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# HARRAS MOOR WHITEHAVEN WINTER BIRD SURVEY REPORT

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## 1.0 Introduction

- 1.1 TEP was commissioned in September 2017 by Homes England to determine the usage of the site off Caldbeck Road, Harras Moor, Whitehaven, by overwintering birds.
- 1.2 Homes England is proposing construction of housing with associated infrastructure.

### Site Description

The site primarily comprises poor semi-improved grassland fields used for grazing animals although some areas are unmanaged and have become overgrown. There are areas of marshy grassland within a number of the fields and many of the fields are bordered by strips of mixed plantation woodland of varying ages. Scrub and hedgerows are present in areas across the site. Existing residential and commercial development bounds the site on 3 sides and there is a golf course at the northeast border. The central grid reference of the site is NX986180 and the location of the site is shown at Figure 1.



Figure 1

### Site Suitability for Overwintering Birds

- 1.3 The grassland habitat within the northern part of site provides suitable refuge and foraging opportunities for overwintering birds, including waders and raptors. The woodland, hedgerows and scrub within the site has potential to support various woodland and woodland edge passerine species of conservation concern.

## 2.0 Method

### Winter Bird Survey

- 2.1 The winter bird survey comprised five visits across the months of November 2017 to March 2018. October to March forms the winter period where species of potential interest for this site are likely to be present in the area.
- 2.2 During each survey visit a transect route was walked throughout the proposed development site and surrounding area (up to 500m from site boundary). The transect surveys lasted for between four and six hours.
- 2.3 Birds recorded during the transect survey included: all wader, wildfowl and raptor species; Birds of Conservation Concern (BoCC) Amber or Red List species; priority species listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006); and protected species listed on Schedule 1 of the Wildlife and Countryside Act (1981, as amended). Additionally, any species listed as qualifying features of the Solway Firth proposed Special Protection Area (pSPA) were recorded. This marine designation is ca 1.8km west of the proposed development, and it is possible that some qualifying species may use farmland for roosting or foraging.
- 2.4 Observations were recorded directly onto the survey map.

## 3.0 Results

### Designated Sites

- 3.1 There are no internationally designated sites within 1km of the application site, however the following statutory sites are located within the wider area:
- St Bees Head SSSI 1.7km Southwest
  - River Ehen SAC and River Ehen SSSI 5.3km Southeast
- 3.2 Although the site falls within Natural England's Impact Risk Zone (IRZ) for the above SSSI sites, the residential proposals are unlikely to impact upon the designated sites. Neither of these statutory sites are designated for wintering birds.
- 3.3 The Solway Firth proposed Special Protection Area (pSPA) is not formally designated but has the same planning status as if it were. It is (at its closest point) 1.8km west of the site. It is a marine site which is a proposed southwards extension of an existing SPA. The pSPA supports internationally important non-breeding numbers of five specific waterfowl and waders, of which one (golden plover) might use inland sites with the grassland and woodland habitats present at Harras Moor.
- 3.4 The pSPA also supports an assemblage of internationally important numbers of migratory and non-breeding waterfowl, waders, wintering gulls and other waterbirds, of which the following might use inland sites like Harras Moor:
- Oystercatcher
  - Grey plover
  - Lapwing
  - Curlew
  - Black-headed gull
  - Common gull
  - Herring gull
- 3.5 There are five locally designated sites within 1km of the application site, which are:
- Midgley Gill County Wildlife Site (CWS) lies 50m southwest of the site boundary. This site however is 200m from the development boundary.
  - Castle Park Woodland CWS lies 130m west of the site.
  - Hope Mission Pond CWS lies 700m north east of the site.
  - Priestgill Wood Site of Invertebrate Significance lies 650m east of the site.
  - Snebra Hill Local Geological site lies 790m south of the site.

- 3.6 None of these locally designated sites have been designated for their bird interest.

### Winter Bird Survey

- 3.7 The results of the 2017-2018 winter bird survey are illustrated in Drawings G5060.Eco.HarrasMoorEcoandArb.003 to .011. Counts for each species during each survey visit are presented in Table 1.



Raptor, waterbird, protected and BoCC species

- 3.8 Thirteen target species were recorded on the ground within 500m of the proposed development site during the winter bird survey.
- 3.9 The majority of bird species recorded during the survey were passerines. Species such as dunnock, house sparrow, bullfinch and redwing were recorded in hedgerows, trees and scrub along field boundaries.
- 3.10 A flock of 30 twite were recorded foraging in the northern fields, during survey visit five on the 14th March 2018.
- 3.11 Wintering snipe were recorded on the first three survey visits with 15 being recorded within the site boundary on 10th November. 21 were recorded across the whole site on the same day. The only other waders noted was a flock of 22 lapwing present within the 500m buffer on 12th December 2017.
- 3.12 Meadow pipits were recorded during every survey visit with 15 being the peak count on 10th November 2017.
- 3.13 A kestrel was recorded in the 500m buffer on 16th January 2018 and a peregrine was seen flying over the site on 15th February 2018.
- 3.14 There is no evidence from winter bird survey that the site is functionally linked to the Solway Firth pSPA (see paragraphs 3.4 and 3.5 above). No golden plover were recorded at all. No assemblage species (paragraph 3.5) were recorded on site and two (lapwing and herring gull) were recorded in low numbers within 500m of the site on single occasions.

*Table 1: Peak counts of wader, wildfowl, other waterbird, raptors, protected and BoCC species on the ground within 500m of the proposed development site boundary during the transect survey.*

Species	Site Boundary (S) / Site Boundary inc. 500m Buffer (SBU)	Visit Number					Peak Count (date recorded)
		1	2	3	4	5	
Bullfinch	S	1					1 (10/11/17)
	SBU	3					3 (10/11/17)
Dunnock	S				2		2 (15/02/18)
	SBU		1		4		4 (15/02/18))
Fieldfare	S						
	SBU			29			29 (16/01/18)
Herring Gull	S						
	SBU		4				4 (12/12/17)
House Sparrow	S		5				5 (12/12/17)

Species	Site Boundary (S) / Site Boundary inc. 500m Buffer (SBU)	Visit Number					Peak Count (date recorded)
		1	2	3	4	5	
	SBU	2	12				12 (12/12/17)
Kestrel	S						
	SBU			1			1 (16/01/18)
Lapwing	S						
	SBU		22				22 (12/12/17)
Meadow Pipit	S	15	3	1	1	2	15 (10/11/17)
	SBU	20	8	1	1	2	20 (10/11/17)
Redwing	S				21		21 (15/02/18)
	SBU				21		21 (15/02/18)
Snipe	S		15	2			15 (12/12/17)
	SBU	17	21	2			21 (12/12/18)
Song Thrush	S			1	1		1 (16/01/18 and 15/02/18)
	SBU		1	1	1		1 (12/12/17, 16/01/18 and 15/02/18)
Starling	S			27		12	27 (16/01/18)
	SBU		15	28	12	12	28 (16/01/18)
Twite	S					30	30 (14/03/18)
	SBU					30	30 (14/03/18)

S: Site; SBU: Site including 500m buffer

Visit 1: 10th October 2017; Visit 2: 12th December 2017; Visit 3: 16th January 2018; Visit 4: 15th February 2018; Visit 5: 14th March 2018



## 4.0 Implications and Recommendations

- 4.1 Thirteen raptor, waterbird, protected or BoCC species were recorded on the ground within 500m of the proposed site boundary during the winter bird survey. Generally low numbers of each of these species was recorded.
- 4.2 The site is assessed to be of less than local importance for wintering birds, due to the low numbers of priority bird species recorded to use the site during the survey.
- 4.3 There is no functional linkage between the site and the Solway Firth proposed Special Protection Area.
- 4.4 Snipe appear to have been wintering at the site in the areas of damp grassland during the first half of the winter. These however appear to have moved on towards the latter part of the survey. Snipe are likely to be present on fields throughout the wider area. It is recommended that the areas of marshy grassland are retained within the site where possible, to continue to form suitable wintering habitat for this species.
- 4.5 Twite winter in coastal areas in the UK. Birds recorded along the western coast, such as the birds recorded within the site on the fifth survey visit, are likely to be birds that breed in Scotland. Twite are mobile through the winter and were likely to be passing through the site, rather than the site forming important habitat for this species. With the volume of suitable feeding habitat nearby, they are likely to be unaffected by the proposals.
- 4.6 Many of the other passerines recorded are associated with the hedgerows and woodland on site. These include Birds of Conservation Concern species such as bulfinch, dunnock, house sparrow, redwing and song thrush. The hedgerow and woodland habitats should be retained within the site wherever possible.

## **APPENDIX A: Designated site citations**



**Scottish Natural Heritage**  
**Dualchas Nàdair na h-Alba**

All of nature for all of Scotland  
Nàdar air fad airson Alba air fad



**Solway Firth**  
**Proposed Special Protection Area (pSPA)**  
**NO. UK9005012**

**SPA Site Selection Document:**  
**Summary of the scientific case for site selection**

**A composite of the existing Upper Solway Flats and Marshes SPA**  
**and a proposed marine extension**

## 1. Introduction

This document provides Scottish Natural Heritage's (SNH) and Natural England's (NE) advice on the proposed extension to the existing Upper Solway Flats and Marshes Special Protection Area (SPA) in the marine waters of the "Solway Firth" for inshore non-breeding waterfowl and non-breeding gulls. The proposal includes a name change from the Upper Solway Flats and Marshes SPA to the Solway Firth proposed SPA to include the marine extension. From this point forward, the site will be referred to as the Solway Firth proposed SPA (pSPA). The document summarises the evaluation for each of the species of interest according to the SPA site selection guidelines (JNCC, 1999) and provides an overview of how the site boundary was developed.

The Solway Firth pSPA has been selected to provide protection to important wintering grounds used by feeding and roosting red-throated diver, common scoter and goosander which migrate to the UK or from inland breeding sites every year to overwinter or to stop off at as one of their staging posts while on migration. The Solway is also notable for its concentrations of three species of non-breeding gulls. The protection of these inshore waters will make a key contribution to the maintenance of these species in their natural range in UK marine waters and form part of a coherent network of sites at a European level.

The importance of the marine environment for birds which spend all or part of their lives around our coasts is well recognised. A total of 106 species of bird are thought to use UK marine waters of which 45 occur in numbers greater than fifty each year and are dependent on the marine environment for a large part of their lifecycle. All of these 45 species except one (black guillemot<sup>1</sup>) are considered rare or vulnerable bird species (Annex 1), or regularly occurring migratory species by the Birds Directive (EC Directive on the conservation of wild birds (amended) - 2009/147/EC). This means that all Member States are obliged to take account of the requirements of Article 4.1 of the Birds Directive for each of these 44 species.

Article 4.1 states that "Member States shall classify in particular the most suitable territories in number and size as special protection areas for the conservation of these species, taking into account their protection requirements in the geographical **sea** and land area where this Directive applies". EU guidance on the establishment of SPAs in the marine environment (2007) sets out the groups of marine birds for which SPAs should be considered in the marine environment. This includes sites for non-breeding waterfowl and gulls.

In the UK, whilst some coastal SPAs include marine waters below the Mean High Water Springs (MHWS) there are only four entirely marine SPAs classified; Outer Thames Estuary SPA (England), Liverpool Bay/Bae Lerpwl SPA (England/Wales) and Bae Caerfyrddin/Carmarthen Bay SPA (Wales) and Belfast Lough - Open Water SPA (Northern Ireland). In Scotland, 31 marine extensions to seabird colony SPAs

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<sup>1</sup> Nature Conservation Marine Protected Areas were designated in August 2014 for black guillemot.

have also been classified. The existing suite of sites is not considered sufficient to meet the requirements of Article 4.1 because it currently does not include suitable territories at sea for all of the species that the UK has a responsibility for.

Additionally, the UK SPA Review (Stroud, 2001) which concentrated on terrestrial SPAs highlighted that the UK had no existing SPAs to support wintering gulls. The Review recommended that appropriate data be collected to allow a national (UK) assessment of wintering gulls to enable the consideration of additional SPAs. Furthermore, the Review also concluded that there were not enough SPAs for species such as lapwing, ringed plover and great cormorant and that these species should be added into existing sites and new sites, where their populations met the required selection guidelines.

The Solway Firth is being proposed as part of a suite of marine sites that aim to fulfil the requirements for SPAs in the marine environment for rare or vulnerable birds and regularly occurring migratory birds in the UK. As required by Article 4 of the Directive, the classification of the extended area of this site will enable the application of special conservation measures concerning the habitat of Annex 1 and regularly occurring migratory birds in order to ensure their survival and reproduction in their area of distribution.

Full details of the site survey methodologies, data and analysis used to inform the proposed selection of this site are provided in Lawson *et al* (2015) for non-breeding inshore waterfowl and Burton *et al* (2013) for non-breeding gulls. All scientific work received full external independent peer review at key stages.

## 2. Site summary

The Solway Firth pSPA is a large estuarine/marine site with a total area of 1357.49km<sup>2</sup> situated between the western coastal margins of Cumbria in England and Dumfries and Galloway in Scotland, off the west coast of Great Britain (**Figure 1**). It is one of the largest estuaries in the UK along with Morecambe Bay and the Wash.

The Solway Firth (including the classified Upper Solway Flats and Marshes SPA and the proposed marine extension) supports populations of European importance of the following Annex 1 species:

- Red-throated diver (*Gavia stellata*)<sup>2</sup>
- Whooper swan (*Cygnus cygnus*)
- Barnacle goose (*Branta leucopsis*)
- Golden plover (*Pluvialis apricaria*)
- Bar-tailed godwit (*Limosa lapponica*)

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<sup>2</sup> Qualifying Annex 1 species of the pSPA marine extension

And supports migratory populations of European importance, of the following species:

- Pink footed goose (*Anser brachyrhynchus*)
- Shelduck (*Tadorna tadorna*)\*
- Teal (*Anas crecca*)\*
- Pintail (*Anas acuta*)
- Shoveler (*Anas clypeata*)\*
- Scaup (*Aythya marila*)
- Common scoter (*Melanitta nigra*)\*<sup>3</sup>
- Goldeneye (*Bucephala clangula*)\*
- Goosander (*Mergus merganser*)\*<sup>3</sup>
- Oystercatcher (*Haematopus ostralegus*)
- Knot (*Calidris canutus*)
- Ringed plover (*Charadrius hiaticula*)<sup>4</sup>
- Grey plover (*Pluvialis squatarola*)\*
- Lapwing (*Vanellus vanellus*)\*<sup>4</sup>
- Dunlin (*Calidris alpina*)\*
- Sanderling (*Calidris alba*)\*
- Redshank (*Tringa totanus*)
- Turnstone (*Arenaria interpres*)\*
- Curlew (*Numenius arquata*)
- Cormorant (*Phalacrocorax carbo*)\*<sup>4</sup>
- Black-headed gull (*Larus ridibundus*)\*<sup>4</sup>
- Common gull (*Larus canus*)\*<sup>4</sup>
- Herring gull (*Larus argentatus*)\*<sup>4</sup>

\*Named qualifiers of the water bird assemblage.

The coastal area within the existing SPA includes a range of habitats including mudflats and sandflats, lagoons, salt marshes and inland water bodies. This diversity is extended into the marine environment with the sea bed comprising a wide range of mobile sediments.

The inner Solway firth is shallow often less than 10m deep, as is Wigtown Bay. This and the funnel-like shape of the inner firth cause strong tidal currents and therefore the sediments tend to be predominantly sandy nature. Channels within the estuary are constantly moving changing the shapes of sandbanks.

The tidal currents decrease in speed to the north of the Irish Sea, and hence the sea-bed sediments generally become muddier. However, northwards towards the entrance to Luce Bay, the sea bed is largely covered with a coarse gravel overlying till or glacial sediments.

The extensive mudflats and sandflats of the Solway support a typical estuarine fauna including a mix of polychaetes worms and bivalves, together with vast numbers of

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<sup>3</sup> Qualifying migratory species of the pSPA marine extension

<sup>4</sup> Species included as part of the 2001 UK SPA Review requirements

the burrowing amphipods *Corophium volutator* and *Bathyporeia* species (Perkins 1973). A wide range of pelagic and demersal fish also occur in the area, which acts as spawning grounds or nursery areas for a number of species.

Red-throated divers and goosanders move to coastal areas in winter from their breeding sites and feed on a wide variety of fish, which they catch by diving from the surface and pursuing their prey underwater. The fish species taken will be influenced by what is locally most readily available, but the diet of divers and goosanders can include haddock *Melanogrammus aeglefinus*, cod *Gadus morhua*, herring *Clupea harengus*, sprats *Sprattus sprattus* and gurnard *Eutrigla gurnardus* along with smaller species such as sand-eels *Ammodytidae*, pipefish *Syngathidae*, gobies *Gobiidae*, flatfish *Pleuronectidae* and butterfish *Pholis gunnellus*.

Common scoter feed almost exclusively on molluscs and small crustaceans, diving from the surface to pluck their prey from the sea bed.

Diving activity varies among species but average foraging dive depths for red-throated diver, common scoter and goosander are shallower than 15m.

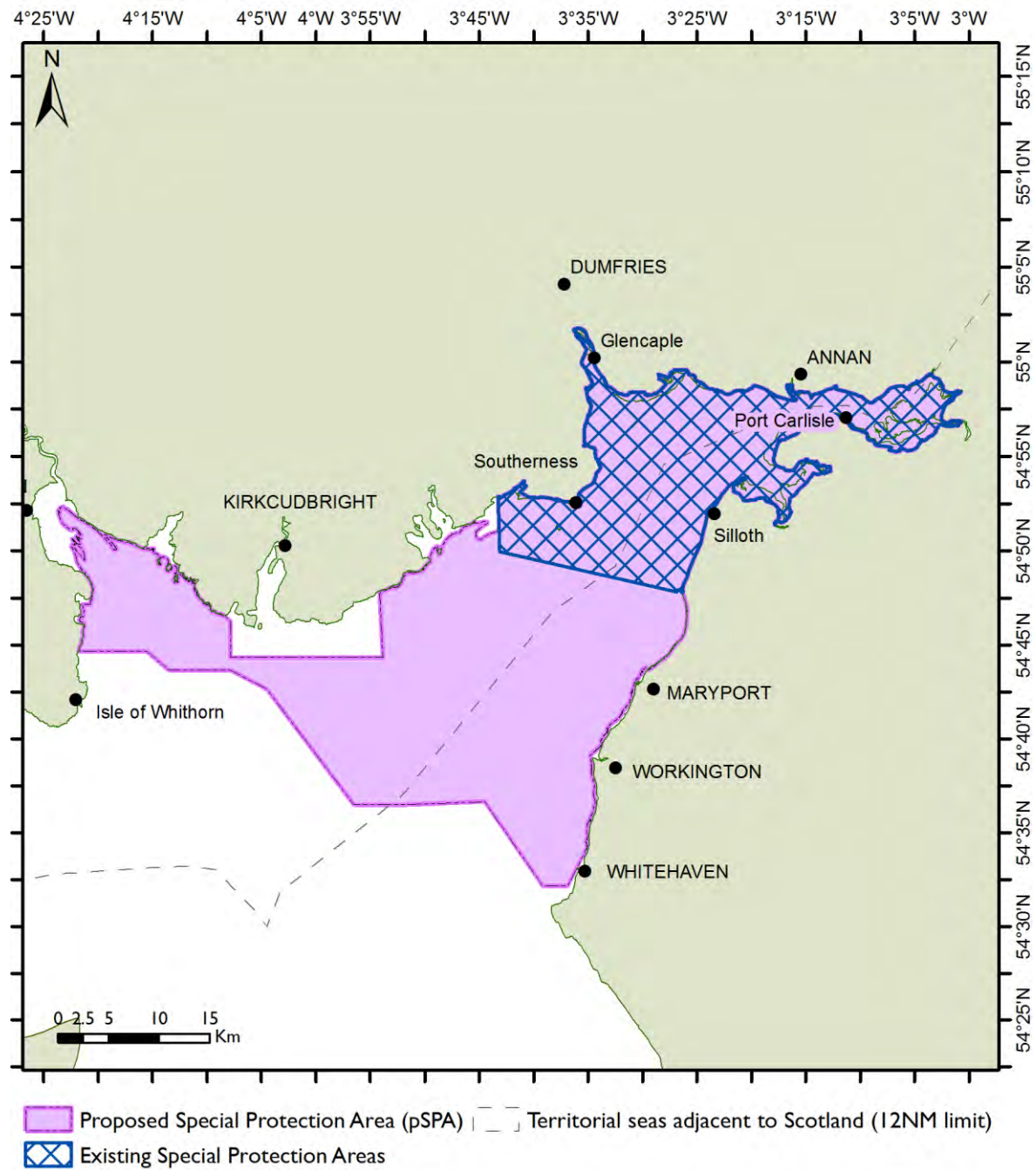
The presence of high densities of non-breeding waterfowl at this site is indicative of the productivity and availability of prey these shallow waters and their habitats provide.

Black-headed gull, common gull and herring gull use the inshore waters primarily for roosting, although some day time foraging in intertidal areas will also take place.

Whilst the shallower areas may be the focus for foraging activities, the wider area within close proximity will also be used by non-breeding birds for preening, moulting, loafing and roosting. The northern Irish Sea is relatively land-locked and the exposure of coasts to winds is variable. Local topography and wind direction are important in determining local conditions and extreme wind speeds and therefore prime factors in determining suitable habitat for birds that over-winter.



**Figure 1. The Solway Firth pSPA.**



NOT FOR NAVIGATION. Created by Scottish Government (Marine Scotland), 2016. gj0977. © Crown Copyright. All rights reserved. Ordnance Survey License No. 100024655. Contains data from JNCC, SNH. Projection: Mercator. Datum: WGS 1984. Standard Parallel: 54°45'0.00"N Scale 1:650,000

Name: St Bees Head

District: Copeland

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981.

Local Planning Authority: Copeland District Council

National Grid Reference: NX 945133 Area: 171.52 (ha) 423.7 (ac)

Ordnance Survey Sheet 1:50,000: 89 1:10,000: NX 91 SE, NX 91 NE,  
NX 91 SW, NX 91 NW

Date Notified (Under 1949 Act): 1959 Date of Last Revision: 1968, 1984, 1995

Date Notified (Under 1981 Act): 1995

Other Information:

1. The boundary of this site has been modified by an extension at this revision, to incorporate new geological sites.
2. This site incorporates five Geological Conservation Review sites, locations in Saltom Bay and Fleswick-St Bees Head, St Bees.
3. A large part of the site is managed as a nature reserve by the Royal Society for the Protection of Birds.

Description and Reasons for Notification:

St Bees Head is the most westerly point on the Cumbria coast, approximately 1 km southwest of Whitehaven. The SSSI comprises a 8 km stretch of coast between St Bees and Whitehaven and encompasses the sheer cliff face, an area of cliff-top grassland and the shore down to the mean low-water mark. The cliffs reach a height of 90 m in places and expose the St Bees Sandstone, some sections of which are of great geological interest for their sedimentary structures. Further south, the cliffs at St Bees are of considerable importance for interpreting late Devensian glacial events and environmental conditions. Further north, in Saltom Bay the foreshore and adjacent areas provide the best exposure of the Permian rock sequence and marine strata in Cumbria and also the best available exposure of the Whitehaven Sandstone formation.

The biological interest of the site is represented in a number of different habitats: natural cliff-top grassland and heath, sheer cliff face and cliff-fall rubble, shingle and wave-cut platform. The outstanding interest of this area lies, however, in the sheer cliffs which provide the only breeding site on the coast of Cumbria for a variety of colonial seabirds. These include over 2,000 pairs of guillemots along with lesser numbers of fulmar, kittiwake, razorbill, cormorant, puffin, shag and herring gull. The cliffs are, in addition, the only breeding site on the entire coast of England for black guillemots. Several other birds are known to use this site regularly for breeding and these include the tawny owl, sparrowhawk, peregrine, raven and rock pipit, which is known to breed in only one other site in Cumbria. The rugged cliff face supports a

diverse flora in the crevices and ledges of the crumbling sandstone. Towards the cliff base, sea pink or thrift *Armeria maritima*, scurvygrass *Cochlaria officinalis* and sea campion *Silene maritima* are commonly found. Sea spleenwort *Asplenium marinum* occurs in damp crevices and rock samphire *Crithmum maritimum* and the rare rock sea lavender *Limonium binervosum* have also been recorded. Towards the top of the cliff, bloody cranesbill *Geranium sanguineum*, wood vetch *Vicia sylvatica* and orpine *Sedum telephium* are found and soft shield-fern *Polystichum setiferum* occurs in several rocky recesses. Along the cliff top, on the dry sandy soils grassland with species such as dyer's greenweed *Genista tinctoria* alternates with patches of western gorse *Ulex gallii*, heather *Calluna vulgaris* and bracken *Pteridium aquilinum*.

The geological interest of the site is concentrated in three main areas, between Fleswick and Rottington Beck and the cliffs of St Bees golf course in the south and around Saltom Bay at the North End of the site. The middle part of the Lower Triassic St Bees Sandstone is magnificently exposed at Fleswick Bay. The succession is dominated by fine to medium grained sandstones bounded by major erosion surfaces. Sedimentary structures include planar-tabular and trough cross-bedding, with minor cross-laminated siltstone and mudrock intervals. The erosion surfaces separate a series of fining-upwards rock units, which are similar to those of modern, sandy, braided-river deposits. Further south the upper St Bees Sandstone is seen. Sedimentary structures such as infraformational conglomerates and major erosion surfaces are well-developed and crossbedding here indicates fluvial transport towards the north-north-west. An important feature is the presence of soft sediment deformation structures which were produced by water escaping from the sediment after deposition. This is a key site for the demonstration of fluvial environments in rocks and Triassic age. The cliffs of the St Bees golf course and further south are a site of considerable importance for interpreting Late-Devensian glacial events and Late-glacial environmental conditions in northwest England. Coastal sections in a belt of hummocky deposits have over the years revealed a succession of interbedded tills, sands and gravels. Although interpretations differ in detail, parts of the succession have been referred to a re-advance of Scottish ice on to the Cumbrian coast. The upper part of the succession is also significant in providing lithostratigraphic and biostratigraphic evidence for Late-glacial environmental conditions. Radiocarbon dates, pollen and coleoptera from a sequence of organic deposits together provide complementary evidence for the sequence and timing of environmental change during the Windermere Interstadial and Lock Lomond Stadial. St. Bees is therefore a key site both for assessing the evidence for a readvance of Scottish ice and for palaeoenvironmental studies. Some of the foreshore in Saltom Bay and adjacent areas (e.g. disused quarries) provide the best exposure of the Permian rock sequence in West Cumbria. A basal breccia (brockram) rests unconformably on the Whitehaven Sandstone (Carboniferous) and passes upwards into the Saltom Dolomite, an Upper Permian marine carbonate. The overlying St Bees Shales (Upper Permian) are seen at Barrowmouth, and southwards and ascending sequence in the lower part of the St Bees Sandstone shows a variety of sedimentary features typical of a fluvial environment. This is a key locality affording sections showing a variety of Lower and Upper Permian environments and facies.

The northernmost section of foreshore, towards Whitehaven is the best available exposure of the Whitehaven Sandstone Formation, a sequence of red sandstones of middle Westphalian (probably Westphalian C) age. They were originally thought to lie unconformably on the underlying grey Coal Measures, but they are now believed to be conformable. Their reddening is thus probably linked with that of the Etruria Formation in the

Midlands coalfields. The sedimentology of these strata have not been studied in detail, which will be essential if the exact relationship of the sandstones to the other British sequences is to be determined; and Saltom Bay provides the best available section for such a study. This is a site of considerable scientific significance. The coastal section at Barrowmouth is the best exposure of late Permian marine strata in Cumbria. The marine strata are represented by 4.6 m of varied shallow-water dolomite (Saltom Dolomite Formation) that was formed near the eastern edge of the Bakevella Sea. Barrowmouth Beach is the only GCR site to display marine Permian strata from the eastern margin of the Bakevella Sea. Common fossils in the sequence include the bivalves *Bakevella* and *Permophorus*.

## **APPENDIX B: Winter bird survey weather data**

*Winter bird survey weather data*

Visit/Date	Surveyor	Weather
Visit 1 10/11/2017	Lausanne Jenkins	Overcast, breezy with light rain. Excellent visibility.
Visit 2 12/12/2017	Lausanne Jenkins	Overcast, breezy and dry. Excellent visibility.
Visit 3 16/01/2018	Tim Ross	Overcast, breezy and dry. Excellent visibility.
Visit 4 15/02/2018	Phil Askew	Bright, sunny, dry and breezy. Excellent visibility.
Visit 5 14/03/2018	Phil Askew	Dry, cloudy and still. Excellent visibility.

## **DRAWINGS**

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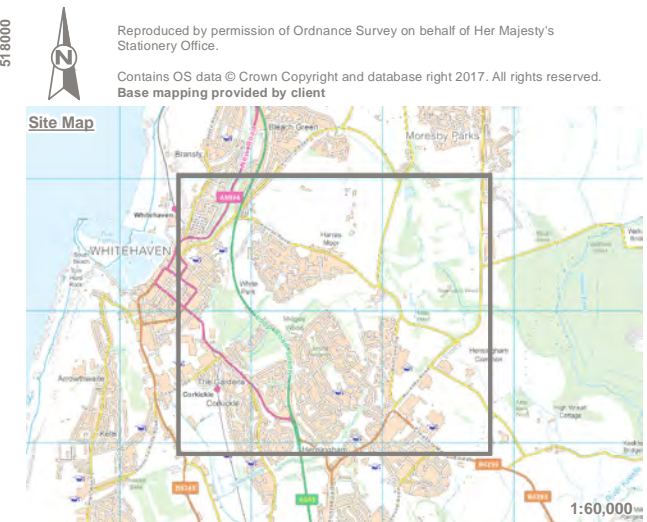
**KEY**

- Site Boundary
- 500m Offset from Site Boundary
- Section 41 Species
- Colony
- Alarm Call
- Calling
- Male
- Directional Flightline

**Bird Species List**

BF Bullfinch	MP Meadow Pipit
BH Black-headed Gull	SG Starling
HG Herring Gull	SH Sparrowhawk
HS House Sparrow	SN Snipe
K Kestrel	ST Song Thrush

**Note**  
Red Red List Species  
Amber Amber List Species



Rev	Description	Drawn	Approved	Date

T E P

THE ENVIRONMENT PARTNERSHIP

Genesis Centre, Birchwood Science Park, Warrington WA3 7BH  
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Homes & Communities Agency

Project  
Harras Moor, Cumbria

Title  
Winter Bird Survey - Visit 1 10<sup>th</sup> November 2017

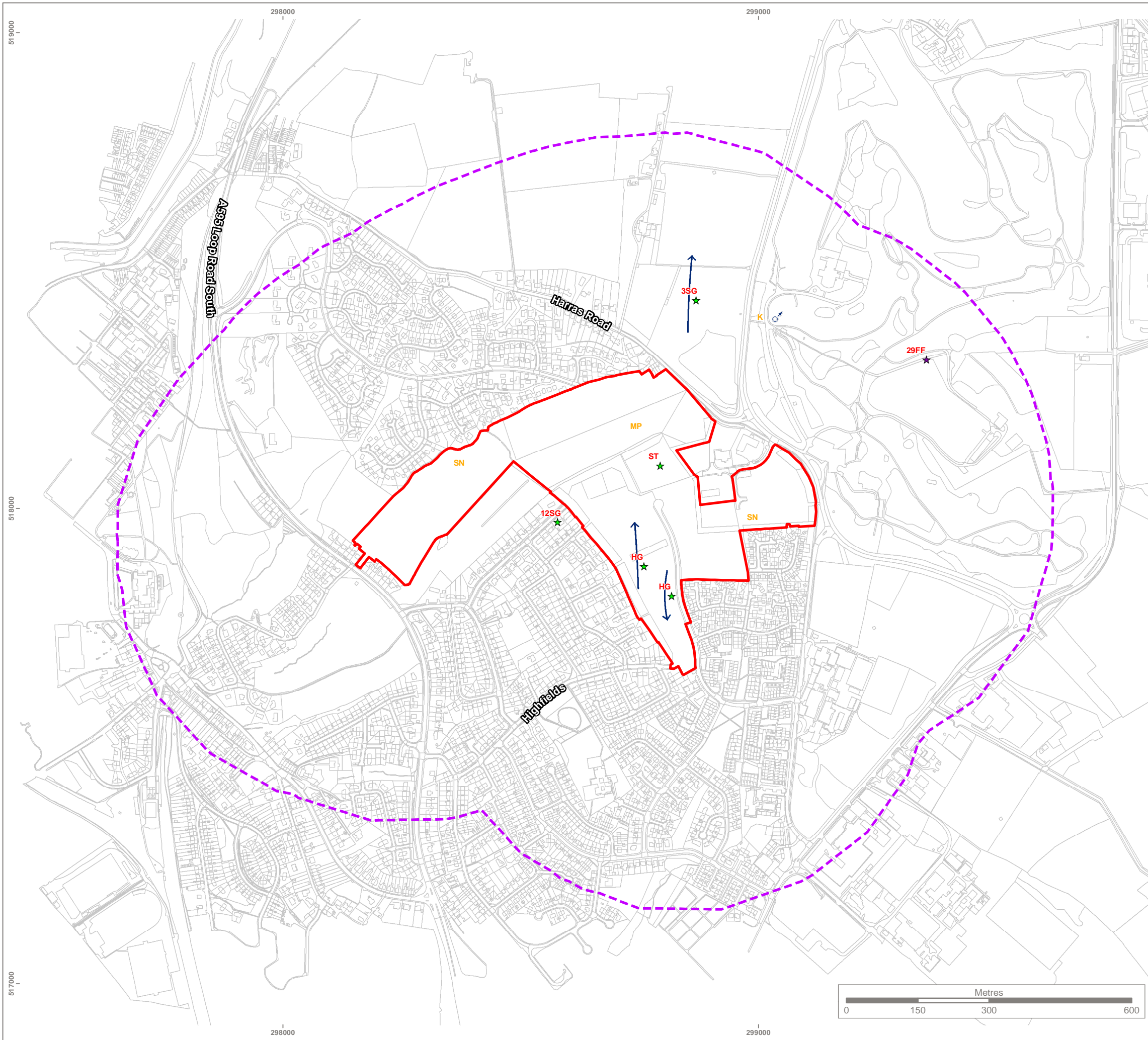
Drawing Number  
G5060.Eco.HarrasMoorEcoandArb.003

Drawn RH	Checked JS	Approved KS	Scale 1:8,000 @ A3	Date 16/01/2018
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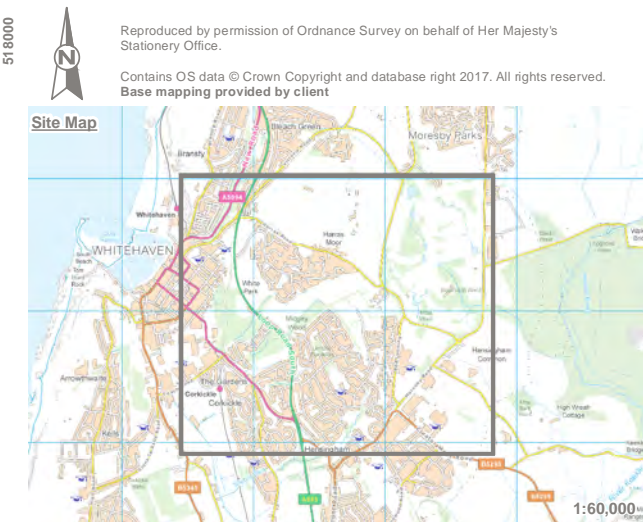




- KEY**
- Site Boundary
  - 500m Offset from Site Boundary
  - Section 41 Species
  - Schedule 1 Species
  - Male
  - Directional Flightline

- Bird Species List**
- |    |              |    |             |
|----|--------------|----|-------------|
| FF | Fieldfare    | SN | Snipe       |
| HG | Herring Gull | ST | Song Thrush |
| K  | Kestrel      |    |             |
| MP | Meadow Pipit |    |             |
| SG | Starling     |    |             |

**Note**  
**Red** Red List Species  
**Amber** Amber List Species



Rev	Description	Drawn	Approved	Date



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Homes & Communities Agency

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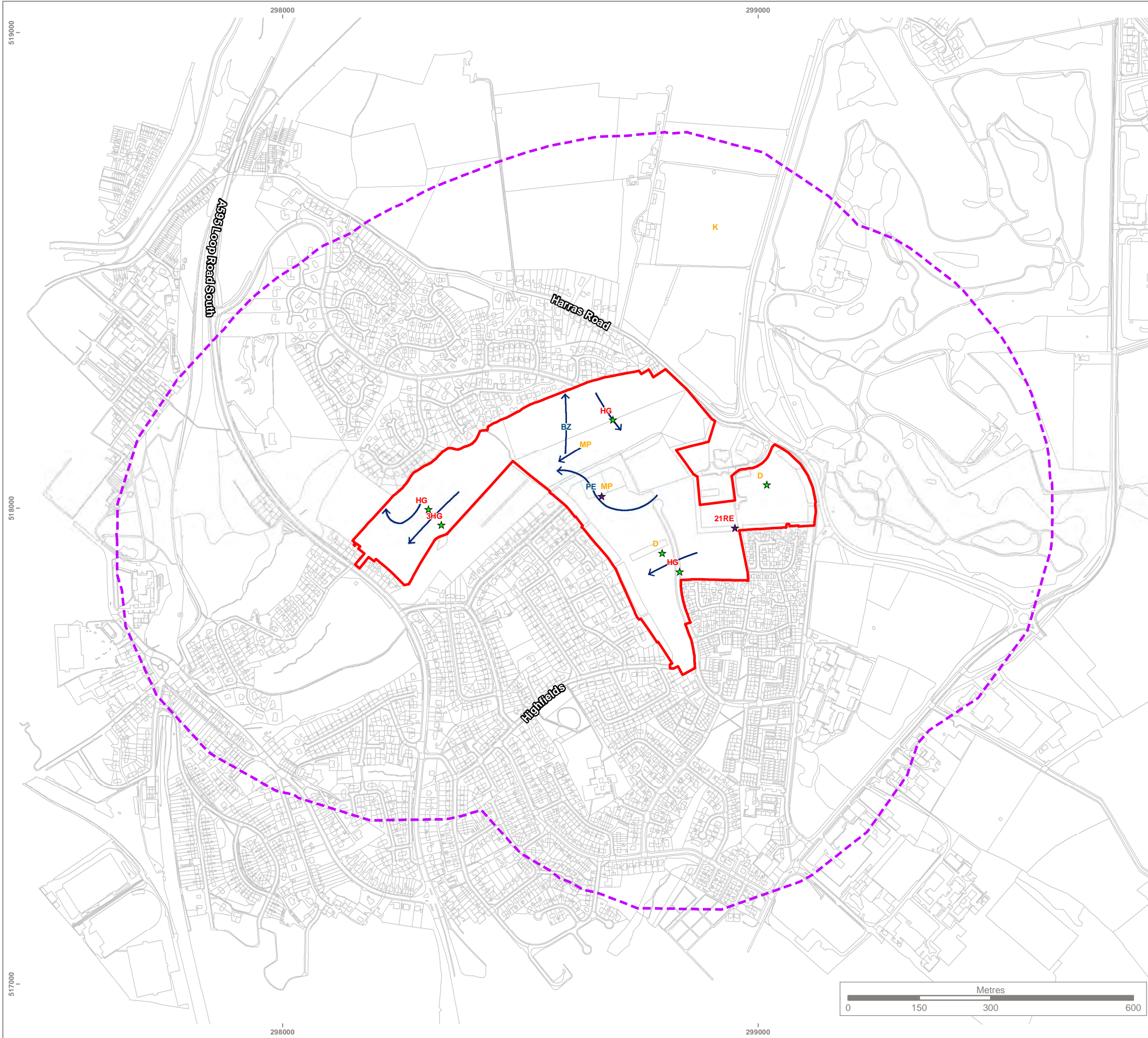
Project  
Harras Moor, Cumbria

Title  
Winter Bird Survey - Visit 3 16<sup>th</sup> January 2018

Drawing Number  
G5060.Eco.HarrasMoorEcoandArb.008

Drawn	Checked	Approved	Scale	Date
RH	MK	TR	1:8,000 @ A3	09/04/2018





**KEY**

- Site Boundary
- 500m Offset from Site Boundary
- Section 41 Species
- Schedule 1 Species
- Directional Flightline

- Bird Species List**
- |    |              |    |           |
|----|--------------|----|-----------|
| BZ | Buzzard      | PE | Peregrine |
| D  | Dunnock      | RE | Redwing   |
| HG | Herring Gull |    |           |
| K  | Kestrel      |    |           |
| MP | Meadow Pipit |    |           |

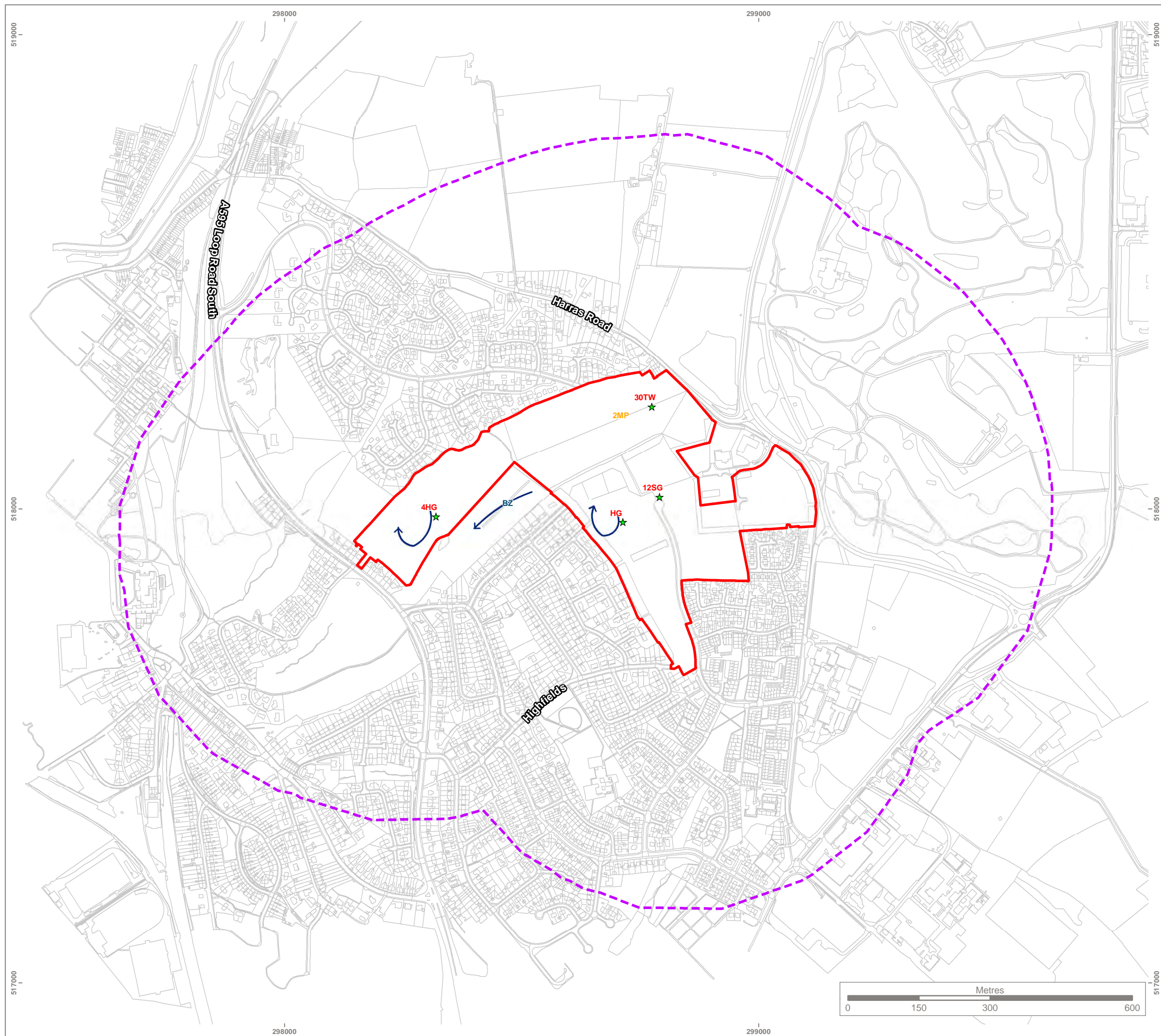
**Note**  
Red Red List Species  
Amber Amber List Species

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Base mapping provided by client





**Site Map**

Rev	Description	Drawn	Approved	Date
<div><div><div>TTP</div><div>THE ENVIRONMENT PARTNERSHIP</div></div><div>Genesis Centre, Birchwood Science Park, Warrington WA3 7BH Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com</div></div>				
Project Harras Moor, Cumbria				
Title Winter Bird Survey - Visit 4 15 <sup>th</sup> February 2018				
Drawing Number G5060.Eco.HarrasMoorEcoandArb.010				
Drawn JO	Checked JS	Approved TR	Scale 1:8,000 @ A3	Date 22/03/2018





**KEY**

-  Site Boundary  
 500m Offset from Site Boundary  
 Section 41 Species  
 Directional Flightline

### Bird Species List

BZ Buzzard  
HG Herring Gull  
MP Meadow Pipit  
SG Starling  
TW Twite

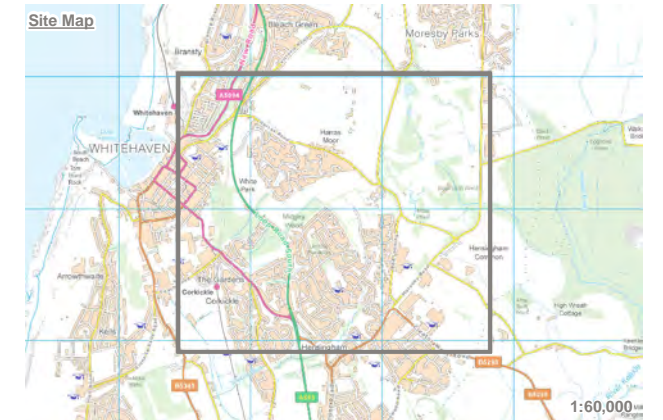
**Note**

**Red** Red List Species  
**Amber** Amber List Species



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Rev	Description	Drawn	Approved	Date



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Project  
Harras Moor, Cumbria

Title  
Winter Bird Survey - Visit 5 14<sup>th</sup> March 2018

Drawing Number  
G5060.Eco.HarrasMoorEcoandArb.011

Drawn	Checked	Approved	Scale	Date
RH	JS	TR	1:8,000 @ A3	03/04/2018



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