

# Volume 3A

## Ecological Desk Study

# 1. Desk Study

## 1.1 Methodology

- 1.1.1 The following desk-based assessment was carried out with the aim of identifying potential ecological constraints to the Proposed Development, following the Chartered Institute of Ecology and Environmental Management (CIEEM) best practice guidelines<sup>1</sup>. The exercise was undertaken to obtain existing information relating to relevant ecological features; these are statutory and non-statutory biodiversity sites, habitats and species of principal importance<sup>2</sup>, legally protected and controlled species and other conservation notable species that have been recorded over the previous 10 years (i.e. 2010 to 2020).
- 1.1.2 **Table 1.1** lists the data compiled within the desk study area, which is the Project Site boundary as identified in **Figure 1.5** of Volume 7 and as described in Chapter 2 of Volume 3 and the additional areas of search beyond, and is shown on **Figure 3A6.1**.

Table 1.1 Information Relevant to the Desk Study

Ecological feature	Example/description	Study Area
<b>Statutory sites designated under International conventions or European legislation</b>	Wetlands of International Importance (also known as Ramsar sites), Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) <sup>3</sup>	The Proposed Development area and within 5 km of it.
<b>Statutory sites designated under national legislation</b>	Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Local Nature Reserves (LNRs)	The Proposed Development area and within 5 km of it.
<b>Locally designated sites</b>	Often termed as Local Wildlife Sites (LWS)/Provisional Wildlife Sites (PWS) and Sites of Interest for Nature Conservation (SINC)	The Proposed Development area and within 2 km of it.
<b>Scottish Biodiversity List Red listed species<sup>4</sup> and Legally protected species.</b>	Flora, fauna and habitats of principal importance for the conservation of biodiversity in Scotland. Species recorded on The IUCN Red List of Threatened Species and/or local Red Lists for the UK or relevant sub-units (e.g. regions or counties) and legally protected habitats and species include those listed on Schedules 1, 5 and 8 of the <i>Wildlife and Countryside Act 1981</i> (as amended), those included on Schedules 2 and 5 of the Habitats Regulations. Badger and Hedgerows are provided protection under the	The Proposed Development area and within 1km of it.

<sup>1</sup> CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

<sup>2</sup> The Scottish Biodiversity List is a list of plants, animals and habitats that Scottish Ministers consider to be of principal importance to biological conservation. <https://www.gov.scot/Topics/Environment/Wildlife-Habitats/16118/Biodiversitylist/SBL>

<sup>3</sup> The designations considered in this assessment as European sites include SPAs, SACs and candidate SACs and Sites of Community Importance (SCI); these sites are collectively referred to Natura 2000 sites. Draft SPAs (dSPA), Potential SPAs (pSPA), possible SACs (pSACs), draft SACs (dSAC), Ramsar sites are also considered in line with planning policy.

<sup>4</sup> Red listed species for the purposes of this assessment refer to those noted using IUCN criteria as being "Near Threatened", "Vulnerable", "Endangered" and "Critically Endangered", and those on present on local Red Lists in the categories "Nationally Scarce" and "Nationally Rare".

Ecological feature	Example/description	Study Area
	Protection of Badgers Act 1992 and the Hedgerows Regulations 1997 respectively	
<b>Legally controlled species</b>	Legally controlled species include those listed on Schedule 9 of the <i>Wildlife and Countryside Act 1981</i> (as amended).	The Proposed Development area and within 1 km of it.

1.1.3 **Table 1.2** lists the sources and nature of that the desk study data.

Table 1.2 Sources of Desk Study Data

Source	Summary of information provided
<b>SNH's interactive map facility at</b> <a href="https://sitelink.nature.scot/home">https://sitelink.nature.scot/home</a>	Access to data and information on key protected areas across Scotland.
<b>National Biodiversity Network (NBN) gateway's information service</b> <a href="http://data.nbn.org.uk">http://data.nbn.org.uk</a>	Commercially-available records of protected and/or notable species from within the last ten years.
<b>Whitelee Windfarm Extension Environmental Statement 2010</b>	Contextual material regarding the previous consented wind farm.
<b>Whitelee Windfarm Extension Phase 3 ES 2012</b>	
<b>Whitelee Habitat Management Area annual bird monitoring</b>	Bird monitoring has been carried out on an annual basis since the windfarm was first commissioned. Monitoring data cover the following: moorland breeding birds, vantage point surveys of nesting Annex 1 raptors, black grouse lek surveys and red grouse counts.

## 1.2 Results

### Statutory and Non-statutory Designated Sites

1.2.1 **Table 1.2** provides details of Statutory and Non-Statutory sites identified within the Study Area defined in **Table 1.1**. A map detailing the location of each site presented in **Figure 3A6.2**.

Table 1.2 Statutory and Non-statutory Designated Sites within the Study Area

Site name	Designation	Central Grid Reference	Description	Distance and orientation from site
<b>Statutory Sites</b>				
Brother Loch and Little Loch	SSSI	NS 50585 52800	Notified for open water basin-fens with a high diversity of wetland communities and small populations of wintering bird species.	4.7km, N
<b>Non-Statutory Sites</b>				
Fenwick Moor (Greenfield Burn)	PWS	NS 51803 47580	The site is a wet peat bog with ponds containing uncommon invertebrates and characteristic moorland plants. Designated by East Ayrshire Council.	Within site boundary
Craigendunton Reservoir	PWS	NS 52512 45745	Open water	200m, S
Lochgoin Reservoir and Dunwan Dam	SINC	NS 53652 47755	Artificially created lochs are also within the wider Queenseat to Drumduff Hill SINC and are likely to be of higher ornithological than biological importance.	2km, E
Crins Hill	PWS	NS 54023 44185	Grassland	700m, NE

### Habitats and Vegetation

#### Phase 1 Habitat and National Vegetation Classification Survey 2012

1.2.2 An extended Phase 1 habitat survey and National Vegetation Classification survey (NVC) was carried out in 2012. Phase 1 habitat communities within the Solar Search Area comprised predominantly wet modified bog (through degradation resulting from agricultural improvement (e.g. drainage) and smaller areas of blanket bog which were variable in character, showing a wide variation in dwarf shrub, grass, rush (*Juncus spp.*) and cottongrass (*Eriophorum spp.*) content. Bare peat was evident in some areas whilst other areas showed evidence of drainage, which was not always clear on the ground. Throughout this habitat type, Sphagnum moss was a significant component. Marshy grassland was found to occur extensively along water courses where it forms dense almost monocultural stands of soft-rush (*J. effusus*) or sharp-flowered rush (*J. acutiflorus*),

with some areas more species rich and showing wet heath elements, developing from degradation of other communities.

- 1.2.3 The majority of the remaining habitat comprised improved and poor semi-improved grassland used for livestock grazing, with large areas invaded by soft-rush which were clearly mown by the tenant farmer. Grassland was found to be generally species poor.

**Ecology - Protected and Notable species**

- 1.2.4 **Table 1.3** presents historical baseline records from the Whitelee Windfarm Extension Phase 3 Environmental Statement for Protected and Notable species identified within the Study Area defined in **Table 1.1**. Records are also illustrated in **Figure 3A6.3a**.

Table 1.3 Protected and Notable species records (within Site and wider study area)

Site name	Year of survey data	Description
<b>Badger</b>	2008 - 2010	<p>No badger field signs were recorded anywhere within survey area for East Kingswell Wind Farm in 2009/2010 and surveys for the neighbouring Whitelee Extension did not record any field signs within the extended site boundary (Jacobs, 2008, 2009). The soils present within the extended study area were found to be poorly drained and inherently sub-optimal suitability for setting due to the likelihood of being waterlogged. The plantation woodland was not surveyed in detail but, given the nature of the terrain and the soils, were considered unlikely to support badger setts.</p> <p>Forested areas and in the main expanses of open ground were assessed as low-quality habitats in terms of badger foraging. The higher quality foraging habitat was considered to be restricted to semi-improved and improved grassland habitats.</p> <p>It was assessed that due to the reduced foraging opportunities any badgers using this environment would be likely to live in smaller social groups and forage over very extensive areas, and as a consequence have few field signs. Thus, areas within the survey area, where no field signs were recorded, may be part of such extensive territories used for low-level foraging.</p>
<b>Otter</b>	2009 - 2012	<p>Otter evidence recorded during surveys in 2009/10 and 2012 including a single holt, spraint and over-land runs; no other resting sites were recorded. The holt was recorded in a cavity under a wooden bridge on the Drumtree Water (NS 49633 46410). The density of otter signs was highest on Kingswell Burn although signs were also recorded on Collorybog Burn, Drumtee Water, Greenfield Burn. Areas of marshy grassland and dense conifer plantation woodland present within the survey area were also considered to provide opportunities for otter to lie up.</p>
<b>Water vole</b>	2012	<p>During surveys in 2012, no water vole field signs were found in any of the watercourses surveyed, despite the presence of suitable habitat. Sections of the following watercourses (upstream parts of Drumtee Water and Collorybog Burn, tributary of Drumtee Water and Soutors Burn) were found to contain suitable water vole habitat, with very low disturbance levels, abundant reed, sedge, herb and</p>



Site name	Year of survey data	Description
		<p>rush species, suitable bank substrates and shallow slow-flowing sections of water.</p> <p>Survey work undertaken as part of the Whitelee Extension EIAs identified one sighting of a water vole, to the north of Croilburn Farm on Gowkshaw Burn (Jacobs, 2008).</p> <p>Water voles are often restricted to headwaters and small tributaries in open moorland where American mink (<i>Neovison vison</i>) are less likely to occur. In upland habitats such as those found within the survey area water voles tend to exist in small colonies where there is a high risk of colonies being wiped out by chance events such as predation by mink (Raynor, Undated). Similarly there is a high probability that recolonisation may occur if conditions are favourable.</p> <p>Whilst no signs of water vole were recorded within the survey area, it was considered that the high habitat suitability coupled with the relative proximity of other water vole colonies increased the likelihood of voles being or becoming present on the site.</p>
Bats	2009	<p><u>2009 Roost inspections</u></p> <p>Four buildings / building complexes were identified within the survey area.</p> <ul style="list-style-type: none"> <li>• All accessible buildings were inspected in 2009 for their potential to shelter bats. Potential roosting habitat was recorded at Moor Farm (Roost category 2a - NS 50871 48028), and Kingswell Bridge (2b - NS 49742 47264). An old bridge across Kingswell Burn contained suitable crevices for bats (2a - NS 49609 47063).</li> <li>• There were no known underground sites present and no bat roosts were recorded within the survey area.</li> <li>• Only one suitable tree was found within the survey area but which was outwith the development area and application boundary: a mature ash tree near Moor Farm (2a - NS 50811 48051). The young age of the trees in Kingswell Wood was considered to preclude them from containing features which bats could use for roosting.</li> </ul>
	2012	<p><u>2009 Activity Surveys</u></p> <p>Activity surveys were undertaken on two occasions: 24-25 September and 01-02 October 2009, incorporating the evening and following dawn periods.</p> <ul style="list-style-type: none"> <li>• A single pipistrelle bat pass (species unknown) was recorded at NS 50888 48039 behind Moor Farm approximately 80 minutes after sunset on 24 September 2009.</li> <li>• No bat activity was recorded during the 01-02 October 2009 survey.</li> </ul> <p><u>2009 Static detector Surveys</u></p> <p>SD1 AnaBat detectors were deployed at six locations throughout the survey area over an 11 day period at the end of September 2009 and the beginning of October 2009.</p> <ul style="list-style-type: none"> <li>• Very low levels of bat activity were recorded with two of the six locations recording no bat activity at all (AnaBat positions 1 and 6). Three species of bat</li> </ul>



Site name	Year of survey data	Description
		<p>were recorded: soprano pipistrelle (<i>Pipistrellus pygmaeus</i>) was most frequently recorded; while common pipistrelle (<i>P. pipistrellus</i>) and an unknown <i>Myotis</i> species, most likely to be Daubenton's bat (<i>M. daubentonii</i>) or Natterer's bat <i>M. nattereri</i>, were also recorded.</p> <p><u>2012 Activity Surveys</u></p> <p>In 2012 further surveys were undertaken to update the baseline information previously collected for East Kingswell Windfarm. Surveys were conducted from the 30 April until 10 May and consisted of a dusk emergence and dawn re-entry surveys at; Moor Farm, Cauldstanes and Kingwell Burn Bridge. Walked and driven transects at dusk and dawns were also conducted in the local landscape around the proposed Development.</p> <ul style="list-style-type: none"> <li>No bats were observed during the activity surveys in 2012.</li> </ul> <p><u>2012 Static Detector Surveys</u></p> <p>SD1 AnaBat detectors were deployed at five locations within the Site over an eight day period at the beginning of May 2012.</p> <ul style="list-style-type: none"> <li>No bat activity was recorded at the five locations.</li> </ul>
Reptiles	2010 -2012	<p>Two species, common lizard (<i>Zootoca vivipara</i>) and adder (<i>Vipera berus</i>), were recorded within the Whitelee Extension survey area in 2010. An adder skin was recorded in the survey area 2012. Suitable areas of reptile habitat including woodland edges and a mosaic of rides, clearings and open habitats were found to be present in pockets across the study area. These areas were found to offer suitable foraging and potential basking areas for reptiles.</p> <p>Given the findings of reptile signs within the survey area, the proximity of known reptile habitats and the suitability of existing habitats for reptiles, it was considered likely that populations of adder, lizard and slow worm (<i>Anguis fragilis</i>) could occur.</p>
Red squirrel	2006 - 2009	<p>Only grey squirrel were recorded in hair tubes during surveys for Whitelee Extension (Jacobs, 2008 and 2009) and pre-construction surveys conducted at Whitelee Wind Farm (RPS, 2006) also concluded that it was unlikely that red squirrels were present within Whitelee Forest due to the presence of grey squirrels and the results of hair tube surveys.</p> <p>The conifer woodland present within the survey area was found to typical of commercial forestry plantations with immature single species stands of trees considered sub-optimal for red squirrel. In addition, the forest productivity of the plantation woodland within the survey area was found to be low (a reflection of the depth of peat and poor ground conditions that exists at the site, meaning that most of the trees were not sufficiently mature to produce cones, which squirrels would feed on).</p>



Site name	Year of survey data	Description
Freshwater fish	2009	<p>A freshwater fish habitat survey was undertaken in February 2010. The field survey focussed on two watercourses considered to have the potential to offer suitable fish habitat including Drumtree Water and Collorybog Burn (a tributary of Drumtree Water).</p> <p>A dense commercial conifer plantation was situated near to Collorybog Burn. Dense conifer plantations generally have a deleterious effect on watercourses, particularly small burns. It was considered that the intensive nature of this form of land use is likely to be the most important factor affecting the ability of the watercourses to support fish populations.</p> <p>None of the watercourses within the Site were considered likely to support salmon or migratory sea trout, due to the known presence of an obstruction downstream. All are likely to support populations of resident brown trout in their lower reaches (Jacobs, 2009). No evidence of European eel was found within the survey area; however, it was considered that this species could be present in both watercourses.</p> <p>Drumtree Water flows into Fenwick Water, a major tributary of the River Irvine, and was found to provide good quality fish habitat. This was due to the mixture of flow and substrate type, and good fish cover. Small areas of suitable spawning substrates were present and the burn was considered likely to support juvenile brown trout. Habitat suitable for lamprey was not recorded.</p>

### Ornithology - Protected and Notable species

- 1.2.5 **Table 1.4** presents historical baseline records from the Whitelee Windfarm Extension Phase 3 Environmental Statement; and contemporary baseline records from ongoing ornithological monitoring at Whitelee Habitat Management Area (HMA).
- 1.2.6 A plan illustrating Whitelee Extension Phase 3 bird data is presented in **Figure 3A6.3b** (Breeding bird survey records); and **Figure 3A6.3b** (Black grouse and nesting/roosting owls - **Confidential**)
- 1.2.7 Plans illustrating Whitelee HMA annual monitoring species records (from the most recent three years) is presented in **Figure 3A6.4a,b** (Raptor records<sup>5</sup>), **Figure 3A6.4c,d,e** (Breeding wader and red grouse records), **Figure 3A6.4f,g,h** (Red-listed passerines); and **Figure 3A6.4i** (Black grouse records).

<sup>5</sup> No records were available for 2019 and no records were made during 2018.





Table 1.4 Protected and Notable birds species records within Site or wider study area

Species	Year of survey data <sup>6</sup>	Description
Hen harrier	2006 – 2012	Baseline surveys recorded hen harrier activity within the proposed Development as extremely low. Dedicated searches for nesting birds within 2 km of the proposed Development found no breeding attempts by hen harrier in 2009. During the searches of Whitelee Windfarm site during 2006 to 2011 no breeding attempts were located in the vicinity of the proposed Development, although a pair did nest over 7 km away in 2006. No flights were recorded in 143 hours of observation from Generic Vantage Points (GVPs) and only two flights in 69 hours of observation from Migration Watch Points (MWP) during 2008/2009.
	2017	A male hen harrier was recorded once within the HMA; recorded flying through the central part of the HMA on 12 June (approximately 750m from the SE of the Site boundary). No evidence to indicate breeding attempts by hen harrier within the HMA.
	2018	No evidence to indicate breeding attempts by hen harrier within the HMA, and no observations of this species. One incidental record was made of a single bird (sex not known) to the west of Lochgoin Reservoir approximately 1km to the east of the Site boundary.
	2020	No evidence to indicate breeding attempts by hen harrier within the HMA, and no observations of this species.
Merlin	2006 - 2011	Baseline surveys also recorded extremely low activity for merlin within the Study Area of the Whitelee 3 Extension. During 2008/2009 only two flights by merlin were recorded within the 500 m buffer of the proposed Development. These were all during the non-breeding season. No flights by merlins within the development area were recorded during the wider Whitelee Windfarm surveys of 2006 to 2011.  During Whitelee wind farm monitoring surveys, merlin were recorded nesting in the Whitelee Windfarm site each year from 2006 to 2009, the closest nest recorded during monitoring searches was the 2009 nest, which was approximately 4.4km from the Site boundary.
	2017	No evidence to indicate breeding attempts by merlin within the HMA, and no observations of this species during monitoring surveys, although six incidental sightings were made within Whitelee Forest to the South or South East of the Site boundary.

<sup>6</sup> Years 2006 – 2012 comprise breeding and non-breeding baseline surveys to support wind farm applications at Whitelee; and 2017 – 2020 comprise an ongoing programme of breeding baseline monitoring surveys to support the Whitelee HMP.



Species	Year of survey data <sup>6</sup>	Description
	2018	No evidence to indicate breeding attempts by merlin within the HMA, and no observations of this species during monitoring surveys. One incidental record was made of a bird to the SW of the HMA and approximately 1km to the south of the site boundary.
	2020	No evidence to indicate breeding attempts by merlin within the HMA, and no observations of this species during monitoring surveys.
<b>Peregrine</b>	2006 - 2011	Recorded peregrine activity was extremely low. No breeding attempts by peregrines were made in the Study Area of the Whitelee 3 Extension (including the 2 km buffer of the proposed Development; and the Whitelee Windfarm) in any year. Three flights were recorded (two during GVP watches) in 2008/2009. Of these only one was within the 500 m buffer of the proposed Development. No flights by peregrines were observed within the development area during the wider Whitelee Windfarm surveys of 2006 to 2011.
	2017	Peregrines were recorded twice, once on 2 May when a hunting bird was seen in the east of the HMA, and once on 26 June when a bird flew to perch on the met mast near to turbine number one. No evidence to indicate breeding attempts by peregrine within the HMA. Three further incidental records were made within the HMA outside the site boundary.
	2018	There were no observations of this species in 2018 or 2020.
	2020	
<b>Goshawk</b>	2006 - 2011	There were no observations of this species during the survey programme for the Whitelee 3 Extension.
	2017	An adult female goshawk was recorded on two occasions: on 18 May, a female was soaring over forestry with some display activity to the east of the HMA, approximately 4.7km to the east of the Site boundary; on 22 June a female was recorded flying at the edge of the HMA, within the Site boundary. An incidental sighting was also made of a single bird (sex not known) to the south east of the site boundary.
	2018	There were no observations of this species in 2018 or 2020.
	2020	

Species	Year of survey data <sup>6</sup>	Description
<b>Short eared owl</b>	2006 - 2011	<p>One short-eared owl nest was located approximately 1.8 km from the Site boundary during 2007 and the pair successfully raised at least two young . Although no breeding short-eared owls were located during 2009, seventeen flights by short-eared owls were recorded during GVP watches in 2009, plus a few sightings made during the surveys of winter 2008/2009. Of these sightings only seven flights were within 500 m of the Site boundary.</p> <p>During the wider Whitelee Windfarm surveys a nest was located in 2006 over 5 km from the Site boundary, but no nests were located between 2008 and 2011, and although a bird was sighted once in 2010 no other flights were observed within the Site boundary. In 2010 a long-dead short-eared owl was located under turbine 40 of the Whitelee Windfarm, and was considered to have been a victim of turbine strike.</p> <p>A pair of short-eared owls were observed once in May 2012 over 1.5 km from the Site boundary during the Whitelee monitoring surveys (MacArthur Green pers comm.). A single individual was observed on two other occasions in this vicinity therefore it is possible that they nested in this area.</p>
	2017	<p>There was no evidence to indicate breeding attempts by short-eared owl within the HMA in 2017, 2018 Or 2020 and there were no observations of these species.</p>
	2018	
	2020	
<b>Barn owl</b>	2006 - 2011	<p>No potentially suitable breeding sites for barn owls were found within the Site boundary. Although two roost sites occupied by barn owls were located within 2 km both of which were outside the 1 km buffer of the proposed Development, no breeding was confirmed and no flights by barn owls were recorded from GVPs during 2008/2009. A barn owl was incidentally observed within the Site boundary on 15 January 2009.</p>
	2017	<p>There were no observations of barn owl in 2017 and 2018 and no evidence to indicate breeding attempts by this species within the HMA.</p>
	2018	
	2020	<p>A single owl pellet (indicative of barn owl) was located on Queenseat Hill (NS 52839 48987), approximately 1.3km to the east of the Site boundary.</p>



Species	Year of survey data <sup>6</sup>	Description
<b>Black grouse</b>	2006 - 2011	<p>The area surrounding the site boundary was found to support a small number of black grouse. Two leks each of one male were located during surveys in 2007: both recorded to the east of the Site, each approximately 700m and 400m from the Site boundary. A female was present at one, indicating the likelihood of breeding occurring nearby. The eastern lek was also occupied by one male during 2009, 2010 and 2011 and droppings were located within the Site boundary in 2009.</p> <p>No displaying males were located within the Whitelee Windfarm Extension Phase 3 survey boundary during surveys in spring 2012, a single male was seen within this boundary (approximately 750m from the Site boundary) during Whitelee Windfarm monitoring surveys in 2012 (MacArthur Green, pers comm).</p>
	2016	<p>A single black grouse was recorded during dedicated searches. This was a displaying male recorded during on 28th April, approximately 400m to the east of the Site boundary. A male black grouse was recorded on several occasions during a moorland bird survey visit on 30th May. All records were from within the tree clearance area on Howeburn Bog (within the Site boundary) and were probably of the same bird.</p>
	2017	<p>A single black grouse was recorded during dedicated searches. This was a displaying male recorded during on 25 April at NS 5169 4665, approximately 575m from the Development footprint.</p>
	2018	<p>No black grouse were recorded within the HMA.</p>
	2020	<p>No black grouse were recorded during any site visits within the HMA immediately adjacent to the Proposed Development. Hand searching of previously identified lekking sites uncovered no black grouse droppings or feathers.</p>
<b>Golden plover</b>	2006 - 2011	<p>One flock of five golden plover were recorded only once within the 500 m buffer of the proposed Whitelee Windfarm Extension Phase 3 during the winter of 2008/2009. This species did not breed or winter in the vicinity of the Site boundary.</p>
	2017	<p>There were no observations of golden plover in 2017, 2018 and 2020 and no evidence to indicate breeding attempts by this species within the Whitelee Wind Farm HMA.</p>
	2018	
	2020	



Species	Year of survey data <sup>6</sup>	Description
<b>Curlew</b>	2006 - 2011	In 2009 two pairs of curlews were noted around the periphery of the Whitelee Windfarm Extension Phase 3 site; both territory centre points were within the Site boundary and within 200m of the proposed working areas.
	2017	Six confirmed territories were recorded within the Whitelee Wind Farm HMA, the nearest was recorded approximately 560m to the east of the Site boundary.
	2018	Ten confirmed territories were recorded within the Whitelee Wind Farm HMA, the nearest was recorded approximately 150m to the east of the Site boundary.
	2020	Two probable breeding territories were recorded within the Whitelee Wind Farm HMA, the nearest was recorded approximately 900m to the east of the Site boundary.
<b>Snipe</b>	2006 - 2011	There were no observations of snipe and no evidence to indicate breeding attempts by this species within the Whitelee Windfarm Extension Phase 3 site.
	2017	Five confirmed territories were recorded within the Whitelee Wind Farm HMA, the nearest was recorded approximately 570m from the Site boundary.
	2018	Eleven confirmed territories were recorded within the Whitelee Wind Farm HMA, the nearest was recorded approximately 500m to the east of the Site boundary.
	2020	A single probable breeding territory was recorded within the Whitelee Wind Farm HMA, the nearest was recorded within the Site boundary south of Flow Moss.
<b>Lapwing</b>	2006 - 2011	There were no observations of lapwing and no evidence to indicate breeding attempts by this species within the Whitelee Windfarm Extension Phase 3 site.
	2017	Six confirmed territories were recorded within the Whitelee Wind Farm HMA, four of which were recorded within the Site boundary.
	2018	No breeding territories were recorded within the Whitelee Wind Farm HMA.
	2020	No breeding territories were recorded within the Whitelee Wind Farm HMA.



Species	Year of survey data <sup>6</sup>	Description
<b>Red grouse</b>	2008-2009	One confirmed pair of red grouse and one probable pair were located during the Moorland Bird Surveys in 2009 (within the 500 m buffer of the Site boundary). During the winter transects there were 22 red grouse sightings involving 29 individuals. All sightings were made between Craigenfaulds Moss and the Eaglesham Moor road (to the east of the Site boundary). A group of six were seen on 2 September 2008.
	2017	Eighteen red grouse territories were estimated within the Whitelee Wind Farm HMA, the nearest was recorded approximately 300m to the east of the Site boundary.
	2018	Twenty-two red grouse territories were estimated, records were widespread in open areas of the site with a particular concentration in the north-west, the nearest was recorded approximately 300m to the east of the Site boundary.
	2020	Seven probable breeding territories were recorded within the Whitelee Wind Farm HMA, the nearest was recorded approximately 200m to the east of the Site boundary.
<b>Pink footed goose</b>	2006 - 2011	<p>Three flights of pink-footed geese were observed during 2008/2009 passed within the 500 m buffer of the proposed Whitelee Windfarm Extension Phase 3 site. Two of the flocks (65 and 90 birds) and the third flock (of 38).</p> <p>The flight directions suggest the presence of a small local wintering population possibly visiting the waterbodies in the wider area. The proposed Development is not suitable for any species of wildfowl and does not appear to be located on a regularly used migration route or corridor used for large or regular local movements by wildfowl.</p>
	2017	There were no observations of pink-footed goose in 2017, 2018 and 2020.
	2018	
	2020	



Species	Year of survey data <sup>6</sup>	Description
<b>Herring gull</b>	2006 - 2011	Herring gull, a species of moderate conservation importance was recorded year-round in small numbers, often flying over the Whitelee Windfarm Extension Phase 3 site en route to one of the several waterbodies in the area. The proposed Development is clearly only an occasional and incidental part of wider flight paths for this widespread and abundant species.
	2017	There were no observations of herring gull in 2017, 2018 and 2020 and no evidence to indicate breeding attempts by this species within the Whitelee HMA.
	2018	
	2020	
<b>Red-listed passerines</b>	2007 - 2009	During 2007 woodland habitats within the proposed Development area were recorded to support very low numbers of breeding lesser redpoll, song thrush, cuckoo and linnet. Song thrushes were also recorded in 2009. The open ground and woodland edge within the Site boundary was found to supports a modest population of breeding skylark, together with low numbers of grasshopper warbler (a single territory was confirmed within the Site boundary).
	2017	Probable or confirmed breeding territories within the Whitelee Wind Farm HMA: Cuckoo (6), skylark (between 8-10 birds/km <sup>2</sup> ), song thrush (4), mistle thrush (1), grasshopper warbler (3), linnet (9), lesser redpoll (94), starling (1+).
	2018	Probable or confirmed breeding territories within the Whitelee Wind Farm HMA: Cuckoo (3), skylark (between 3-9 birds/km <sup>2</sup> ), grasshopper warbler (1), linnet (2), lesser redpoll (4).
	2020	Probable breeding territories within the Whitelee Wind Farm HMA: Lesser redpoll (8), song thrush (2), skylark (up to 2 birds/km <sup>2</sup> ), mistle thrush (1), pied flycatcher (1).

