online at* **https://britishbirds. co.uk/content/status-our-bird-populations**

3.4.3 Open Hill Passerines

There are interpreted to be around 52 skylark territories in the survey area. This equates to between 11 and 12 territories per km^2. This is within the typical range of densities recorded for skylark as reported for upland sites[18].

Meadow pipit were not recorded systematically; this will be the most common open ground passerine. A relatively strong cuckoo population is present at this site, with at least three calling birds present; this is often associated with a strong meadow pipit population.

3.4.4 Woodland Passerines

A wide range of species were recorded within Stidriggs Wood and the woodland corridor associated with the Kinnel Water. These included jay, nuthatch, bullfinch, blackcap and long-tailed tit. Associated with the watercourse there were also species such as dipper and grey wagtail.

3.4.5 Raptors and Owls

Five species of raptor or owl were recorded in the course of the bird surveys including:

- Buzzard – nest-finding was not undertaken for this species but it is likely to breed on site and in the adjacent forestry, buzzards were regularly present hunting over the general area throughout the fieldwork period;
- Kestrel – again, nest finding was not undertaken but this species is likey to breed in adjacent forest edges in old crow nests, kestrel were seen on a number of occasions hunting over the open ground areas;
- Red kite – no behaviour indicative of breeding was recorded for this species, but red kite are known to breed in the wider area, and were recorded overflying the site on one occasion;
- Sparrowhawk – display activity over the forestry to the north confirms one or more territories in this area; and
- Tawny Owl – heard in the woodland to the west of the site during black grouse surveys.

Specific work to look for short-eared owl and ground nesting raptors was undertaken, but there was no evidence of the presence of short-eared owl or any other ground-nesting raptors or owls. The habitat appears suitable for short-eared owl, especially in the south west of the survey area.

3.4.6 Incidental Records

A number of species recorded in the survey work are described as incidental records. For example pink-footed geese flying high over the site in April – these birds are merely overflying and they will not be influenced by the proposals. Overflying gulls are similarly not making any direct use of the habitats on site.

Raven are present and breeding close to the edge of the site in forestry on the western boundary. Other corvids make regular use of the site, including carrion crow, rook, jackdaw and magpie.

[18] Densities recorded are within the range of variation reported for agricultural grasslands in the literature (see for example https://www.bto.org/sites/default/files/shared_documents/publications/research-reports/1993/rr129.pdf, where Wilson and Browne report densities of 0.1-0.2 per ha.

3.5 *Protected species baseline: Badger*

The protected species walkover was undertaken on the same dates as the habitat surveys. Badger are present at this site. More details of sett locations are provided in the confidential annex.

3.6 *Protected species baseline: Otter and Water Vole*

Otter spraint was noted at just one location on the northern edge of the site, at a confluence between the Kinnel Water and Fauld Burn. Otter are very likely to have a home range that includes this larger watercourse, and may make infrequent use of any of the minor watercourses on site, and at times may forage overland hunting for frogs and other amphibians in small seasonal pools and other minor water features.

No field signs of water vole were recorded. Field vole runs and droppings were noted throughout the survey area.

3.7 *Butterflies and Other Invertebrates*

No systematic invertebrate surveys were undertaken, however incidental records of the following butterflies were noted:

- Ringlet – noted in good numbers in grassland areas;
- Small heath – in grasslands on steeper ground, several individuals noted;
- Small pearl-bordered - fritillary on the south-west edge of the site close to the border with the re-stocked part of the existing plantation, this declining species is associated with marsh violets, which occur in the botanically richer areas of flushed rush-pasture. It was only recorded in one location but other colonies may be present.
- Large Skipper – this species has been spreading northwards in recent years, possibly as a result of climate change, but this record is still near the northern edge of its range in the UK. It was recorded on the southern edge of the site, close to the timber haulage track.
- Orange tip – noted early in the season on the edge of Stidriggs Wood, and on the timber route to the south, likely to be present throughout the area.

Other invertebrates of note included the golden-ringed dragonfly *Cordulagaster boltonii;* there are likely to be other dragonflies and damselflies present.

3.8 *Other species*

A number of other species were recorded as incidental records.

Amphibians – Frogs were the only amphibians recorded, recorded occasionally in the wetter grassland areas.

Reptiles – common lizard were noted in various locations.

Mammals – Red fox evidence was noted in various locations, and an individual was seen using a badger sett – possibly with young underground. This species is likely to be reasonably abundant in this area.

Brown hare were noted in various locations, for example in the improved fields besude the communications mast.

Groups of Sika deer were noted in the north-west corner just off-site in the forestry on several occasions. Roe deer are also present and were seen and heard in the margins of the forestry.

Photo 1: Common Frog were the only amphibian recorded in the survey area

4 Ecological Constraints and Opportunities

This section of the report makes use of the baseline information to identify constraints and opportunities associated with the woodland creation proposal. Areas discussed in this section are shown on **Figure 4**.

4.1 *Ornithological and Mammal Constraints*

Two curlew territories are interpreted to be present. This species is in decline and is a high conservation priority. A 500m buffer is shown on **Figure 4** around the interpreted territory centres. An extent of open ground of this order of magnitude has been accepted for other woodland creation designs as providing sufficient open ground to mitigate for the effects on increased predator pressure associated with forest edges.

Snipe have a smaller open space requirement and may continue to breed in open spaces within woodland here these have suitable habitat and are sufficiently broad. No specific ornithological constraints have been identified in relation to snipe on the constraints plan; other habitat constraints will provide sufficient open ground (see below). However from a design point of view, connecting the species-rich wet grassland associated with Green Burn to the peatland areas further north with a wide ride or more open corridor may provide sufficient continuous open habitat to retain the breeding snipe interest in that part of the site.

A 30m buffer is shown around badger setts for the purposes of this plan. Ground preparation works involving machinery should avoid these areas.

4.2 *Habitat Constraints*

Figure 4 identifies habitat features that are constraints to be taken into account in the planting design. The habitat constraints correlate with the features identified above:

1. 'Hard' Constraints: there are three categories of 'hard' habitat constraints as summarised below. These are normally areas that cannot be replaced if lost or damaged, and should not be planted. They are shown as red on **Figure 4** -
    a. Peatlands – areas of the NVC communities M17, and some mosaics with modified peatland and wet heath (NVC M15), together with modified peatlands that retain some peatland interest (NVC M20 and related mosaics) should be treated as hard constraints. Even where the underlying peat is not consistently over 50cm depth, these areas are technically restorable or may be restorable in the future to more functional peatlands and should be left unplanted. Included in this category are the related acid flush vegetation found within and adjacent to these peatland areas (usually NVC M6, sometimes M15a).
    b. Species-rich Wet Grasslands – some of the wetlands present are diverse examples of more common and widespread wet grassland types (rich forms of M23a with lots of herbs/forbs such as valerian, angelica, marsh violet, mint etc). Also included in this category is an area of unimproved neutral grassland with the species-rich sub-community MG1c. These areas should not be planted to avoid loss of biodiversity.
    c. Existing Native Woodland – Stidriggs Wood and the woodland on the watercourse corridor along Kinnel Water support high value native woodland with mature ash and birch trees. These are included for completeness on the constraints plan due to their high biodiversity

value; it is assumed that the design proposals would not result in loss of these areas.

2. 'Soft' Constraints: these areas support semi-natural habitats that have some value; in many cases planting with productive conifers in these areas would lead to some loss of biodiversity, but conversion to broadleaved woodland, especially low-density wet woodland types may in many cases be positive in the longer term from a biodiversity perspective. As a guide retaining some 'amber' open space will help retain the biodiversity interest of the site. There are two broad categories of habitats that have been coded as 'amber' –
    a. Less diverse wet grasslands – wet rush pastures with a lower frequency of herbs (usually M23a) – these areas still have some biodiversity value which could be enhanced through management, or conversion to low density wet woodland, but there would be some biodiversity loss from conversion to productive conifers.
    b. Species-poor *Molinia* grasslands retaining some wet heath or peatland interest on shallow peat or peaty gleys – these are very difficult to categorise from a constraints point of view. In most cases their biodiversity value is more related to their potential value. Areas adjacent to peatlands and related habits could under positive management either revert to wet heath or a form of wet woodland.
3. 'Green' Areas: areas coded as green from a constraints point of view are generally either improved grasslands, bracken-dominated areas, or *Molinia* grasslands that are unlikely to support important biodiversity interests (usually on less peaty soils).

No particular point features were recorded that are constraints from a habitats point of view.

4.3 *Opportunities*

Five potential opportunities have been identified in relation to this proposal:

1. Peatland Restoration: Several areas of peatland have been identified through this work, and they are influenced at present by drainage and encroachment from self-sown conifers. There is an opportunity as part of this proposal to bring these peatland areas into positive management by drain blocking and removal of self-sown Sitka spruce.
2. Native Woodland Condition: There is also an opportunity to bring the existing high quality native woodland at Stidriggs Wood into positive management – for example to make provision for regeneration to allow young trees to grow up and replace in time the existing trees, and also for positive management of he ground flora.
3. Native Woodland Expansion: There are areas where bracken adjacent to existing woodland supports ancient woodland indicator species such as bluebells (*Hyacinthoides non-scripta*), wild primula (*Primula vulgaris*) and other ground flora associated with ancient woodland, allowing for example Stidriggs Wood to expand naturally to the west. There is also scope to provide a strip of riparian woodland on the west bank of the Kinnel Water – providing a more resilient woodland resource in that area.
4. Native Woodland Connectivity: There is an opportunity to connect Stidriggs Wood with the Kinnel Water Woodland creating a potential wildlife corridor in this area. Creation of woodland in these areas would be predicted to result in higher-value woodlands from a biodiversity point of view; these could have benefots for species such as red squirrel in the long term.

5. Creation of ponds/scrapes: Ditch blocking in the peatland areas may create insect-rich pools with wet margins. This will benefit waders and other wildlife. Creation of wader scrapes elsewhere in the survey area would also bring benefits for a range of birds and other wildlife.

Photo 2: Peatland restoration opportunities would involve blocking existing ditches

5 Important Ecological Features

5.1 *Important Ecological Features Defined*

Four Important Ecological Features have been identified through this work and these are defined below.

Peatlands and Related Habitats

This receptor is considered to be of local importance for nature conservation. The extent and condition of the peatland habitats on site fall substantially below the criteria for consideration for selection as a SSSI. There is restoration potential to bring the total extent of blanket bog in the survey area from its current extent (around 15ha) to potentially as much as 35ha. Despite being a small extent, this area of peatland is of local importance.

Native Woodland Resource

This receptor is considered to be of local value, due to its size, and the diversity and quality of habitats within it. There are around 22,200ha of native woodland in the Western Southern Upland Natural Heritage Zone, based on analysis of the Native

Woodland Survey of Scotland data, suggesting native woodland coverage of around 3% in this region. Within the site there are around 10 ha of good quality woodland.

Species-rich Wet Grasslands and Related Habitats
This receptor is considered to be of local value, due to its size, and the diversity and quality of habitats within it. These areas enrich the habitat resource of the area and support invertebrates and other biodiversity interests.

Upland Bird Assemblage including Curlew
Two curlew fall below any threshold for regional importance, and so are assessed as being of local importance for nature conservation.

Other Ecological Receptors
All other ecological receptors are of less than local importance for nature conservation, and are thus scoped out from further consideration in this assessment.

6 Conclusions and Recommendations

This report provides a summary of baseline ecological conditions at Stidriggs, and makes a number of recommendations in relation to the implications for woodland design.

Four ecological features have been identified – the potential effects of proposed woodland planting should be considered in relation to these features once a proposed design is available.

Scottish Woodlands

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Stidriggs Woodland Creation Ecological Assessment

Figure 1: Nature Conservation Designations within 1km

18 November 2023

Approximate Site Boundary

1km Buffer and Records Search Area

Areas Surveyed by the Native Woodland Survey of Scotland

Lochwood SSSI

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Stidriggs Woodland Creation Ecological Assessment

Figure 2a: Phase 1 Habitat Survey and NVC Results (north-west)

18 November 2023

site boundary rough trace

Phase 1 Habitats

- A1.2.2 - Coniferous woodland - plantation
- B1.1 - Acid grassland - unimproved
- B1.2 - Acid grassland - semi-improved
- B3.1 - Calcareous grassland - unimproved
- B4 - Improved grassland
- B5 - Marsh/marshy grassland
- C1.1 - Bracken - continuous
- C1.2 - Bracken - scattered
- D2 - Wet dwarf shrub heath
- E1.6.1 - Blanket sphagnum bog
- E1.7 - Wet modified bog
- E2.1 - Flush and spring - acid/neutral flush
- G1.1 - Standing water - eutrophic
- J4 - Bare ground

Wardlaw

Cairn

Sheep Shelter

Meikle Hill

Sheepfold

Ford

Cairn Ewe Knowe

Knockbuiton Hill

M15 (M17)
U20c
M23a rich,MG1c,MG9
U20a,M25
M25a,MG9
M15 (M17)
U20
U20c
M20,M25
U4e
MG9,M25
U4a
U20c
U4a
U20a
U20b
M25a
M20,M25,M15
U4a
M15b
M25a,(M20)
M17a
M20,M25
U4e
U4b,U4a
U20a
M25b
U20c
M23
M17a,M25
M25
U20c
U4e,U20a
M15,M17a
M25
M15b
M25
M23a rich,
M6dii
MG9,M25a
M17
U20
M25
U20c
M17a
M23
M23b
U4e,U4a
U4a,M25
U4,M23b
U20c
M25b,M23a
M25,M17a
M23a
M17a,M25
M25
M23b,M23a
M25
U20c
U4a
U20c
U20c
M23a,U4e
U20a,U4a
U20a
MG10a
M23a rich
M23a,M25
M25b
M6c
MG6,U4b
U20c
U4a
M25 (M15b)
U4a,M23b
M15b
U4a,U20a
U4a
U4a,U4b,U4e M23b
U4a,MG10a
MG6,U4b
M25
M23a,M25a
M23a rich,U4a
M23,M25,U20a
U20a,U4a
U4b
U20
M17
U20c
U20c
M25
U20c
U4b
U20

Scottish Woodlands

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Stidriggs Woodland Creation Ecological Assessment

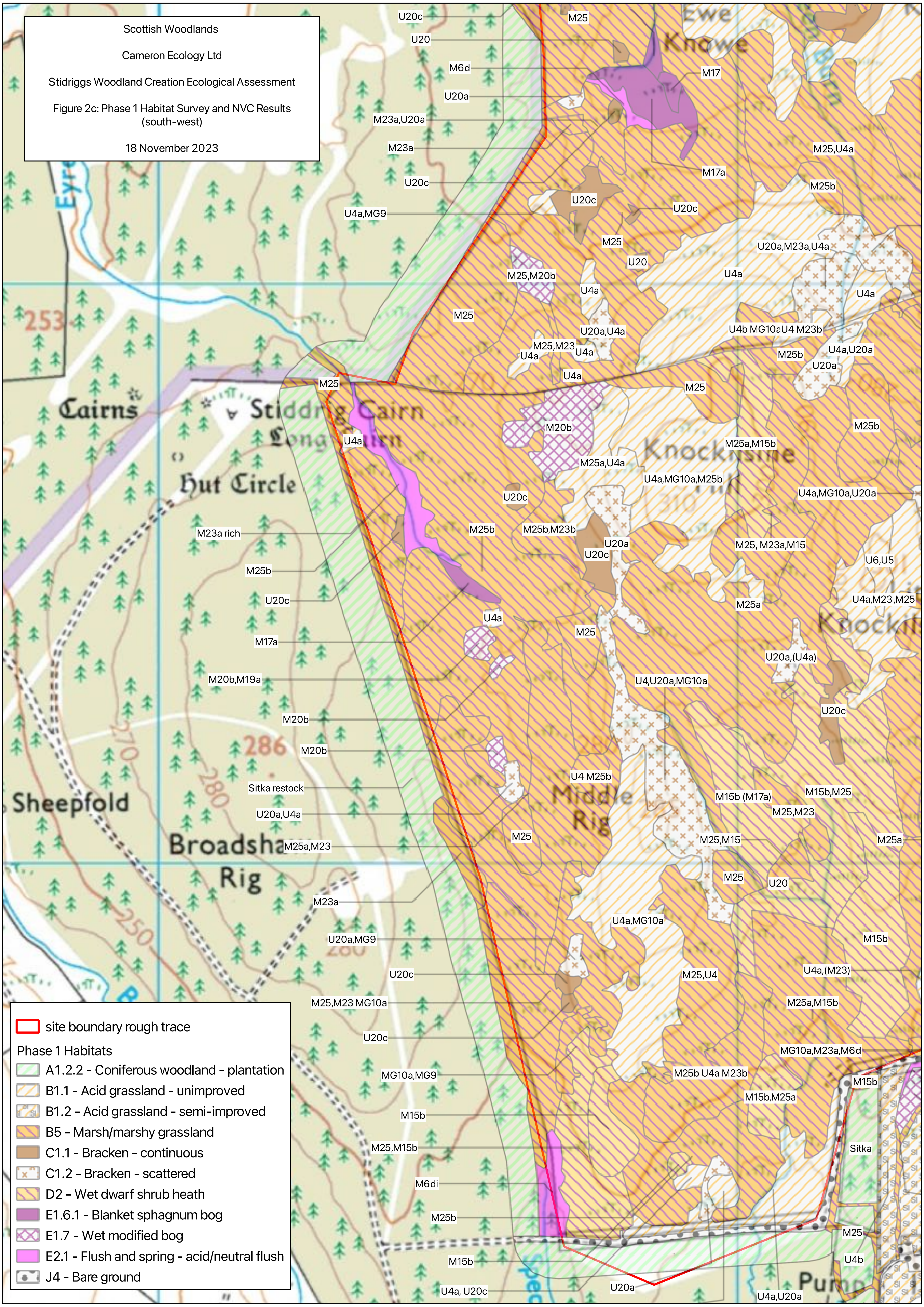
Figure 2b: Phase 1 Habitat Survey and NVC Results (north-east)

18 November 2023

site boundary rough trace

Phase 1 Habitats

- A1.1.1 - Broadleaved woodland - semi-natural
- A1.2.2 - Coniferous woodland - plantation
- A1.3.2 - Mixed woodland - plantation
- A2.1 - Scrub - dense/continuous
- B1.1 - Acid grassland - unimproved
- B1.2 - Acid grassland - semi-improved
- B3.1 - Calcareous grassland - unimproved
- B4 - Improved grassland
- B5 - Marsh/marshy grassland
- C1.1 - Bracken - continuous
- C1.2 - Bracken - scattered
- D2 - Wet dwarf shrub heath
- E1.6.1 - Blanket sphagnum bog
- E1.7 - Wet modified bog
- E2.1 - Flush and spring - acid/neutral flush
- G1.1 - Standing water - eutrophic
- J4 - Bare ground


Scottish Woodlands
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Stidriggs Woodland Creation Ecological Assessment
Figure 2c: Phase 1 Habitat Survey and NVC Results (south-west)
18 November 2023
U20c
U20
M25
M6d
M17
U20a
M23a,U20a
M23a
M25,U4a
M17a
U20c
M25b
U20c
U20c
U4a,MG9
M25
U20
U20a,M23a,U4a
M25,M20b
U4a
U4a
U4a
M25
U20a,U4a
U4b MG10aU4 M23b
M25,M23
U4a
U4a
M25b
U4a,U20a
U20a
U4a
M25
M25
M20b
M25b
U4a
M25a,M15b
M25a,U4a
U4a,MG10a,M25b
U20c
U4a,MG10a,U20a
M23a rich
M25b
M25b,M23b
U20a
U20c
M25, M23a,M15
U6,U5
M25b
U20c
M25a
U4a,M23,M25
U4a
M25
M17a
U20a,(U4a)
M20b,M19a
U4,U20a,MG10a
M20b
U20c
M20b
U4 M25b
Sitka restock
M15b (M17a)
M15b,M25
U20a,U4a
M25,M23
M25a,M23
M25
M25,M15
M25a
M25
U20
M23a
U4a,MG10a
U20a,MG9
M15b
U20c
M25,U4
U4a,(M23)
M25,M23 MG10a
M25a,M15b
U20c
MG10a,M23a,M6d
MG10a,MG9
M25b U4a M23b
M15b
M15b,M25a
M15b
M25,M15b
Sitka
M6di
M25b
M25
M15b
U4b
U4a, U20c
U20a
U4a,U20a
Cairns
Stidding Cairn
Long Cairn
Hut Circle
Sheepfold
Broadshaw Rig
Middle Rig
Knockinsine Hill
Ewe Knowe
253
286
site boundary rough trace
Phase 1 Habitats
A1.2.2 - Coniferous woodland - plantation
B1.1 - Acid grassland - unimproved
B1.2 - Acid grassland - semi-improved
B5 - Marsh/marshy grassland
C1.1 - Bracken - continuous
C1.2 - Bracken - scattered
D2 - Wet dwarf shrub heath
E1.6.1 - Blanket sphagnum bog
E1.7 - Wet modified bog
E2.1 - Flush and spring - acid/neutral flush
J4 - Bare ground

Scottish Woodlands

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Stidriggs Woodland Creation Ecological Assessment

Figure 2d: Phase 1 Habitat Survey and NVC Results (south-east)

18 November 2023

U4a,U20a
M15b,M25
U4b,M23b
M25,M15,M6
U4b,M23b
M23,M25
U20a,M23a,U4a
U4,U5
M25, M15
U20c
U4a
M25,M23a
U4
M15b,M25
U4 M23b
M25a,U5a
M25,M15,M6
U4
M25b
U4a,U20a
U20a
U4,M25
M25,M23a
M25b
U20c
U20c
U20a,U5a
U4b
M25,U4
U4b
U4b
U20c
M25b
M25,M23a
M23a
U4
M25
M25,U4
M6,M25
U4a,MG10a,U20a
M25
U20c
M17,M15,M25
U6,U5
Ford
U4a,M23 ,M25
U20a,M23b,U4a
M15,M25
M17,M15
U20a,(U4a)
M25a
M25,M23 ,M6
M25b
M25b,U4a
U20c
M25,U6
U20c
M15b
M25
U4a
M15b,M25
M17,M6d
M25,M23
M25b
M25
U4b
M25a
U4b
U4b
U20
U6,M25,
U4,M25
M15b
M25a
M25b (U4a)
U4a,(M23)
U4b,M23b
M25a,M15b
M23a
MG10a
MG10a,M23a,M6d
M25b
M23a
Track
M15b
M15b,M25a
M25a,Eriophorum
M23b,MG10a,
Sitka
U4b
U4b,MG6
M23
M25,MG10a
M23
M25
MG6,M23b
MG6
U4b
U4,MG6
U4a,U20a

site boundary rough trace

Phase 1 Habitats

- A1.1.1 - Broadleaved woodland - semi-natural
- A1.2.2 - Coniferous woodland - plantation
- B1.1 - Acid grassland - unimproved
- B1.2 - Acid grassland - semi-improved
- B4 - Improved grassland
- B5 - Marsh/marshy grassland
- B6 - Poor semi-improved grassland
- C1.1 - Bracken - continuous
- C1.2 - Bracken - scattered
- D2 - Wet dwarf shrub heath
- E1.6.1 - Blanket sphagnum bog
- E1.7 - Wet modified bog
- E2.1 - Flush and spring - acid/neutral flush
- J4 - Bare ground

Scottish Woodlands

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Stidriggs Woodland Creation Ecological Assessment

Figure 3: Breeding Bird Survey Results - Waders

18 November 2023

Approximate Site Boundary

500m buffer (surveyed where access possible)

Wader Territories

Curlew

Snipe

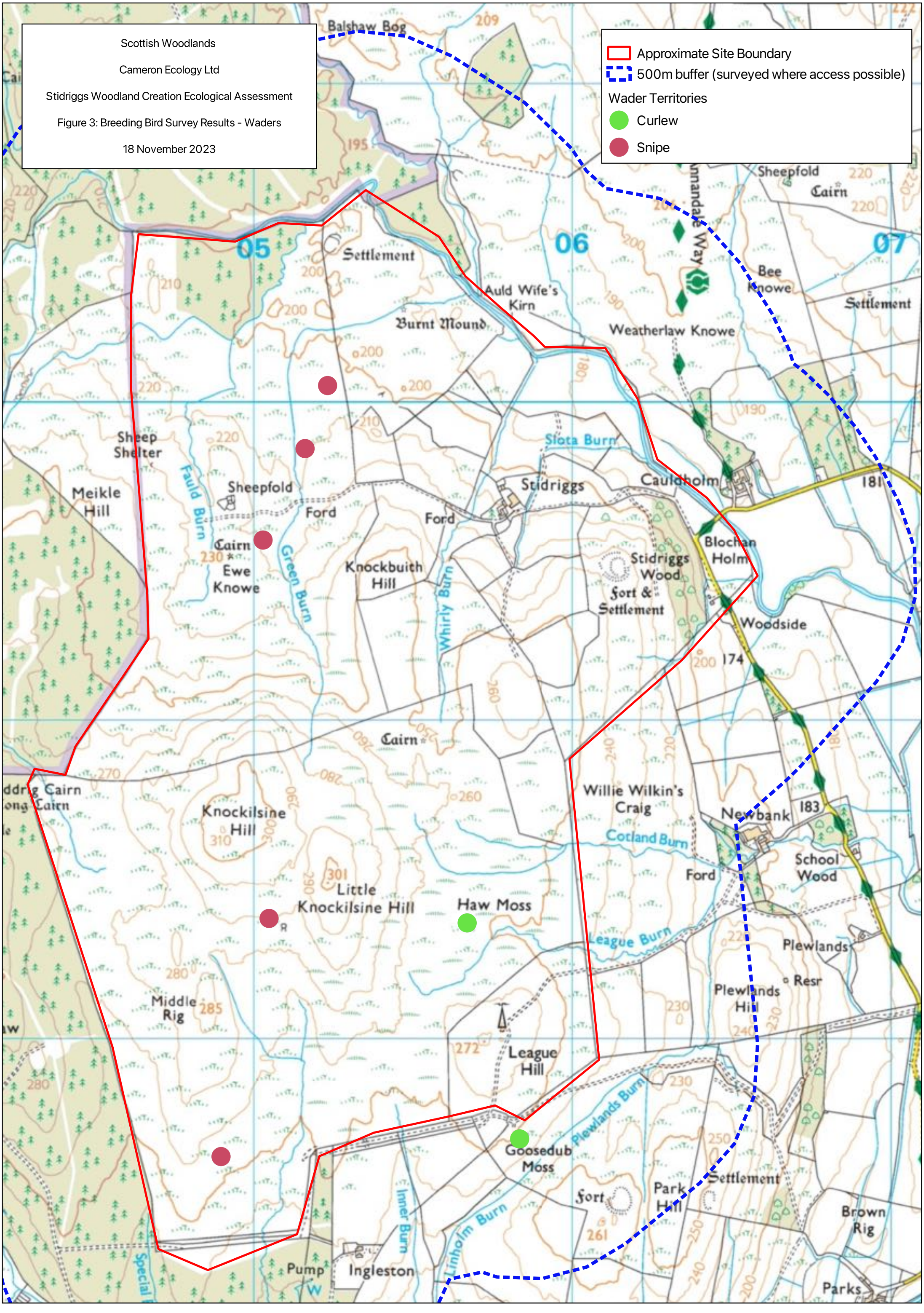

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Figure 4: Breeding Bird Survey Results - Skylark and Whinchat

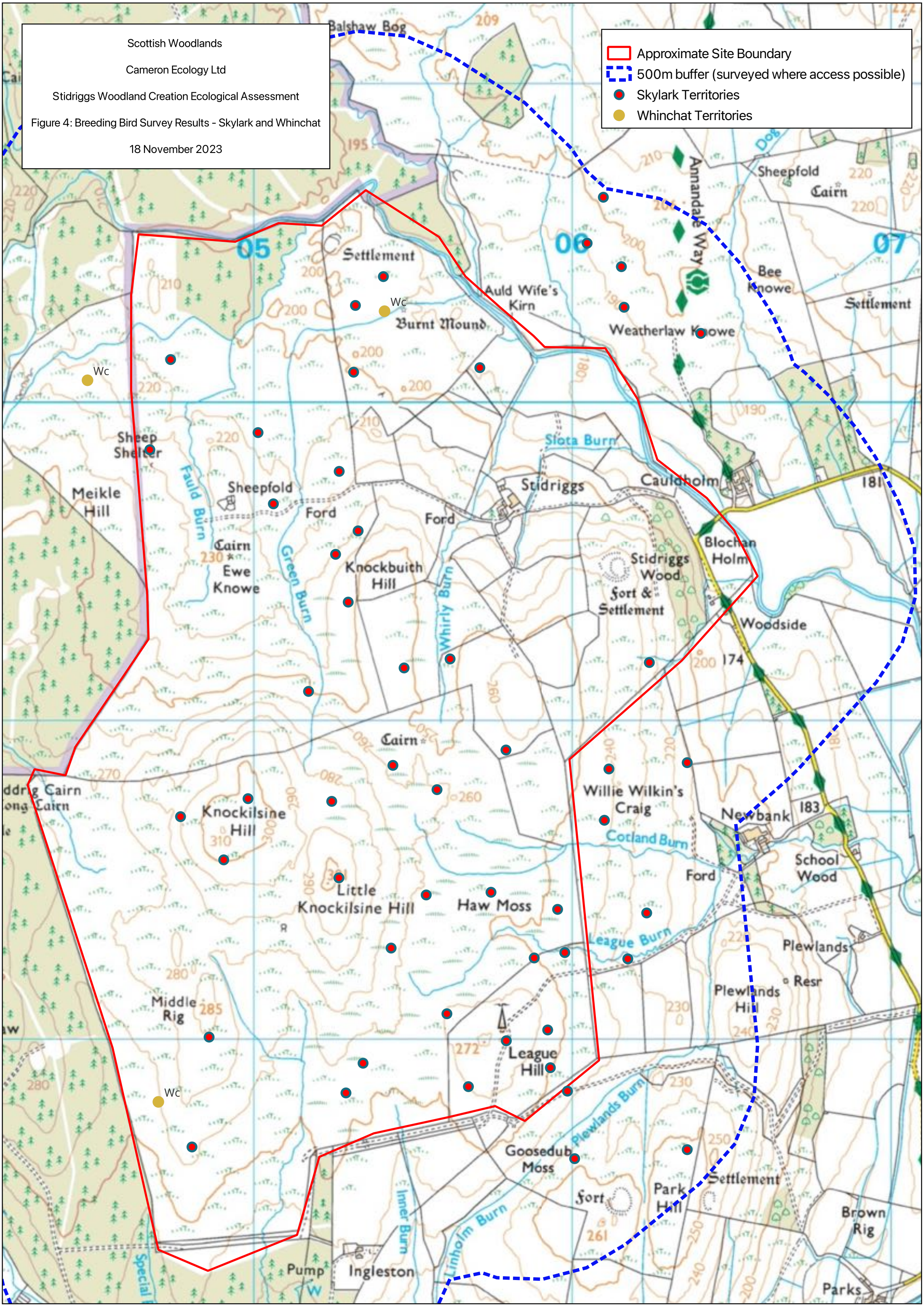
18 November 2023

Approximate Site Boundary

500m buffer (surveyed where access possible)

Skylark Territories

Whinchat Territories



Scottish Woodlands

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Stidriggs Woodland Creation Ecological Assessment

Figure 5: Constraints and Opportunities (including habitat sensitivity)

18 November 2023

Peatland restoration opportunities

Design could incorporate open ground connecting peatland and species rich grassland to benefit breeding snipe

Peatland restoration opportunity

small pearl-bordered fritillary could benefit from wide rides, especially in wetter areas

Opportunity to enhance connectivity of native woodland habitats

Opportinity to increase extent of native woodland

Peatland restoration opportunity

Approximate Site Boundary

Habitat Sensitivity

Low

Intermediate

High Sensitivity

500m around Curlew Territories

30m around badger evidence

APPENDIX 1: Species List and Target Notes and Summary Statistics

Phase 1 Habitat Survey Summary Statistics

Phase 1 Code	Habitat Type	Area (Ha)	% of Area
A1.1.1	Semi-natural broadleaved woodland	10.2	2%
A1.2.2	Coniferous Plantation Woodland	26.7	5%
A1.3.2	Mixed Plantation Woodland	0.4	0.1%
A2.1	Scrub	0.1	0.02%
B1.1	Unimproved Acid Grassland	71.9	13%
B1.2	Semi-improved Acid Grassland	29.6	5%
B3.1	Unimproved Neutral Grassland	0.7	0.1%
B4	Improved Grassland	49.4	9%
B5	Marshy Grassland	216.4	40%
B6	Species-poor Semi-improved Grassland	7.1	1%
C1.1	Dense Bracken	8.5	2%
C1.2	Scattered Bracken	21.8	4%
D2	Wet Heath	40.6	7%
E1.6.1	Blanket Bog	14.8	3%
E1.7	Wet Modified Bog	19.8	3%
E2.1	Acid Flush	6.1	1%
G1.1	Running Water	2	0.4%
J4	Tracks/Buildings/Other	4.2	1%
ns	Not Surveyed	12	2%
	Total	**542.101**	

Vascular Plants and Bryophytes

Species	English name
Achillea ptarmica	Sneezewort
Agrostis capillaris	Common bent
Alnus glutinosa	Alder
Anemone nemorosa	Wood anemone
Anthoxanthum odoratum	Sweet vernal-grass
Arrhenatherum elatius	False oat-grass
Avenella flexuosa	Wavy hair-grass
Bellis perennis	Dasiy
Blechnum spicant	Hard fern
Calluna vulgaris	Heather
Caltha palustris	Marsh marigold
Cardamine pratensis	Cuckoo-flower
Carex binervis	Green ribbed-sedge
Carex demissa	Common yellow-sedge
Carex echinata	Star sedge
Carex leporina	Oval sedge
Carex nigra	Common sedge
Carex panicea	Carnation sedge
Carex pulicaris	Flea sedge
Carex rostrata	Bottle sedge
Cerastium fontanum	Common mouse-ear
Cirsium arvense	Creeping thistle
Cirsium palustre	Marsh thistle
Cochlearia danica	Danish scurvy-grass
Conopodium majus	Pignut
Crepis paludosa	Marsh hawk's-beard
Cynosurus cristatus	Crested dog's-tail
Dactylorhiza fuchsii	Common spotted-orchid
Dactylorhiza maculata	Marsh spotted-orchid
Deschampsia cespitosa	Tufted hair-grass
Dicranum majus	A moss
Drosera rotundifolia	Round-leaved sundew
Dryopteris carthusiana	Narrow buckler-fern
Epilobium palustre	Marsh willowherb
Equisetum palustre	Marsh horsetail
Erica tetralix	Cross-leaved heath
Eriophorum vaginatum	Hare's-tail cotton-grass
Festuca ovina	Sheep's fescue

Species	English name
Festuca rubra	Red fescue
Filipendula ulmaria	Meadowsweet
Galium palustre	Marsh bedstraw
Galium saxatile	Heath bedstraw
Galium verum	Lady's bedstraw
Holcus lanatus	Yorkshire fog
Hylocomium splendens	A moss
Juncus acutiflorus	Sharp-flowered rush
Juncus effusus	Soft rush
Juncus squarrosus	Heath rush
Leucobryum sp	A moss
Lolium perenne	Perennial rye-grass
Luzula campestris	Field woodrush
Luzula multiflora ssp congesta	Heath woodrush
Luzula sylvatica	Greater Woodrush
Molinia caerulea	Purple moor-grass
Myosotis secunda	Creeping forget-me-not
Myrica gale	Bog myrtle
Nardus stricta	Mat-grass
Narthecium ossifragum	Bog asphodel
Phalaris arundinacea	Reed canary-grass
Picea sitchensis	Sitka spruce
Plantago lanceolata	Ribwort plantain
Plantago major	Greater plantain
Pleurozium schreberi	A moss
Potentilla erecta	Tormentil
Polygala serpyllifolia	Heath milkwort
Polytrichum commune	A moss
Potamogeton polygonifolius	Bog pondweed
Prunella vulgaris	Self-heal
Pteridium aquilinum	Bracken
Ranunculus acris	Field buttercup
Ranunculus repens	Creeping buttercup
Rhytidiadelphus squarrosus	A moss
Rumex acetosa	Common sorrel
Silene flos-cuculi	Ragged-robin
Sorbus aucuparia	Rowan
Sparganium erectum	Branched bur-reed
Sphagnum palustre	A bog-moss
Sphagnum papillosum	A bog-moss
Sphagnum rubellum	A bog-moss

Species	English name
Stellaria graminea	Greater stitchwort
Succisa pratensis	Devil's-bit scabious
Taraxacum faeroense	A dandelion
Taraxacum sp	A dandelion sp
Thymus drucei	Wild Thyme
Trichophorum germanicum	Deergrass
Trifolium repens	White clover
Urtica dioica	Stinging-nettle
Vaccinium myrtillus	Blaeberry
Vaccinium oxycoccos	Cranberry
Valeriana officinalis	Valerian
Veronica chamaedrys	Germander speedwell
Viola palustris	Marsh violet

APPENDIX 2: Breeding Bird Survey Methods and Results

2023 BREEDING BIRD SURVEYS

Date	18 April 2023	20 April 2023	3 May 2023	2 June 2023	12 July 2023
Observers	C MacIver	C MacIver	C MacIver	C MacIver	C MacIver
Survey	Breeding Birds	Breeding Birds	Breeding Birds	Breeding Birds	Breeding Birds
Start time	07:00	10:30	11:00	07:30	08:00
Finish time	15:00	12:30	17:00	15:00	16:00
Sunrise	06:03	05:59	05:29	04:340	21:49
Wind Speed (Beaufort)	1-2	1-2	0-3	1-2	2-3
Wind Direction	E	ENE	SSE	SE	SW
Rain	No	No	No	No	No
Cloud cover (octads)	3-4	0	7-8	0	7
Cloud height	>500m	>500m	>500m	>500m	>500
Visibility	>2km	>2km	>2km	>2km	>2km
Frost or Snow?	No	No, 5°C	No, 12°C	No	No

2023 BLACK GROUSE/RAPTOR SURVEYS

Date	20 April 2023	24 May 2023	2 June 2023
Observers	C MacIver	C MacIver	C MacIver
Survey	Black Grouse	Raptors	Raptors
Start time	04:30	16:35	15:00
Finish time	10:30	21:05	17:30
Sunrise/Sunset	05:59	21:32	21:45
Wind Speed (Beaufort)	1-2	2-3	1-2
Wind Direction	ENE	NW	SE
Rain	No	No	No
Cloud cover (octads)	0	8 (0/8 by 9pm)	0
Cloud height	>500m	>500m	>500m
Visibility	>2km	>2km	>2km
Frost or Snow?	No, 5°C	No	No, 19°C

Bird Survey Results: Species List

Fifty-two species were recorded, with details provided below. These numbers in most cases are not based on territory analysis but are simply maximum counts from across the four visits. Selected species in bold are shown on **Figures 3 and 4.**

BTO Code	Species Name	Number of Registrations in raw data	Breeding / Probable Breeding?	BOCC	Comment
B.	Blackbird	5	Y	G	Abundant around woodland edges and property boundaries
Bc	Blackcap	1	Y	G	In Stidriggs Wood
Bt	Blue Tit	3	Y	G	Woodland
Bf	Bullfinch	1	Y	G	Woodland
Bz	Buzzard	6	Y	G	At least two territories
C.	Carrion Crow	7	Y	G	Common in woodland edges
Ch	Chaffinch	14	Y	G	Common in woodland edges
Cc	Chiffchaff	1	Y	G	Not recorded in desk study
Ct	Coal Tit	2	Y	G	Common in woodland edges
Ck	Cuckoo	3	Y	R	Several individuals noted
Cu	Curlew	9	Y	R	Two territories interpreted from the data as shown in Figure 3
Di	Dipper	1	Y	A	Not recorded in desk study, present on watercourses
Gp	Golden Plover	3		G	Passage - Haw Moss
Go	Goldfinch	2	Y	G	Overflying
Gb	Great Black-backed Gull	1		A	Not recorded in desk study
Gt	Great Tit	2	Y	G	Stidriggs Wood
Gl	Grey Wagtail	3	Y	A	Watercourses - various locations

BTO Code	Species Name	Number of Registrations in raw data	Breeding / Probable Breeding?	BOCC	Comment
Gj	Greylag Goose	1		A	Not recorded in desk study, local feral breeders on Kinnel Water
Hm	House Martin	2		R	Overflying
Hs	House Sparrow	1		R	Overflying near properties in NE of survey area
Jd	Jackdaw	1	Y	G	Around Farm Buildings
J.	Jay	3		G	Stidriggs Wood
K.	Kestrel	2	Y	A	Hunting over open ground
Lr	Lesser Redpoll	4	Y	R	Scrubby areas to north
Li	Linnet	3	Y	R	In bog myrtle in NE
Lt	Long-tailed Tit	1	Y	G	Not recorded in desk study
Mg	Magpie	3	Y	G	Around properties/gardens
Ma	Mallard	2	Y	A	Not recorded in desk study
Mp	Meadow Pipit	2	Y	A	Commonest open ground bird. Not recorded individually.
M.	Mistle Thrush	5	Y	R	Spending time in open ground on hillsides
Nh	Nuthatch	1	Y	G	Not recorded in desk study, Stidriggs Wood
Ph	Pheasant	7		G	released birds
Pw	Pied Wagtail	2	Y	G	Around disturbed areas near Farm buildings
Pg	Pink-footed Goose	1		A	Not recorded in desk study, overflying only
Rn	Raven	4	Y	G	Breeding to West, overflying regularly
Kt	Red Kite	1		G	Overflying once
Rb	Reed Bunting	9	Y	A	In and around wet grassland areas
R.	Robin	5	Y	G	Woodland
Ro	Rook	2		A	Farm Buildings
Sk	Siskin	2	Y	G	Forest edges

BTO Code	Species Name	Number of Registrations in raw data	Breeding / Probable Breeding?	BOCC	Comment
S.	Skylark	138	Y	R	Shown in Figure 4
Sn	Snipe	9	Y	A	Shown in Figure 3
St	Song Thrush	1	Y	A	Forest edges
Sh	Sparrowhawk	2	Y	A	Display flights from 2 males noted in raptor surveys - both over forestry to N
Sc	Stonechat	7	Y	G	Around bracken areas
Sl	Swift	1		R	overflying only
To	Tawny Owl	1	Y	A	heard only - forestry to W
W.	Wheatear	8	Y	A	around walls throughout
Wc	Whinchat	3	Y	R	3 territories, shown on Figure 4
Ww	Willow Warbler	9	Y	A	abundant in forest edges
Wp	Wood Pigeon	5	Y	G	abundant in forest edges
Wr	Wren	14	Y	A	Stidriggs Wood

CONFIDENTIAL ANNEX: Details of Badger Evidence Recorded

Number of Entrances	Date	behaviour	Easting	Northing
1	20/04/2023	Sett	304868	599675
2	03/05/2023	Fresh digging, bedding	305191	599857
2	03/05/2023	Sett	305655	600563
7	03/05/2023	Sett	306222	599568
2	02/06/2023	Sett fresh digging	305318	600290
1	02/06/2023	Fresh digging	306392	599425
1	02/06/2023	Sett	306395	599417
6	02/06/2023	Sett	306318	599243
12	02/06/2023	Fox in one entrance	304836	600117
3	02/06/2023	Sett	304960	600154
0.5	26/06/2023	Fresh digging	304771	598570
1	26/06/2023	Sett	304658	599643
1	26/06/2023	Sett	304959	600152
5	12/07/2023	Latrine	305800	600230
5	12/07/2023	Latrine	305715	600269