Kirkan Wind Farm

Environmental Impact Assessment Report

Appendix 6.5: Deer Assessment

avianecology

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1 INTRODUCTION

1.1 Background

1.1.1 This Appendix has been prepared by Avian Ecology Ltd. in conjunction with the Strathvaich Estate to accompany the proposed Kirkan Wind Farm (hereafter the proposed development) Environmental Impact Assessment (EIA) Report (EIA-R).

1.1.2 It presents an assessment of the potential implications of the proposed development on deer welfare and the indirect impacts on other interests including habitat reinstatement and the impacts on neighbouring land and interests (including public roads).

1.2 Objectives

1.2.1 The objectives of the assessment are to:

- outline baseline information pertaining to deer and deer management within the project area;
- identify potential issues and impacts on deer arising from the proposed development; and,
- identify the requirement or otherwise for a Deer Management Strategy (DMS) to be implemented as part of the proposed development.

2 BASELINE

2.1 Project Area Overview

2.1.1 The proposed development is located within the southern extent of the Strathvaich Estate, approximately 5.5 km to the north-west of Garve, Ross-shire, on the southern side of the A835 trunk toad, south-east of Loch Glascarnoch.

2.1.2 The project area predominantly comprises expanses of blanket bog and wet dwarf shrub heath, with small pockets of stunted plantation woodland. The project area itself does not provide shelter for deer, but provides open moorland grazing opportunities. Shelter is provided by mature forestry cover to the east and south-west of the project area, with immature plantation woodland within the project area currently providing poor sheltering opportunities for deer.

2.1.3 Deer fencing recently erected by neighbouring Corriemoillie Estate approximately delineates the southern estate boundary. Deer fencing also currently surrounds plantation woodland pockets within the project area and surrounding southern extent of the Estate. Stock-proof fencing is present bordering the southern length of the A835 between Lubfearn and the Glascarnoch Dam.

2.1.4 Fencing does not currently prevent deer entry to and from project area or the surrounding southern extent of the Estate.

2.2 Local Deer Management Group and Management Plan

2.2.1 The Strathvaich Estate is covered by the West Ross Deer Management Group (WRDMG) Deer Management Plan (DMP) 2016-2021 (BOWLTs, 2018[1]), with the principal deer species in the area comprising red deer.

2.2.2 Roe deer also occupy woodland margins, but are mainly confined to lower elevations. Sika deer are also known to be present between Lochluichart and Achnasheen to the south and south west of the project area.

2.3 Local Deer Populations

2.3.1 The camera trapping surveys carried out within the search area (detailed in **Appendix 6.2**) confirmed the evidence of red deer and roe deer, with red deer recorded at all camera trap locations, and roe deer recorded at two out of three locations.

2.3.2 The DMP provides an approximation of the red deer present within the Strathvaich and Strathrannoch Estate, with a total of 164 red deer (consisting of 129 stags, 24 hinds and 11 calves), based on the 2009 SNH Deer census undertaken by the Deer Commission. The approximate deer density for the southern extent of the Estate which supports the project area, is shown within the DMP as 4-14 red deer/km^2.

2.3.3 In consultation with the Strathvaich Estate as of 2019, three separate deer populations use the estate. These consist of:

- A permanent red deer population principally associated with Kirkan Wood (but will range across the estate), consisting of 20 hinds and calves and 12 stags, which give an approximate 3 deer km^2 in the summer/early autumn[2];
- A red deer population from the open range who use the estate for shelter in the winter. Two counts have been done from a helicopter and deer numbers were 95 in year 1 and 132 in year 2 (thus 63 “migrants” in year 1 and 100 migrants in year 2, over and above the 32 permanent population); and,
- A small roe deer population within Kirkan Wood (number unknown, but kept at a level to minimise tree damage).

2.3.4 It should be noted that population figures above are “snapshots” of deer numbers, with potential significant movements of animals occurring between the wider estate and neighbouring estates on a regular basis.

2.3.5 The permanent red deer population can support a cull of 1-3 stags per year. However, no deer have been taken from the estate in either 2017/18 or 2018/19. The migrant red deer typically use the estate outside the stalking season so are not included in the culling effort.

2.3.6 The schedule of red deer culls for Stathvaich between 2006/07 and 2015/16 as presented within the DMP are summarised in **Table 2.1**. Culls for 2017/18 to 2018/19 as provided by the Estate are presented in **Table 2.2**.

[1] BOWLTS (2018) Deer Management Plan – 2016 to 2021. West Ross Deer Management Group. Scotland. Available online: http://wrossdmg.deer-management.co.uk/deer-management-plan/. Accessed 30/11/2018.

[2] ‘Steady population’ of 32 adults.

2.3.7 In the absence of the proposed development, deer control within the project area and wider estate would continue on its current basis. The Strathvaich Estate is part of a DMP with neighbouring estates (seven in total) which have a voluntary deer management agreement with SNH which aims to maintain, or for some estates, attempt to return the habitats back to favourable ecological condition. No details about how many stalkers are used, or their qualifications, but it is assumed that as the Estate is in an agreement with SNH, stalkers have the appropriate qualifications and experience.

Table 2.1: Schedule of red deer culls (in Season[3]) – 2006/07-2015/16.

2006/07			2007/08			2008/09			2009/10			2010/11			2011/12			2012/12			2013/14			2014/15			2015/16		
Stags	Hinds	Calves	Stags	Hinds	Calves	Stags	Hinds	Calves	Stags	Hinds	Calves	Stags	Hinds	Calves	Stags	Hinds	Calves	Stags	Hinds	Calves	Stags	Hinds	Calves	Stags	Hinds	Calves	Stags	Hinds	Calves
0	2	0	1	5	1	5	4	1	1	6	0	0	3	1	3	1	0	0	6	1	3	3	1	2	0	0	3	3	1

Table 2.2: Schedule of red deer culls (in Season[4]) – 20117-2018/19.

2017/18			2018/19		
Stags	Hinds	Calves	Stags	Hinds	Calves
0	0	0	0	0	0

[3] No out of season culls carried out.

[4] No out of season culls carried out.

3 POTENTIAL IMPACTS UPON DEER

3.1.1 Potential impacts upon deer resulting from the proposed development comprise the following:

- Direct loss of foraging habitat for deer;
- Displacement of deer onto adjacent land; and,
- Impacts upon habitat restoration following the construction phase of the scheme.

3.1.2 The potential implications for the increased risk of Deer Vehicle Collisions (DVCs) is also considered.

3.2 Loss of Foraging Habitat

3.2.1 The proposed development will result in the direct and permanent loss of approximately 9.2 ha of open moorland grazing resources for deer from within the project area. Such losses are considered to be very small with overall permanent habitat losses as a result of the proposed development representing approximately 2.8% of the project area. The availability of similar habitats within the project area and remaining southern extent of the Estate will remain extensive for local deer populations.

3.2.2 Additional habitat losses will also occur as a result of habitat disturbance within construction working areas. Such losses would however be reinstated following the cessation of construction works and as such are considered temporary.

3.2.3 The proposed development will not include the erection of additional deer fencing, with fencing around pockets of plantation woodland re-located to facilitate the construction of development infrastructure. This will not result in the prevention of movement of animals within the project area or surrounding area, or introduce any further areas of habitat exclusion.

3.2.4 Some temporary, open excavations may be created as part of the proposed development. These excavations should be covered outside work hours to ensure that no animal, including deer fall into it. If excavations are left open, boards should be positioned so that any animal can escape.

3.2.5 Habitat losses (both temporary and permanent) and as such grazing resources for deer populations within the project area are therefore considered to be very small and will not result in adverse impacts upon local deer populations.

3.3 Displacement

3.3.1 Deer have the potential to be displaced from the project area onto adjacent lands as a result of disturbance during construction and decommissioning activities associated with the proposed development.

3.3.2 Research does not suggest that deer are particularly disturbed by the presence of operational wind turbine scheme (Helldin *et al*., 2012[5]), but do have the potential to be temporarily displaced during the operational maintenance works. Such events are however unlikely to be frequent or prolonged and as such would not result in any permanent displacement pressures on adjacent land.

[5] Helldin, J.O., Jung, J., Neumann, W., Olsson, M., Skarin, A., Widemo, F. (2012) The impacts of wind power on terrestrial mammals. The Swedish Environmental Protection Agency, Sweden.

3.3.3 Construction activities are expected to last approximately 18 months and would be phased across the project area. Decommissioning works would be expected to occur over a similar timeframe, if not shorter. During which time, deer have the potential to be displaced from the project area in part or in whole depending upon the location of works. This may reasonably result in the relocation of some grazing activities onto moorland habitats within the surrounding area.

3.3.4 No impacts upon sheltering opportunities provided by the forestry cover surrounding the project area would be anticipated.

3.3.5 Due to the relatively low numbers of deer to be affected, the localised nature of construction works and the extent of available habitats available within the wider area which have the capacity to accommodate local deer populations, the displacement of deer from the project area is unlikely to exert any substantial additional grazing pressures onto adjacent moorland habitats.

3.4 Habitat Restoration

3.4.1 The construction and decommissioning phase of the proposed development will result in the additional temporary loss of moorland habitats due to disturbance within working areas around the permanent footprint of the wind farm scheme footprint. These habitats will be reinstated following the cessation of construction works.

3.4.2 A Construction Environmental Management Plan (CEMP) for the proposed development will be finalised in consultation with SNH and additional stakeholders. This will include Habitat Specific Protection Plans (HSPPs) for dwarf shrub heath and blanket bog, detailing restorative measures following the cessation of construction and decommissioning works. Monitoring would also be outlined to measure the effectiveness of restoration works.

3.4.3 Following the cessation of construction works, access for deer to the project area will be retained, with only the possible exception of parts of the substation compound containing above-ground electrical components which would likely have some fencing. Grazing pressures may therefore inhibit effective restoration of disturbed habitats within temporary working areas.

3.4.4 Deer control within the project area is currently “ad-hoc” and such control would be continued in the absence of the proposed development. The Estate regards that the red deer population present can sustain 1-3 stags being taken. However, no deer have been taken in at least the last two years. The establishment of access tracks for the proposed development will be able to increase the efficiency of deer culling if further, more structured deer control is sought by the Estate. At this stage, consultation with the Estate suggests that the current level of deer control is appropriate and is maintaining the deer population at a level where overall herbivore impacts are the lowest of the seven estates which form the Deer Management Group, and that favourable ecological conditions are typically being met within the estate.

3.4.5 Based on these reported low herbivore impacts within the estate, it is suggested by the Estate that the current level of deer culling maintains the permanent red deer population to approximately 3 deer km^2 , which is below that generally considered to be a sustainable deer density for blanket bog and heathland habitats (Putman *et al*., 2011[6]; SNH, 2014[7]). A targeted Deer Management Strategy

[6] Putman, R., Landbein, J., Green, P. & Watson, P. (2011) Identifying threshold densities for wild deer in the UK above which negative impacts may occur. Mammal Review, 41 (3), pp 175-196.

[7] SNH (2014) Planning for development: What to consider and include in a deer assessments and management at development sites. Scottish Natural Heritage, Inverness.

(DMS) for the project area as part of the proposed development is therefore not considered necessary, given that the Estate is already part of a DMP along with other neighbouring estates

3.4.6 Monitoring as part of the HSPPs prescribed within the CEMP, would seek to identify and establish the cause of failure of habitat restoration efforts, including any evidence of grazing pressures from deer. In the event this is confirmed to be the case, the HSPPs would remain adaptable to include the production of a DMS for the project area if required. The DMS would be agreed in consultation with SNH, the Estate and the WRDMG.

3.5 DVC Risk

3.5.1 The reported incidence of Deer Vehicle Collisions (DVCs) on the A835 to the north of the project area, as reported within the DMP, has decreased notably since 2005, from 64 deer in 2005 to 2 deer in 2014. No recent data is available.

3.5.2 This together with the potential for increased efficiency of culling within the southern extent of the Estate, if deemed necessary by the Estate, facilitated by the construction of access tracks for the proposed development may further assist in the prevention of DVCs.