

**Kilcash Wind Turbine
Kilcash, Co. Roscommon**



Revised - Natura Impact Statement (NIS)

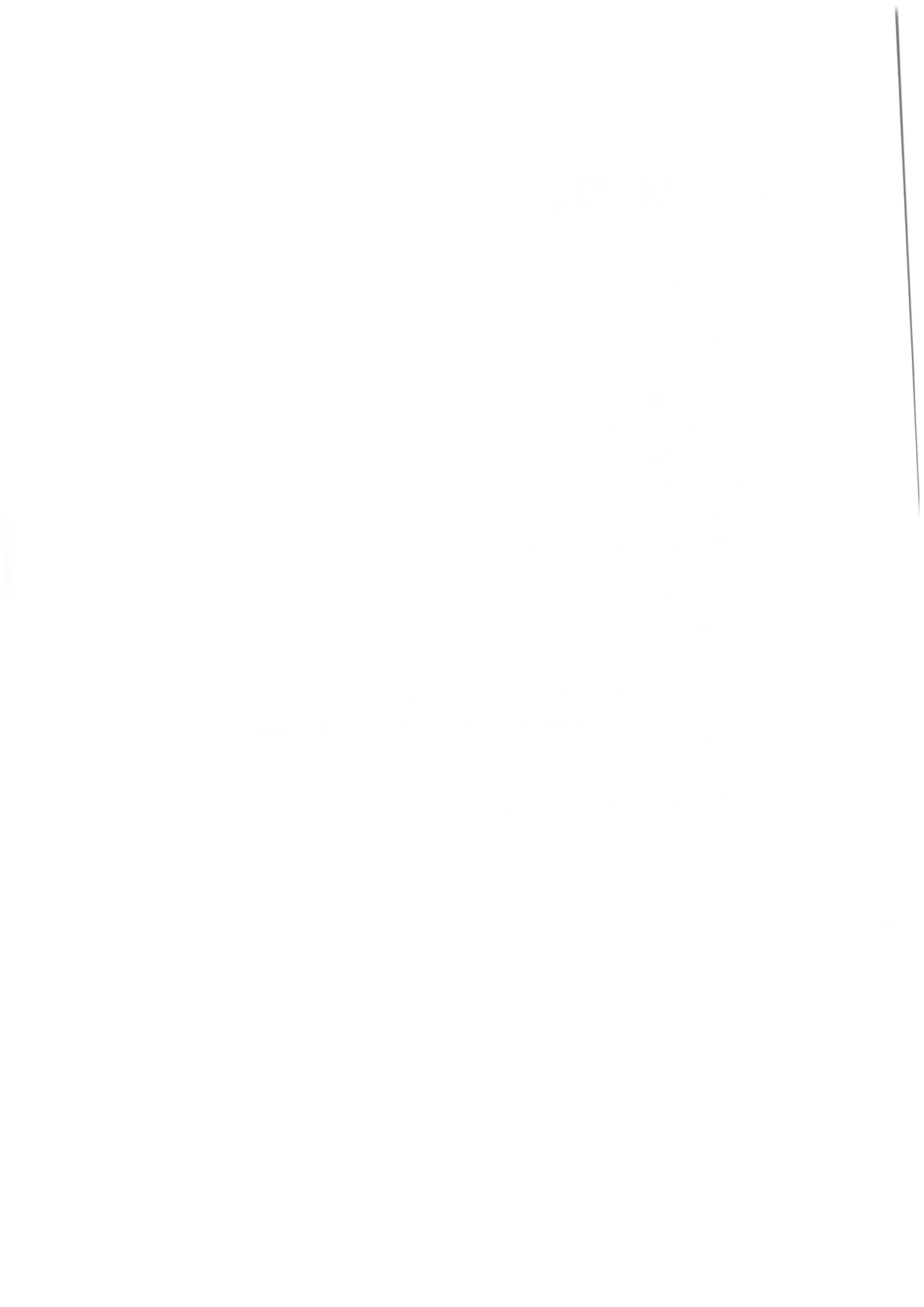


March 2026



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1 Natura Impact Statement

1.1 Introduction

This Natura Impact Statement (NIS) has been prepared by Natural Forces Renewables Ireland Ltd on behalf of Natural Forces Renewable Energy Ltd (The Applicant) with regards to the Granted Development in Kilcash, Co. Roscommon (ACP ref: 319800, CC ref: 2360142) and the proposed grid 'Works' detailed in Section 1.6. The overall objective of this NIS is to identify the potential effects the Works could have on the existing Natura 2000 sites individually and in combination with other plans or projects.

This Natura Impact Statement has been prepared in line with Roscommon County Council's previous declaration (Ref: **DED 981**) that the proposed 20kV grid connection is development and is not exempted development, with the potential for likely significant effects on European sites, either alone or in combination with other plans or projects.

This assessment is informed by the suite of surveys completed over the duration of October 2020 - March 2023 and which have been validated by this report.

1.2 Statement of Authority

This report has been prepared by:

Emma Harris

Emma Harris (Project Ecologist) who graduated with a MSc in Environmental Sciences from Trinity College Dublin in 2023. Since joining Natural Forces in 2023, she has completed numerous environmental and planning reports. With 2 years industry experience on top of educational experience, she has extensive knowledge in the field of environmental impact assessments including Screening Reports and Natura Impact Statements for Appropriate Assessment for a variety of renewable energy developments

Jenny Crowe

Jenny Crowe (Graduate Ecologist) who graduated with a BSc in Environmental Management from Technological University of Dublin in 2024. Through this degree, Jenny has developed practical field and lab-based skills that are necessary for field/habitat surveying and soil sampling and has also gained knowledge of GIS software and has contributed to reports, including Appropriate Assessments and Ecological Impact Assessments.

1.3 Guidance

With regards to Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive), Article 6(3) the determination for carrying out a Natura Impact Statement depends on:

"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."

This report has therefore been prepared using the following guidance documents:

- European Commission (2018) Managing Natura 2000 Sites. The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. Which is the updated version of the previous 2000 version.
- European Commission (2001) Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provision of Article 6 (3) and (4) of the



'Habitats' Directive 92/43/EEC. Office for Official Publications of the European Communities, Luxembourg.

- Department of Environment Heritage and Local Government (DoEHLG) (2008) Circular Letter SEA 1/08 & NPWS 1/08 Appropriate Assessment of Land Use Plans.
- Department of Environment, Heritage and Local Government (DoEHLG) (2010) Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities.
- Scottish Natural Heritage (2023) Habitats Regulations Appraisal of Plans: Guidance for Plan-Making Bodies in Scotland. Version 4.0. November 2023.

Scottish Natural Heritage (2012) Habitats Regulations Appraisal (HRA) Advice Sheet: Screening general policies and applying simple mitigation measures.

1.4 Approach

With these guidance documents in mind, a thorough approach was taken for this assessment. The Works are being assessed in order to determine:

- Whether The Works will impact any Natura 2000 sites
- Whether the impacts exhibit both spatial and temporal dimensions and can be characterised as changes in environmental conditions occurring over a defined period and within a specific geographic area.
- Whether the impacts are direct (primary) or indirect (secondary) in nature, and whether they have the potential to result in significant effects on the integrity of the Natura 2000 network.

In order to determine the potential of a significant impact, a Source-Pathway-Receptor (SPR) model has been adopted. The potential for a significant impact is dependent on:

- The 'Source' of the potential impact (e.g. removal of habitats, sediment run-off, etc.)
- The 'Pathway' of the potential impact (i.e. air, water, etc.)
- The 'Receptor' presence (i.e. whether or not there are any 'Qualifying Interests' or habitats associated with Natura 2000 sites at risk)
- The overall nature of the impact taking mitigation measures into account.
- The zone of impact based on the NPWS guidance (Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities, 2010) where the zone of impact is dependent upon variables such as: the nature and size of the project, the sensitivity of potential ecological receptors, and the potential for cumulative effects.

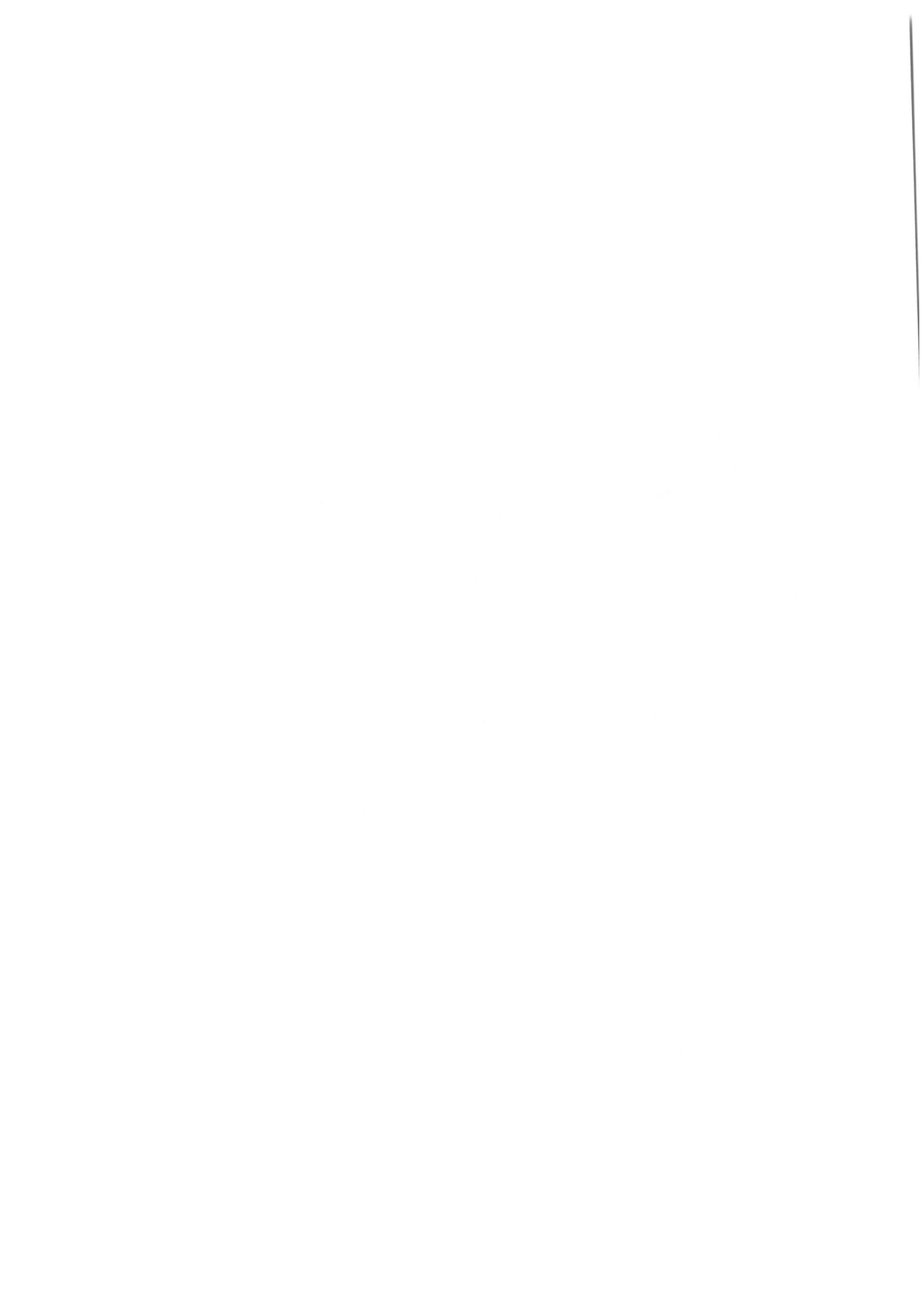
1.5 Methodology

1.5.1 Habitat, Flora, and Faunal Surveys

The Works site ('the site') was surveyed by Paul Murphy on the 4th of February 2021 and validated on 10th July 2025 and on the 27th of February by members of the team.

The survey involved verifying all the habitats in and around the site. The validation survey was then conducted during growing season in order to accurately classify habitats which are presented in this report according to the guidelines from the Heritage Council Classification system (Fossitt, 2000). Protected or rare species of flora were determined using the existing database from the National Biodiversity Data Centre (NBDC), the National Parks and Wildlife Service (NPWS) and the Botanical Society of Britain and Ireland (BSBI).

The suitability of this site with regards to protected species of fauna was assessed based on a combination of the results seen on the field visit as well as a study of the relevant databases such as: NBC, NPWS, BirdWatch Ireland (BWI), and Bat Conservation Ireland (BCI). The surveys aimed at identifying the occurrence and distribution of habitats, with special attention given to any that would fall under Annex I and Annex II of the Habitats Directive.



It also addressed various species of fauna protected under the Wildlife (Amendment) Act (2023), plants protected under the Flora (Protection) Order (2022), and invasive species of plant and animal listed under the European Communities Birds and Natural Habitats Regulations (2011), as amended.

1.5.2 Bird Surveys

A series of bird surveys were conducted by ornithologists Paul Whitelaw, Daniel Moloney and Mark Davenport between October 2020 to March 2023. A main aim of the survey period from October 2020 to September 2021 was to determine the occurrence of wintering waterfowl, raptors, or any other species of conservation concern. Bird survey methodologies followed Scottish Natural Heritage guidance in the absence of specific Irish ones which incorporated vantage point watches and transect surveys.

Main aims of the surveys were to:

- Conduct a comprehensive survey of all bird species present within the development site during the breeding season;
- Identify and document all breeding raptors and their patterns of activity within the study area;
- Map and analyse any flight paths used by target species across the site;
- Record all priority species and evaluate their conservation status within the site.

Table 1: Bird Survey Effort for the Granted Kilcash Wind Turbine

Month	Dates	Survey Effort
2020		
October	30 th	1 Vantage Point (VP) survey (2x3hr), Lough Surveys
November	25 st - 27 nd	1VP survey (2x3hrs), Walkover, Migratory watch, Lough Surveys
December	11 nd - 13 th	1VP survey (2x3hrs), Walkover, Lough Surveys, Dusk & Dawn survey
2021		
January	8 rd - 10 th	1VP survey (2x3hrs), Walkover, waterfowl, HH roost survey x2, Dawn
February	6 th - 8 th + 13 th	1VP survey (2x3hrs), Walkover x2, waterfowl, HH roost survey x2
March	19 th - 21 th	1VP survey (2x3hrs), Walkover, Migration watch, Lough Surveys
April	3 rd -5 th	1VP survey (2x3hrs), Walkover, BRVP x2 (3hrs), Migration Watch, Lough Surveys
May	22 nd , 24 th , 25 th	1VP survey (2x3hrs), Walkover, BRVP x2 (3hrs), Migration Watch, Snipe survey, Woodcock Survey, Lough Surveys
June	19 th - 21 st	1VP survey (2x3hrs), Walkover, BRVP x2 (3hrs), Snipe survey, Woodcock Survey
July	27 th - 29 th	1VP survey (2x3hrs), Walkover, BRVP x2 (3hrs)

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August	11th	1VP survey (2x3hrs)
August	28th	1VP survey (2x3hrs)
November	28th, 29th	1VP survey (2x3hrs), Walkover, BRVP x2 (3hrs)
December	21st - 22nd	1VP survey (2x3hrs), Walkover, BRVP x2 (3hrs)
2022		
January	10th, 11th	1VP survey (2x3hrs), Walkover
February	15th, 16th	1VP survey (2x3hrs), Walkover
March	17th, 18th	1VP survey (2x3hrs), Walkover
April	24th, 25th, 26th, 27th	1VP survey (2x3hrs), Walkover, 2x6hr Migration Watch
May	11th, 12th, 13th, 14th	1VP survey (2x3hrs), Walkover, 2x6hr Migration Watch
June	19th, 20th	1VP survey (2x3hrs), Walkover
July	9th - 10th	1VP survey (2x3hrs), Walkover
August	29th - 30th	1VP survey (2x3hrs), Walkover
September	24th - 27th	1VP survey (2x3hrs), Walkover, 2x6hr Migration Watch
October	27th - 30th	1VP survey (2x3hrs), Walkover, 2x6hr Migration Watch
November	27th - 30th	1VP survey (2x3hrs), Walkover, 2x6hr Migration Watch
December	19th, 20th	1VP survey (2x3hrs), Walkover
2023		
January	7th, 8th	1VP survey (2x3hrs), Walkover
February	17th, 18th	1VP survey (2x3hrs), Walkover
March	8th, 9th, 11th	1VP survey (2x3hrs), Walkover, 2x6hr Migration Watch

1.5.2.1 Winter Walkover Surveys

Winter walkover surveys were conducted to determine the presence of bird species of high conservation concern within potentially suitable habitats across the study area. The survey route was carefully designed to ensure comprehensive coverage. To maximize bird observations and capture species diversity, all key habitats and landscape features were included. Particular attention was given to areas likely to support target species, which were integrated into the transect routes. These surveys were carried out between November and March.

1.5.2.2 Breeding (Summer) Walkover Surveys

Summer walkover surveys were carried out between April-July, to determine the use of the site by breeding bird species. The survey route was carefully designed to ensure comprehensive coverage this including all habitats and aspects of the site, areas that may hold target species were paid particular attention to.



1.5.2.3 Vantage Point Surveys

The Vantage Point (VP) locations were selected in order to give a clear view of the site as well as additional land in the surrounding area in order to get the best possible coverage. Given the low topography of the site, one VP was deemed acceptable. VP surveys aim to quantify flight activity and distribution. According to the SNH guidelines, VP surveys should take place for a total of 72 hours. As seen in the table above, this effort was divided over the survey period.

1.5.2.4 Hen Harrier Roost Watches

Hen Harrier roost surveys were undertaken once a month during the winter season (Nov-March). Evening roost watches were conducted 30-40 minutes before sunset until it is no longer feasible to continue, and morning roost watches were completed 30 minutes before sunrise and a minimum of 30 minutes after sunrise.

1.5.2.5 Wintering and Migratory Waterfowl Surveys

These wintering and migratory waterfowl surveys took place surveying loughs and waterbodies within a 5km buffer of the site in order to efficiently record waterfowl species within the area. These surveys were conducted from September to November (which is representative of the autumn migration period), March to mid-May (representative of the spring migration period), and winter surveys took place during daylight hours with dusk and dawn surveys where applicable. This survey practice follows the guidance as determined by Gilbert *et al.*, 1998 and the Irish Wetland Bird Survey (BirdWatch Ireland, 2021).

1.5.2.6 Breeding Raptor Surveys

Breeding raptor surveys, which include birds of prey and owls, were conducted to determine if any attempted or successful breeding were made and to see where their territories were found. The methodology for this followed the guidance provided by Hardey *et al.*, 2013 where raptor surveys in the form of 3-hour VPs were conducted on a monthly basis during the core breeding season (April, May, June, July).

1.5.2.7 Woodcock Surveys

Visits for the woodcock surveys were conducted in the relevant areas between May and June. These surveys commenced one hour before sunset and finished shortly after sunset and finished one hour after sunset or whenever it was too dark to see.

1.5.2.8 Snipe Surveys

Breeding season surveys for snipe were conducted in the relevant areas between May and June. The surveys commenced shortly after sunrise and were conducted in accordance with Gilbert *et al.*, 1998.

1.5.3 Bat Surveys

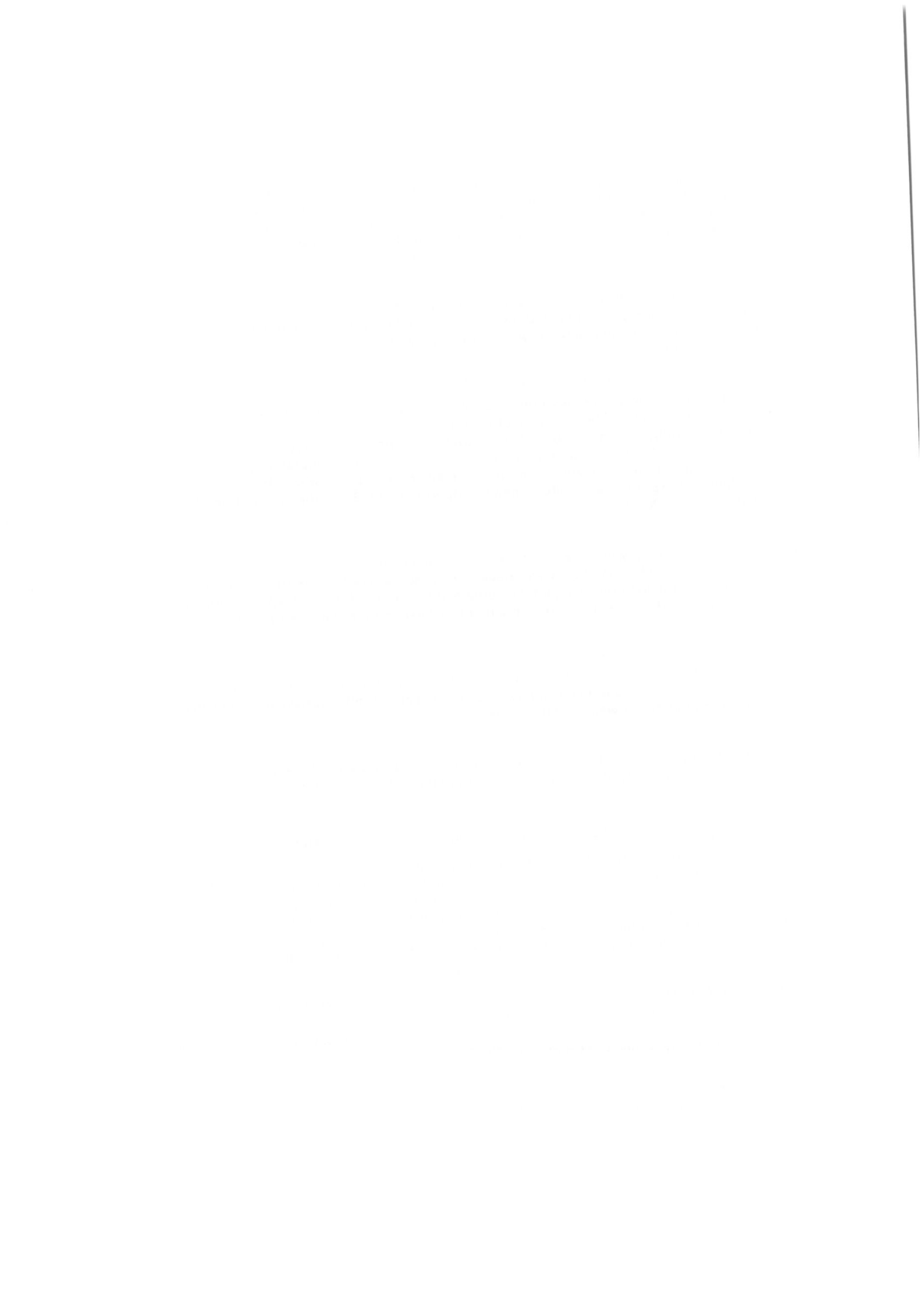
Bat surveys were undertaken by Flynn Furney Ecological Consultancy in August 2021.

Existing data on bats was reviewed by undertaking a search of bat records, as per the National Bat Database of Ireland (NBDI), held on the National Biodiversity Datacentre's online portal¹ for the 2km areas (tetrads M95E, M85Z, M85Y and M95D), in which the site is located. While such information can identify bat species which may occur within the site or in the surrounding areas, it should be noted that an absence of records is likely to reflect an absence of survey data and cannot be taken as confirmation that a particular species is not present at the site or surrounding area.

1.5.3.1 Building Searches

On the 31st of August, 2021, a number of agricultural buildings were investigated for signs of bat presence including: droppings, grease staining (created from bat fur rubbing against the area), urine marks, feeding signs (remains of moths or butterflies etc), dead bats, or the presence of bat fly pupae (*Nycteribiidae*). Other miscellaneous roosting signs such as cracks or holes within the building were noted.

All information and survey guidance was sourced from 'Bat Survey Guidelines: Traditional Farm Buildings Scheme,' Aughney, T., Kelleher, C. & Mullen, D. (2008).



1.5.3.2 Manual Bat Activity Surveys

Manual bat activity surveys were carried out according to Table 2 below. They were undertaken in favourable weather conditions and a handheld ultrasonic recorder (Echo Meter EM3+, Wildlife Acoustics) and a GARMIN e-trek 10 GPS device was used for accurate measurements.

Table 2: Details of Bat Surveys Undertaken for Kilcash Wind Turbine

Date	Survey type	Sunset/Sunrise	Start time	Finish time
30.08.2021	Dusk	20.56	19.56	22.26
31.08.2021	Dawn	06.40	05.10	07.10
31.08.2021	Dusk	20.24	19.54	22.24

1.5.3.3 Static Detector Surveys

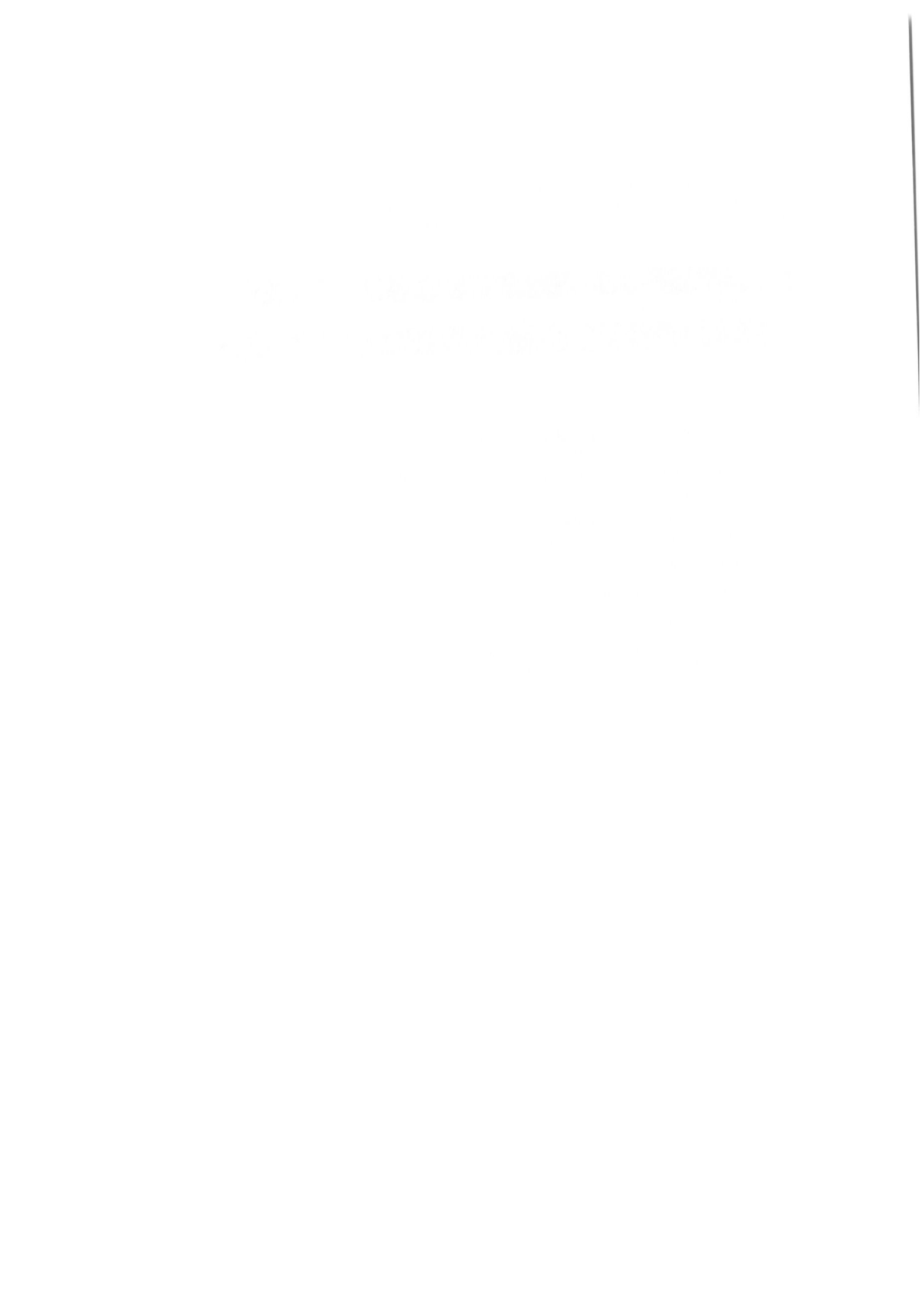
An Anabat Express passive bat detector (Titley Scientific) was deployed at the site for seven consecutive nights from 7th to the 13th of September 2021. The overall aim of this static detector is to identify any bat activity over a longer period of time compared to the manual surveys.

1.5.3.4 Data Analysis

Data collected from the site visits and static detectors were analysed using Anabat Insight (Titley Scientific). Bat pass per hour rate via the parameters below:

- Low: < 10 bat passes per hour
- Medium: >10 - <50 bat passes per hour
- High: > 50 bat passes per hour

This approach is consistent with national and international survey standards, ensures compliance with Annex IV species protection requirements under the Habitats Directive.



1.6 Description of The Proposed Works

The Works relates to the construction of a 20kV line from the Granted Turbine (REF:2360142), comprised overhead line and underground cabling that to tee into the existing DG102 Skrine Wind Farm into Roscommon 38kV station sharing the existing cubicle and conductors.

- The route will comprise of 507m of overhead line and 985m of underground cable, ducting and associated connection works. The overhead section of the route will traverse lands upon which the wind turbine and substation have been consented under planning REF:2360142, the underground section of the route will be contained within the public road corridor.
- As per the ESB Networks Underground Cable (UGC) specifications (SPEC-231213-AXUU) the works will require a single trench for the entire length of the cable route, located within the within public road corridor. The trench will be typically excavated 450mm wide by 1000mm deep and contain 1 No. 125mm diameter HDPE duct to accommodate power cables.
- The underground cable ducts will be installed in the trench and reinstated in accordance with the requirement and specifications of the ESB i.e. SPEC-231213-AXUU. At the point where the underground cable duct installation works are completed, the electrical cables are pulled through the installed duct, via a preinstalled draw wire.
- The Overhead Line (OHL) section of the grid connection route is planned to traverse c 507 metres of private lands. The route will necessitate the placement of wooden pole-sets each ranging from 12 to 16 meters in height spaced every 60-100m. The installation works for both poles and lines will adhere to standard procedures for a 20kV ESB overhead line. At locations where the line changes direction, drops from OHL to UGC and at pole set locations with unfavourable ground conditions, stay wires will be necessary. Stay wires will be supported by stay blocks made of wooden sleepers, buried underground for stability.
- All works undertaken including preparatory works will be carried out by the statutory undertaker under supervision of a suitably qualified Ecologist. ESB Networks will monitor the construction phase of the project and ensure works are being carried out in accordance with the agreed method statement, safety procedures, pollution control etc.

At the outset of works, the construction site boundary will be enclosed with a silt fence of filter fabric attached to timber posts at 1.5m intervals. During construction, up to approximately 100m³ of soil will be removed in constructing of the site access road. Approximately 568m³ of soil will also be removed in the construction of the turbine foundation. The turbine standing area will occupy approximately 100m X 70m. An additional obstruction-free area 110m long will be required for crane mobilisation. An estimated minimum total of 350m³ of soil will be removed in the construction of the hard standing area.

During excavations of the access track, the surface layer of material will be stored separately for use in the reinstatement process in stockpiles approximately 2m high initially adjacent to the proposed road. The side slopes of stockpiles will be fashioned at an angle less than the natural angle of repose of the material.

Temporary stockpiles of material excavated from the turbine base will be stored adjacent to the turbine base as this will be required as backfill material above the finished base. Again, the material will be stored in a safe manner at heights and locations as per above, and at a safe distance from any excavations.

All surplus excavated material and other wastes generated on site will be removed to a licence facility.

The proposed site location is shown in Figure 1 while the layout is shown in Figure 2, which also defines the ownership boundary (blue line) and site works boundary (red line).



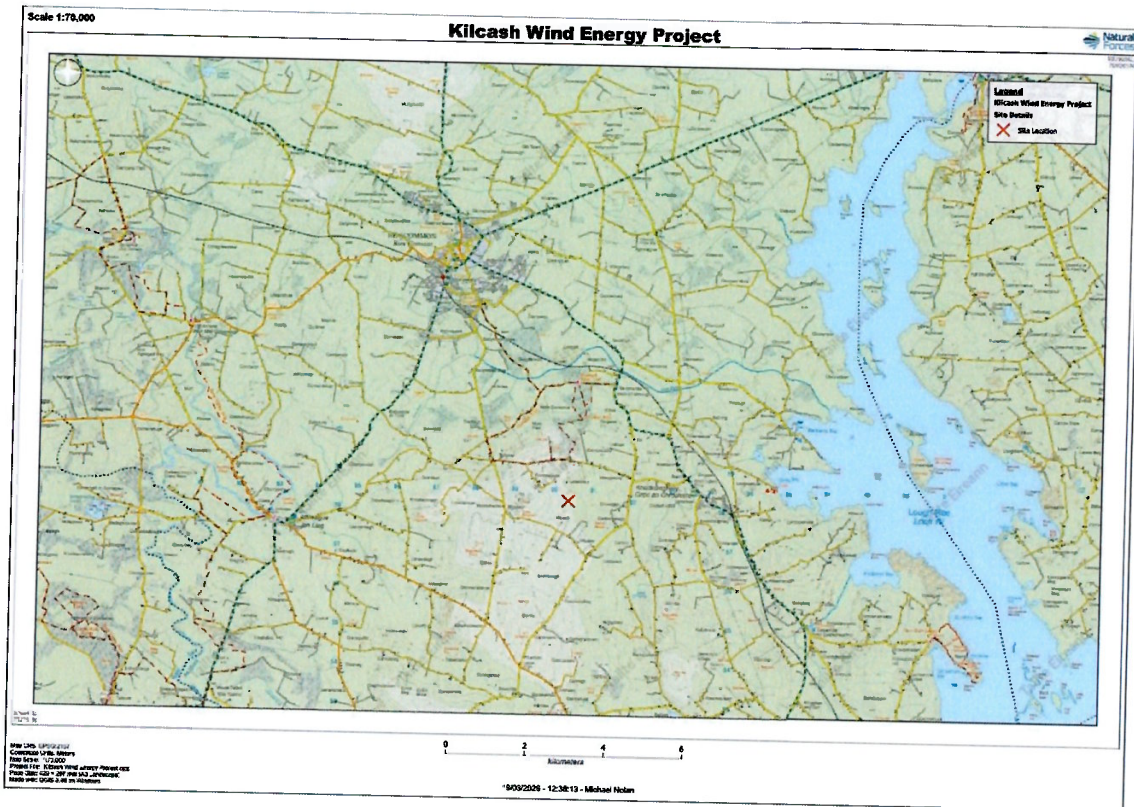


Figure 1: Site Location

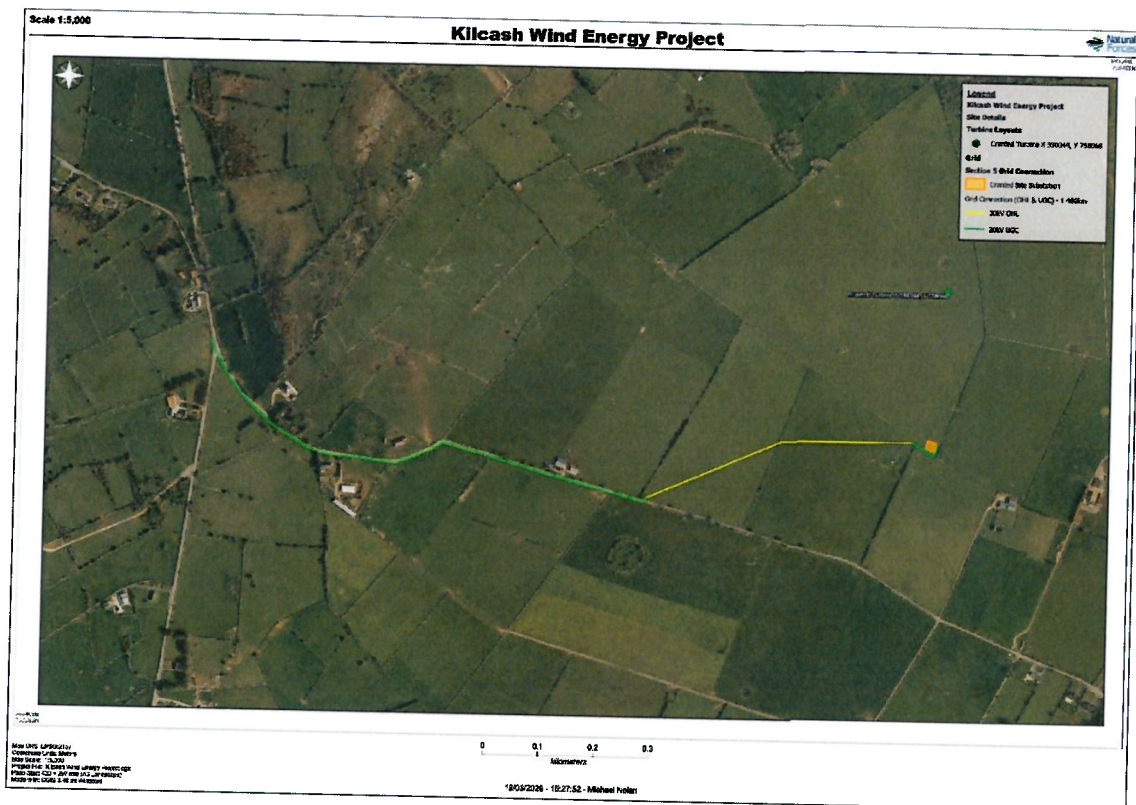


Figure 2: The Proposed Works

1.7 Description of Existing Environment

1.7.1 Habitats

The habitats at the site include improved agricultural grassland (GA1), grazed on by local sheep, subdivided stone walls (BL1) and a local road (BL3) featuring vegetated verges. The site is at approx. 115m ASL sloping gently to a high point of 162m at Moydow c. 1km to the northwest.

The grassland habitat does not provide a suitable habitat for any rare or threatened species listed in the Irish Data Book or the Flora Protection Order (2015), and there are no records of any protected plant species from the vicinity of the site.



Figure 3: Aerial View of the Site





Figure 4: Improved Grassland on the Site

1.7.2 Fauna

There is no evidence of any breeding or resting refugia within the vicinity of the site. The open nature of the grassland habitat in the area is suitable for Irish hare (*Lepus timidus hibernicus*). There is no cover to provide refugia for other mammals such as badger (*Meles meles*), Irish stoat (*Mustela erminea hibernica*), hedgehog (*Erinaceus europaeus*) and fox (*Vulpes vulpes*), though occasional occurrence of individuals is likely.

There are no potential bat roost sites in the immediate vicinity of the site. A barn and old dwelling house adjacent to the site may provide some roosting potential though the open nature of the landscape in the area does not provide optimal foraging conditions for bats.

There are no watercourses or open drains along the field boundaries in the vicinity of the site.

1.7.3 Birds

During the non-breeding surveys, a total of 29 bird species were recorded, and 18 species were recorded within the 5km loughs.

Detailed the table below are the 16 Species of Conservation Concern recorded during the non-breeding season surveys within the study site and 10 recorded at loughs. Included are species of Section 22 of the Wildlife Act, Amber and Red listed species of BoCCI and EU Birds Directive Annex I species.

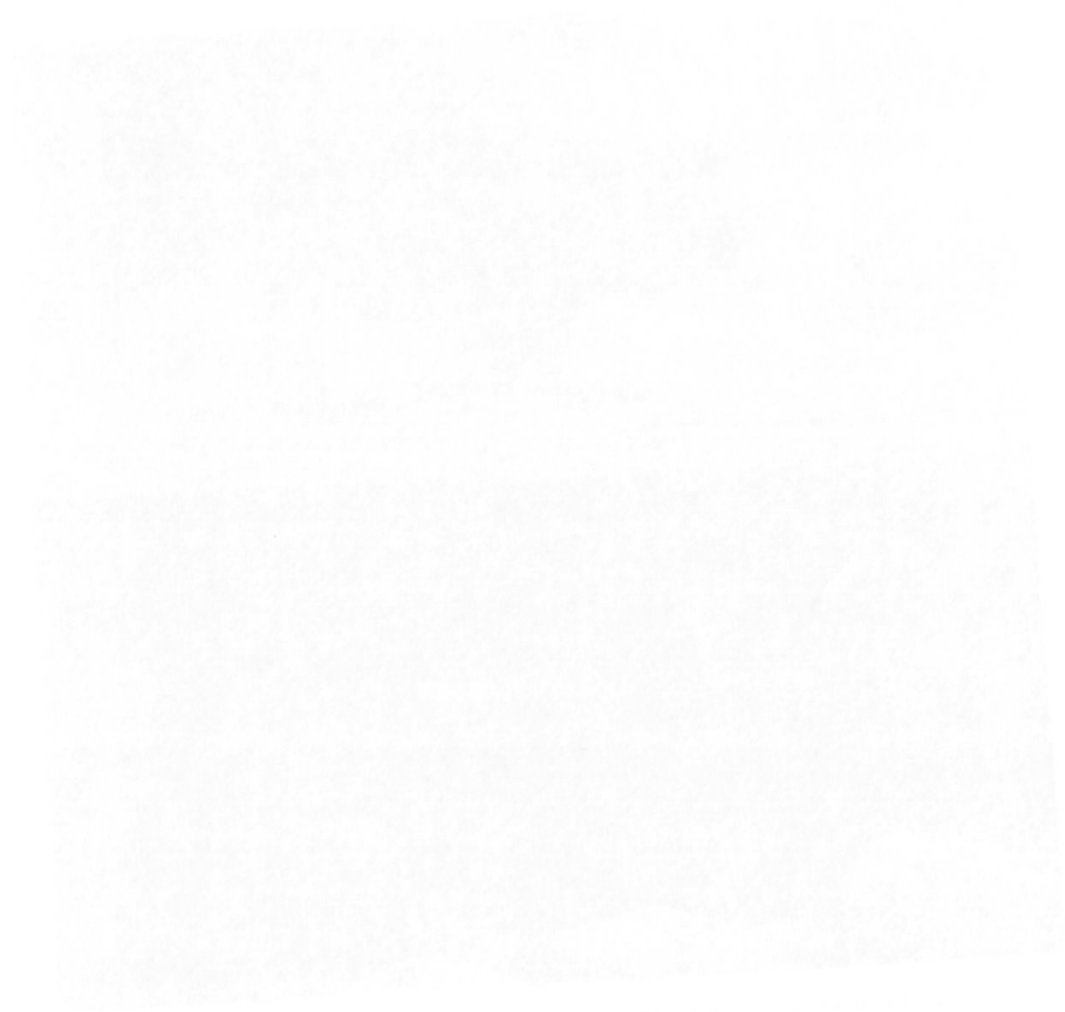


Table 3: Species of Conservation Concern Recorded During Non-Breeding Season

Species	Code	Conservation Status	Notes
Buzzard	BZ	Green BoCCI, Section 22	Recorded using the site on every monthly visit, strong association.
Sparrowhawk	SH	Green BoCCI, Section 22	Recorded on 7 occasions throughout the nonbreeding season. Strong association in the winter.
Kestrel	K.	Red BoCCI, Section 22	Observed using the site to forage throughout the winter.
Golden Plover	GP	Annex 1, Red BoCCI	Uses the site for foraging in the winter, strong association.
Lapwing	L	Red BoCCI	Recorded on 1 occasion using the site to forage, weak but potentially unknown association. Also Recorded at the lough sites.
Snipe	SN	Red BoCCI	Recorded on two occasions in the winter, both times flushed on walkovers.
Starling	SG	Amber BoCCI	Recorded using the site throughout the winter.
Redwing	RE	Red BoCCI	Recorded using the site throughout the winter.
Mute Swan	MS	Amber BoCCI	Seen once flying over the edge of the south buffer border. Also flew through the site footprint. In addition to flight paths, also recorded at the lough sites.
Whooper Swan	WS	Amber BoCCI, Annex 1	Seen once flying over the edge of the south buffer border. Flight path still unclear. Also recorded at the lough sites.
Black-headed Gull	BH	Amber BoCCI	Recorded using the site to forage in the Winter, strong association. Also recorded at the lough sites.
Common Gull	CM	Amber BoCCI	Recorded regularly using the site to feed and fly within study site.
Lesser-black backed Gull	LB	Amber BoCCI	Recorded in March and seen to feed and fly within



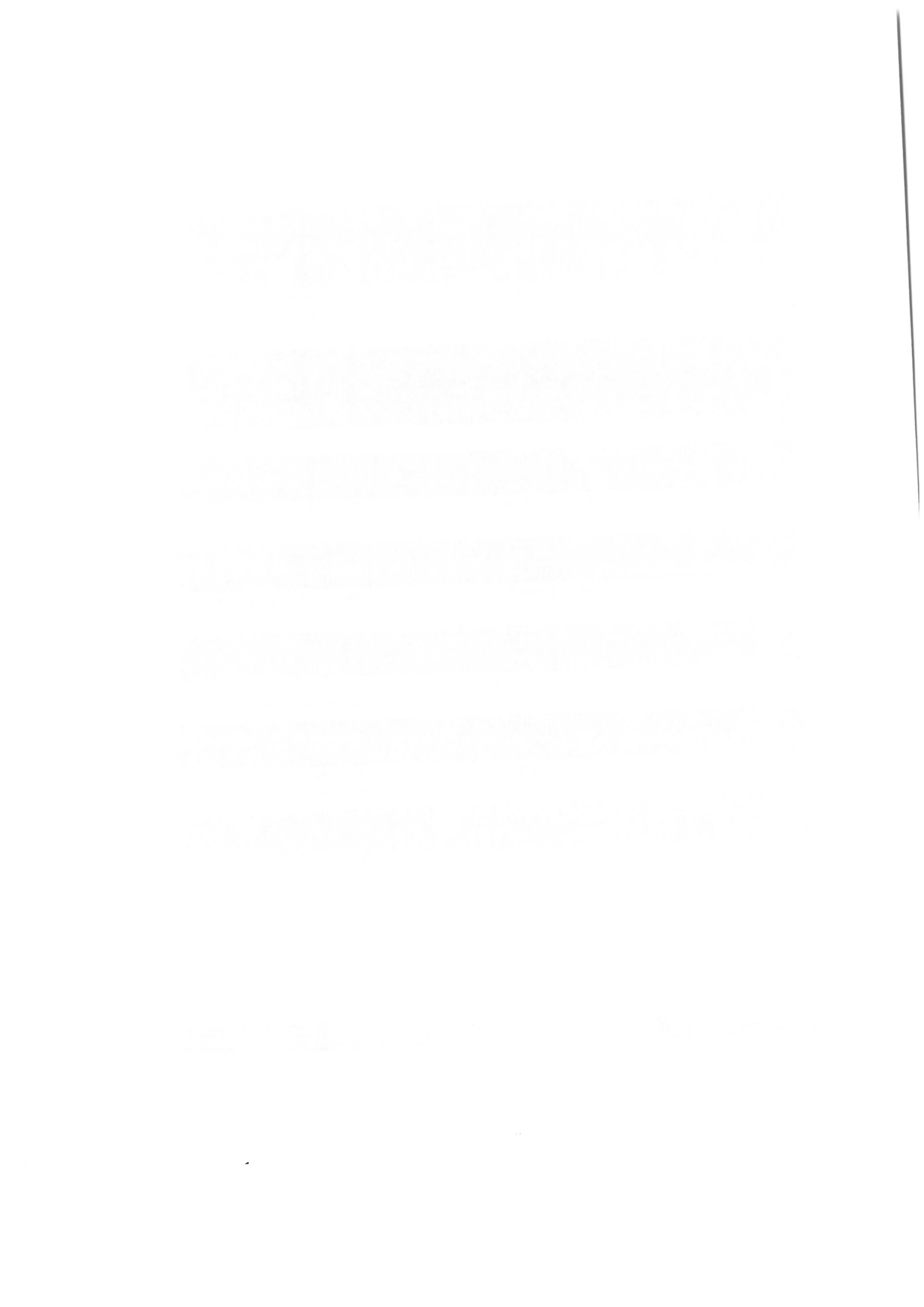
			study site on their migration movements.
Mallard	MA	Amber BoCCI	Seen several times using the waterbodies within the site. Also recorded at the lough sites.
Mistle Thrush	MT	Amber BoCCI	Recorded on 1 occasion during a walkover, weak association.
Cormorant	CU	Amber BoCCI	Recorded on 1 occasion flying over the site at height. Also recorded at the lough sites.
Loughs			
Great Crested Grebe	GG	Amber BoCCI	Recorded on every waterfowl survey.
Tufted Duck	TU	Amber BoCCI	Recorded on every waterfowl survey.
Goldeneye	GN	Red BoCCI	Recorded on every waterfowl survey.
Shoveler	SV	Red BoCCI	Recorded just in February surveys.
Teal	T.	Amber BoCCI	Recorded on every waterfowl survey.
Wigeon	WN	Amber BoCCI	Recorded on every waterfowl survey.
Curlew	CU	Red BoCCI	Recorded on one occasion in the month of December.
Coot	CO	Amber BoCCI	Recorded on every waterfowl survey.
Redshank	RK	Red BoCCI	Recorded on one occasion in the month of December.
Great Northern Diver	ND	Amber BoCCI	Recorded on every waterfowl survey.

1.7.3.1 Summer Season Surveys (April to September)

During the breeding season surveys, a total of 24 bird species were recorded within the study. There are 17 species of concern that were recorded within the study listed in the table below.

Table 4: Species of Conservation Concern Recorded During Breeding Season Surveys

Species	Code	Conservation Status	Notes
Buzzard	BZ	Section 22	Hunting regularly throughout the season, nest located just outside but within the buffer at the NE of the site and successfully fledged a chick



Sparrowhawk	SH	Section 22	Recorded on 2 occasions in July, once during a VP and once during a walkover No breeding activity observed within the area
Golden Plover	GP	Annex 1, Red BOCCI	Recorded GP in April, likely to be the group before they migrate. Large flight/flocking behaviour over the site at height. No observations in the summer period therefore a weak association in the summer.
Black-headed Gull	BH	Amber BoCCI	Uses the site regularly to forage
Common Gull	CM	Amber BoCCI	Recorded once in April
Lesser-black backed Gull	LB	Amber BoCCI	Uses the site regularly to forage
Herring Gull	HG	Amber BoCCI	Uses the site regularly to forage
Swallow	SL	Amber BoCCI	Recorded within site in May, June, July and August. Strong association
Swift	SI	Red BoCCI	Low number recorded in July, Weak association
House Martin	HM	Amber BoCCI	Recorded within site in May, June, July and August. Strong association
Sand Martin	SM	Amber BoCCI	Recorded within site in June and July. Unknown association
Meadow pipit	MP	Red BoCCI	Recorded once in June, Weak association
Linnet	LI	Amber BoCCI	Recorded once in May, Weak association
Starling	SG	Amber BoCCI	Recorded on one occasion in June. Weak association
House Sparrow	HS	Amber BoCCI	Recorded on one occasion in June. Weak association
Mallard	MA	Amber BoCCI	Seen regularly using the waterbodies within the site and flying into site to land
Cormorant	CA	Amber BoCCI	Recorded on 1 occasion flying through high above the site
BRVP			
Peregrine	PE	Annex 1	No association with the site. Was never observed during the surveys within

			the site. PE nest was located outside the 2km buffer, successfully fledged chicks
Kestrel	K.	Amber BoCCI, Section 22	No Kestrel observed using the site in the summer but an individual recorded hunting at BRVP1, >1km from the footprint (North of the site)

1.7.3.2 Discussion

For the species listed in the table there are a number with weak associations with the site which include: House Sparrow, Meadow Pipit, Linnet, Swift, Redwing, Mistle thrush, Starling and Common Gull. Given this they will not be discussed anymore, and it should be assumed that the site will have no negative impact on these species.

Sites within a 5km radius were surveyed to count waterfowl. The aim was to determine whether or not there is movement or migration of any migratory birds. There were some species recorded, but none within the Project area these species are as listed below:

- Great Crested Grebe
- Tufted Duck
- Goldeneye
- Shoveler
- Teal
- Wigeon
- Curlew
- Coot
- Redshank
- Great Northern Diver.

With these species, there will be no direct habitat loss, displacement, barrier effects or pathways for direct or indirect pathways exist. Therefore, the species listed above are not considered further within the assessment.

A number of species were recorded on multiple occasions for the site and these are discussed below:

1.7.3.2.1 Golden Plover

Golden Plover is listed under Annex 1 of the EU Birds Directive due to their long-term decline in population. A flock of 12 Golden plover was recorded briefly flying through the western side of the site in October. In January, during a cold spell that froze over a lot of loughs, >120 GP were seen using the site during a walkover on one day and during the VPs on the following day. A dawn survey in January revealed that Golden Plover and Lapwing were arriving to the site from a WNW direction. The source of where they are arriving from is unknown.

Site visits were carried out in February in order to understand their behaviour around the site. On one of the site visits there was 145 Golden Plover using the western side of the site. This suggests they have a strong association with the site for foraging in the winter but are not solely dependent on the site. Upon further surveys in March and April, there were Golden Plover spotted flying over the site at a dawn survey before landing within the site.

The estimated national wintering population of Golden Plover in Ireland is 80,707. 1% of the ROI National wintering population of Golden Plover is 807. As per NRA 2009, a regularly occurring population of 807 Golden Plover is required for classification as Nationally Important. The maximum

number of birds recorded from the winter season was 160 birds. This maximum number does not correspond with the classification criteria for National or International Importance.

There were no observations of Golden Plover over the summer period therefore no evidence of breeding activity was recorded.

1.7.3.2.2 Lapwing

160 Lapwing were recorded in January using the site to the western side, similar to the behaviour of the Golden Plover. Lapwing however, were only recorded at the site in January presumably because the loughs freeze causing the Lapwing to travel to the site. Waterfowl surveys of the loughs and waterbodies, which usually record Lapwing, did not record any within January.

The estimated national wintering population of Lapwing in Ireland is 69,823. 1% of the ROI National wintering population of Lapwing is 698. As per NRA 2009, a regularly occurring population of 698 Lapwing is required for classification as Nationally Important. The maximum number of birds recorded from the winter season was 160 birds. This maximum number does not correspond with the classification criteria for National or International Importance.

1.7.3.2.3 Whooper Swan

Whooper Swan are listed as an Annex 1 species under the EU Birds Directive and are on the Amber list with the Birds of Conservation Concern in Ireland.

There was only one observation of four Whooper Swans over the windfarm site. The estimated national wintering population of Whooper Swans in Ireland is 11,852. 1% of the ROI National wintering population of Whooper Swans is 118. No evidence of feeding or roosting activity was recorded.

Given there was only a total of four Whooper Swans recorded, the maximum number does not correspond with the classification criteria for National or International Importance.

1.7.3.2.4 Mute Swan

There was only one observation of 2 Mute Swans over the windfarm site. The estimated national wintering population of Whooper Swans in Ireland is 7,032. 1% of the ROI National wintering population of Mute Swans is 70. Numbers of ecological significance as per NRA criteria were not recorded. The maximum number of birds recorded from the winter season was 2 birds. No evidence of feeding or roosting activity was recorded.

1.7.3.2.5 Buzzard

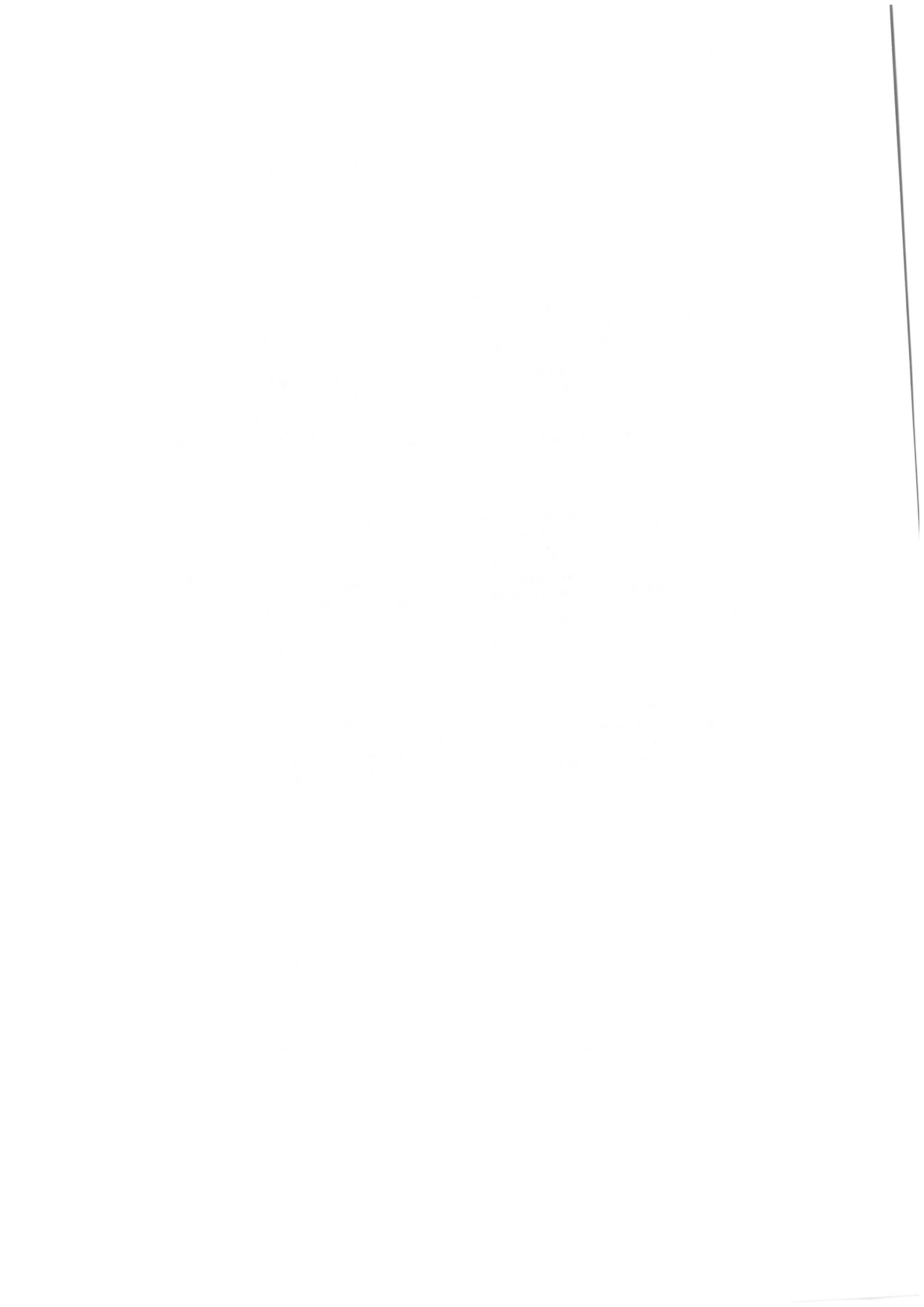
Buzzards are listed as a section 22 species under the Wildlife Act of 1976, as amended, and on the green list of Birds of Conservation Concern in Ireland. Given their slow flying, they are more susceptible to turbine strikes.

Throughout the study period, Buzzards were observed frequently. The species exhibited territorial behaviour throughout the surveys including, carrying food to an area of trees. This would indicate nesting but outside the Project area, which would be confirmed by the siting of a fledged juvenile late in the summer period.

During the survey period, breeding behaviours were recorded north of the site with a Male Buzzard carrying prey to an area of forestry. During a VP survey in March, 2 pairs of Buzzards (4 IND at once) were recorded flying. Roscommon has ample breeding and foraging habitat for any displaced buzzards, and it is thought there will be no adverse impacts to the local population.

1.7.3.2.6 Sparrowhawk

Sparrowhawk is listed in the section 22 of the Wildlife Act 1976, as amended. Sparrowhawk were identified on the site on seven occasions during the non-breeding season and a further three males were observed during the breeding season. One of these observations was made when the



Sparrowhawk was flying at a height that would be considered a collision risk zone, but all other observations were at low direct flights. One adult female was recorded exhibiting hunting behaviour within the site.

Throughout the survey period, observations consisted solely of individual birds. No breeding activity was recorded within the Project site and only on one occasion it was used for hunting. From the findings outlined, it is assumed that the Granted Development or the Proposed Works will produce no adverse impact on the species as there is an ample number of foraging habitats for any displaced birds.

1.7.3.2.7 Kestrel

Kestrel is listed as Red on the Birds of Conservation Concern in Ireland and listed in the section 22 of the Wildlife Act 1976, as amended. It is not listed on Annex I of the Birds Directive.

The species was recorded frequently during the non-breeding season and observed twice hunting within the site. Kestrels were never observed within the site in the breeding season, but an individual was recorded at BRVPI. No breeding activity was observed within the site.

Given this there are no anticipated impacts on Kestrel are anticipated.

1.7.3.2.8 Peregrine Falcon

Peregrine is listed as Annex 1 on the EU Birds Directive. A pair were located breeding at a quarry approximately >2km from the footprint of the site. The pair raised and presumed to fledge two chicks. During the survey, adults were recorded entering the quarry from a SE direction. On all survey efforts of the site, there were no observations of peregrines using the site, therefore no adverse impacts are anticipated.

1.7.3.2.9 Gull Species

Black Headed Gull (BH), Lesser Black-back Gull (LB) and Herring Gull (HG) were observed regularly using the site. All three species are listed as Amber on the Birds of Conservation Concern in Ireland. BH were recorded throughout the survey season and observations of LB and HG were mainly recorded in the summer period. There was no breeding activity of Gull species within the site with the species using the site to forage. With such regular use of the site by the Gull species it is assumed there would be a short-term effect of potential collision risk, avoidance and displacement of the local population. The surrounding area is dominated by GA habitat and therefore, there is no potential for loss of significant habitat for this species.

1.7.3.2.10 Mallard

Mallards are listed as Amber on the Birds of Conservation Concern in Ireland. Mallard were recorded on several occasions in the breeding season, all female. The species, on occasion, have been flushed from the site during walkover surveys including during Dawn Snipe and Dusk Woodcock surveys. This would indicate that Mallards can and will use these pounds to roost. Flight observations of Mallards, made in July, saw two female Mallards flying into the site at a low height and land within the site.

1.7.3.2.11 Cormorant

Cormorant are listed as Amber on the Birds of Conservation Concern in Ireland. This species was recorded flying over the site on one occasion in the non-breeding season (January) and one other occasion in the breeding season (May). Both flights went through the middle of the site and on both occasions were just a single bird the Cormorants would not use the site to forage but a possible passage route between waterbodies is unknown.

1.7.4 Bats

1.7.4.1 Desk Study Results

No NBDI bat records, as per the National Biodiversity Datacentre online portal, were returned for any of the four tetrads within which the surveyed lands are located. The nearest bat records to the site, as per the NBDC, are provided in Table 5.

Bat Conservation Ireland's habitat suitability index classifies the landscape, within which the Grid Route site is located, as having habitat of moderate suitability for bats, with a score of 20.89 for the area within which the Grid Route site is located. The three species of bat predicted to most likely occur in the tetrad within which the site is located are Common pipistrelle (*Pipistrellus pipistrellus*), Soprano pipistrelle (*Pipistrellus pygmaeus*) and Leisler's bat (*Nyctalus leisleri*). These species are the three most widespread and detected in Ireland and use a wide range of habitat types, unlike other bat species that are more habitat specific. There are no NBDI records for the EU Annex II lesser horseshoe bat (*Rhinolophus hipposideros*) from within 30km of the Grid Route site.

Table 5: Nearest NBDC Bat Records to the Grid Route Site

Tetrad (2km ²)	Grid Reference	Date	Survey title/dataset	Surveyor	Species
M86V	M893613	05/08/2009 31/08/2009	NBDI - All Ireland Daubenton's bat Waterways Survey	Volunteer	Daubenton's bat (<i>Myotis daubentonii</i>)
M96A	M9160	22/09/2007	NBDI - Buildings at Risk, Heritage Council	Caroline Shiel	Natterer's bat (<i>Myotis nattereri</i>)
M95H	M9355	19/09/2005	NBDI - EIA Survey	Scott Cawley	Pipistrelle (<i>Pipistrellus sensu lato</i>) Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>) Brown long-eared bat (<i>Plecotus auritus</i>) Natterer's bat (<i>Myotis nattereri</i>) Daubenton's bat (<i>Myotis daubentonii</i>)

1.7.4.2 Building Searches

Agricultural buildings (ITM 590165 757685 and ITM 590321 757726) and a derelict farm cottage (ITM 590131 757644) were searched for evidence of bat roosts. The old cottage is exposed to the elements due to gaps in the slate roof and suffers from damp and draughts inside. The building is not considered suitable for bats and is unlikely to be used as a regular roost. No evidence of usage by bats, current or past was noted. The farm sheds are of modern design and are constructed of steel girders and corrugated iron sheeting on concrete bases. Due to their open nature, these buildings are considered unsuitable for bats due to exposure to draughts and lack of dark secluded areas.

1.7.4.3 Field study - transects

Three manual bat activity were undertaken at dusk and dawn on the 30th and 31st of August 2021. Three species of bat, Leisler's bat, Soprano pipistrelle and common pipistrelle were detected during the three surveys, though common pipistrelle was not detected during the dawn survey on the 31st. A total of 21 bat passes were detected during the manual bat activity surveys however this bat pass figure refers to activity, not an actual number of individual bats. Certain species, such as soprano

[Redacted text]

[Redacted text]

and common pipistrelles, habitually forage in a circular path over the same area for extended periods and a single bat could be mistaken for numerous individuals of the same species. The total number of bat passes recorded per survey and divided by the number of hours of recording provides a figure for analysis (Table 6).

Table 6: Nearest NBDC Bat Records to the Grid Route Site

Date	Number of minutes	Number of passes	Bat passes per hour
30.08.2021 (Dusk)	150	7	2.8
31.08.2021 (Dawn)	120	3	1.5
31.08.2021 (Dusk)	150	11	4.4

1.7.4.4 Static Detector Survey

The static detector operated for seven consecutive nights between September 7th and 14th inclusive. The detector was programmed to start recording at sunset and to cease recording at sunrise (the GPS function in the detector determines sunset and sunrise times based on location). A total of 132 bat passes were detected during this period, however this figure is related to activity levels and is not an actual count of individual bats. The total number of bat passes recorded per night and divided by the number of hours of recording provides a figure for analysis.

Both the manual walkover surveys and the static bat detector data showed that Leisler's bat, Common pipistrelle and Soprano pipistrelle were the most frequently occurring species on the Grid Route site. Based on the analysis of the collected bat data from the cross-site transects and the static bat detector, bat activity on the Grid Route site is considered low. No survey produced a bat pass per hour rate higher than 4.8, with < 10 bat passes per hour classified as 'Low'. Considering that the surveys were undertaken in the recommended seasonal timeframe for active bat surveys, during a spell of suitable weather and that late August / early September coincides with increased activity of bat levels in Ireland which is attributable to young bats being on the wing, these low levels of activity would suggest that during less favourable weather conditions and other times of year, these levels are likely to be lower.

1.7.4.5 Summary of Bat Survey Results

Following the surveys and habitat assessment, the site is considered of 'Low' habitat suitability for bats, as per the guidelines for assessing the potential suitability of a site for bats based on the presence of habitat features (Collins, 2016). The Grid Route site will have no removal of hedgerows or other linear landscape features or habitats of importance such as scrub being required. No trees require felling. The buildings located to the east of the Grid Route site were assessed as having no bats present and offering low bat roost potential. Therefore, therefore there are no medium or long-term impacts on the local bat population anticipated.

1.8 Natura 2000 Sites and Conservation Objectives

1.8.1 Identifying the European Sites to be Considered in the Assessment

The DoEHLG Guidance (2010) highlights that the approach to screening should be dependent on the scale and likely effects of the plan or project. This guidance states that the assessment should include:

- Any Natura 2000 site within or adjacent to the plan or project area; and
- Any Natura 2000 site within the potential zone of impact of the plan or project. With regard to zone of impact, for plans the guidance references the UK Guidance (Scott Wilson et al 2006) which sets a limit of 15km.

Both the DoEHLG and the Scottish Natural Heritage Guidance also refer to the need to check sites which may be separated by greater distances if they are connected (for example hydrologically) or if the impact of the plan or project is such that it could impact these sites. The Scottish Natural Heritage Guidance (2012) also highlights that identifying the Natura 2000 sites that should be considered in the assessment is not always a straightforward process. The guidance states that "It is important to ensure all sites potentially affected are considered, but it is equally important to



avoid excessive data gathering about sites that are not likely to be affected and to keep the assessment proportional to the likelihood of significant effects." For the purpose of this NIS, consideration has been given to all European sites within a 15km distance of the site.

1.8.2 Natura 2000 Sites

There are 12 Special Areas of Conservation (SACs) and 4 Special Protection Areas (SPAs) located within a 15 km radius of the site. These designated sites, including their respective distances from the site and their relevant Qualifying Interests (for SACs) or Special Conservation Interests (for SPAs), are detailed in Table 7. Figure 4 illustrates the European sites situated within approximately 10 km of the site.

The nearest Natura 2000 site is the Lough Ree SAC and SPA, situated around c.4.8 km from the Grid Route site. There are no hydrological links between the site location and Lough Ree or any other European designated site. Given the absence of a physical or ecological pathway between the Grid Route site and these conservation areas, there is no potential for direct effects on any designated sites.

However, a number of nearby SPAs have been established for the conservation of overwintering migratory bird species. As a result, the only potential ecological interaction arising from the site relates to possible ex-situ impacts on these Special Conservation Interest (SCI) species.

Table 7: Designated Areas Within 10km

Site Name	Site Code	Distance from Project	Qualifying Interests / Special Conservation Interest (* Indicates Priority Habitat)
Lough Ree SAC	000440	c.4.8km	<ul style="list-style-type: none"> • Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation [3150] • Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210] • Active raised bogs [7110] • Degraded raised bogs still capable of natural regeneration [7120] • Alkaline fens [7230] • Limestone pavements [8240] • Bog woodland [91D0] • Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus</i>
Lough Ree SPA	004064	c.4.8km	<ul style="list-style-type: none"> • Little Grebe (<i>Tachybaptus ruficollis</i>) [A004] • Whooper Swan (<i>Cygnus cygnus</i>) [A038] • Wigeon (<i>Anas penelope</i>) [A050] • Teal (<i>Anas crecca</i>) [A052] • Mallard (<i>Anas platyrhynchos</i>) [A053] • Shoveler (<i>Anas clypeata</i>) [A056] • Tufted Duck (<i>Aythya fuligula</i>) [A061] • Common Scoter (<i>Melanitta nigra</i>) [A065] • Goldeneye (<i>Bucephala clangula</i>) [A067]



			<ul style="list-style-type: none"> • Coot (<i>Fulica atra</i>) [A125] • Golden Plover (<i>Pluvialis apricaria</i>) [A140] • Lapwing (<i>Vanellus vanellus</i>) [A142] • Common Tern (<i>Sterna hirundo</i>) [A193] • Wetland and Waterbirds [A999]
Ballinturly Turlough SAC	000588	c.5.1km	<ul style="list-style-type: none"> • Turloughs [3180]
Lisduff Turlough SAC	000609	c.6.15km	<ul style="list-style-type: none"> • Turloughs [3180]
Lough Funshinagh SAC	000611	c.5.93km	<ul style="list-style-type: none"> • Turloughs [3180] • Rivers with muddy banks with <i>Chenopodium rubri</i> p.p. and <i>Bidention</i> p.p. vegetation [3270]
River Suck Callows SPA	004097	c.6.5km	<ul style="list-style-type: none"> • Whooper Swan (<i>Cygnus cygnus</i>) [A038] • Wigeon (<i>Anas penelope</i>) [A050] • Golden Plover (<i>Pluvialis apricaria</i>) [A140] • Lapwing (<i>Vanellus vanellus</i>) [A142] • Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)[A395] • Wetland and Waterbirds [A999]
Lough Croan Turlough SPA	004139	c.8.3km	<ul style="list-style-type: none"> • Shoveler (<i>Anas clypeata</i>) [A056] • Golden Plover (<i>Pluvialis apricaria</i>) [A140] • Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)[A395] • Wetland and Waterbirds [A999]
Lough Croan Turlough SAC	004139	c.8.3km	<ul style="list-style-type: none"> • Turloughs [3180]
Ballygar (Aghrane) Bog SAC	002199	c.13.0km	<ul style="list-style-type: none"> • Active raised bogs [7110] • Degraded raised bogs still capable of natural regeneration [7120]
Ballynamona Bog And Corkip Lough SAC	002339	c.14.4km	<ul style="list-style-type: none"> • Turloughs [3180] • Active raised bogs [7110] • Degraded raised bogs still capable of natural regeneration[7120] • Depressions on peat substrates of the <i>Rhynchosporion</i> [7150] • Bog woodland [91D0]
Corbo Bog SAC	002349	c.10.4km	<ul style="list-style-type: none"> • Active raised bogs [7110] • Degraded raised bogs still capable of natural regeneration [7120] • Depressions on peat substrates of the <i>Rhynchosporion</i> [7150]

The key conservation goals established for Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) focus on preserving or restoring the favourable status of their designated habitats and species (NPWS, 2020).

For habitats listed as Qualifying Interests (QIs) in SACs and species identified as Special Conservation Interests (SCIs) in SPAs, a habitat or species is considered to be in favourable condition when the following criteria are met:

- Its natural range and the area it occupies within that range are stable or expanding;
- The ecological structures and functions essential for its long-term viability are present and expected to persist over time;
- The status of the species typically associated with the habitat remains favourable.

1.9 Stage 2 Natura Impact Assessment

1.9.1 Consideration of Likely Significant Effect

The 'Waddenzee ruling' of the European Court of Justice ruled that a project should be subject to appropriate assessment "if it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site, either alone or in combination with other plans and projects." A likely effect is therefore one that cannot be ruled out on the basis of objective information. "The precautionary approach is fundamental and in cases of uncertainty it should be assumed that effects are significant" (DEHLG 2010).

1.9.2 Identification of Potential Impacts

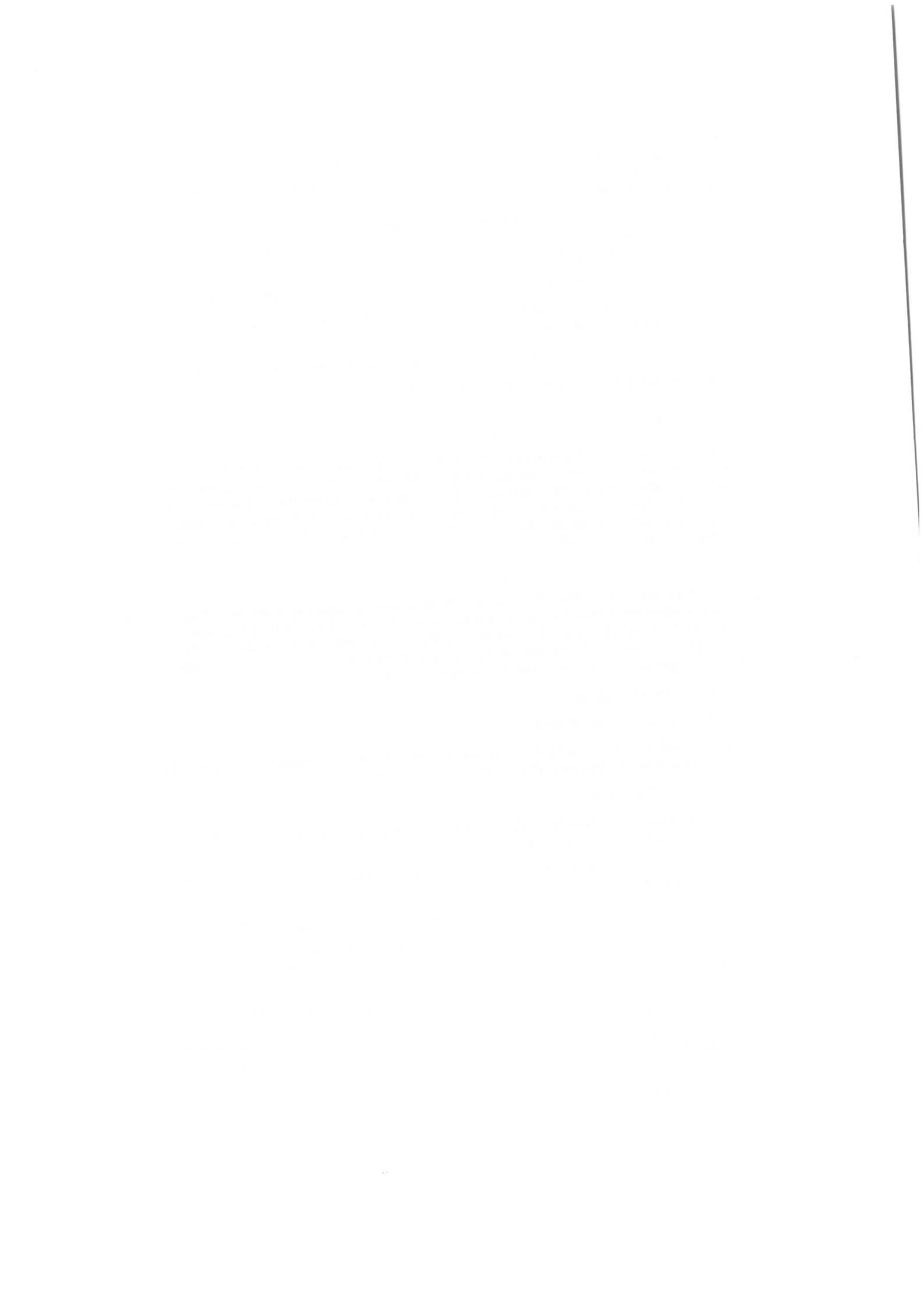
In practice and as outlined in the EU document 'Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC' and the national guidance document 'Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities', impacts that could potentially occur can be categorised under a number of headings as follows:

- Impact on Annex I habitat;
- Loss / reduction of habitat area;
- Direct or indirect damage to the physical quality of the environment (e.g. water quality, hydrology and water flow alteration, soil compaction, etc.);
- Impact on Annex II species;
- Causing serious or ongoing disturbance to species or habitats for which the site is selected (e.g. noise, illumination, human activity);
- Causing direct or indirect damage to the size, characteristics or reproductive ability of populations of Natura 2000 site;
- Fragmentation of habitats or populations of species due to the location of the site.

The impact type which can occur is dependent on the attributes of the Qualifying Interests (habitats and species) for which an SAC is designated or the Special Conservation Interests for which an SPA is designated.

The potential for an impact to European sites within the 15km vicinity of the site is reviewed in Table 8. In view of the remoteness from the nearest SAC (all >4.5km), the lack of connectivity between the site and these designated conservation areas, and the limited habitat diversity (open grasslands), there is consider not risk of any effect, direct or indirect, on the qualifying interest habitats or species of any SAC.

The open grasslands on the site do however provide ex-situ foraging habitat for a number of bird species listed as Special Conservation Interests for a number of SPA's in the surrounding landscape, in particular Golden Plover and to a lesser extent Lapwing. Four Whooper Swan (also an SCI species for some SPA's) were observed flying over the fringe of the Grid Route site on a single occasion, with another single observation of two Mute Swan and of a solitary cormorant.



In view of the above the potential for impacts on SCI species for the various SPA's in the vicinity of the Project have been categorised as follows and are assessed in detail below:

- Loss of foraging habitats for SCI species;
- Interference with flight paths for SCI species.

Table 8: European Sites with the Potential to be Impacted by the site

European Site	Pathways between Source and Receptor	Potential Impacted QI or SCI
Lough Ree SAC	No	
Lough Ree SPA	Potential for occurrence of ex-situ SCI species	<ul style="list-style-type: none"> • Whooper Swan (<i>Cygnus cygnus</i>)[A038] • Golden Plover (<i>Pluvialis apricaria</i>)[A140] • Lapwing (<i>Vanellus vanellus</i>) [A142]
Ballinturly Turlough SAC	No	
Lisduff Turlough SAC	No	
Lough Funshinagh SAC	No	
River Suck Callows SPA	Potential for occurrence of ex-situ SCI species	<ul style="list-style-type: none"> • Whooper Swan (<i>Cygnus cygnus</i>)[A038] • Golden Plover (<i>Pluvialis apricaria</i>)[A140] • Lapwing (<i>Vanellus vanellus</i>) [A142] • Greenland White-fronted Goose(<i>Anser albifrons flavirostris</i>) [A395]
Lough Croan Turlough SPA	Potential for occurrence of ex-situ SCI species	<ul style="list-style-type: none"> • Golden Plover (<i>Pluvialis apricaria</i>)[A140] • Greenland White-fronted Goose(<i>Anser albifrons flavirostris</i>) [A395]
Lough Croan Turlough SAC	No	
Ballygar (Aghrane) Bog SAC	No	
Ballynamona Bog And Corkip Lough SAC	No	
Corbo Bog SAC	No	
Fortwilliam Turlough SAC	No	
Four Roads Turlough SAC	No	
Four Roads Turlough SPA	Potential for occurrence of ex-situ SCI species	<ul style="list-style-type: none"> • Golden Plover (<i>Pluvialis apricaria</i>)[A140] • Greenland White-fronted Goose(<i>Anser albifrons flavirostris</i>) [A395]

Killeglan Grassland SAC	No	
Aughrim (Aghrane) Bog SAC	No	

1.9.3 Assessment of Potential Impacts on Designated Areas

1.9.3.1 Loss of Foraging Habitats for Special Conservation Interests (SCI) Species

The site is located outside any designated conservation area. The nearest Natura 2000 sites are the Lough Ree SPA and SAC, approximately 4.8 km from the boundary of the site. Additionally, three more SPAs—River Suck Callows, Lough Croan Turlough, and Four Roads Turlough—are situated within a 10 km radius of the site.

Bird activity surveys conducted by Flynn Furney (2021) did not record any feeding or roosting behaviour by geese or swans on the Project lands. However, Golden Plover and Lapwing were regularly observed foraging on the site. No roosting activity was recorded, and the observed flight direction during dusk surveys was predominantly west-northwest.

Golden Plover appeared on the site throughout the winter months, with a peak count of 145 individuals. This species is listed as a Special Conservation Interest (SCI) for three of the four nearby SPAs. Lapwing, also an SCI species for Lough Ree SPA and River Suck Callows SPA, was recorded only once during the surveys, with a single flock of 160 birds. Although both species are known to feed in improved grassland beyond designated sites, there was no evidence of Whooper Swan or other SCI birds using the site for foraging during the study.

The national wintering population of Golden Plover in Ireland is estimated at 80,707 individuals (Burke *et al.*, 2018), while the threshold for a site of National Importance is set at 1% of this figure—equivalent to 807 birds. The observed numbers (max 145) fall well below this benchmark. Similarly, for Lapwing, the national wintering estimate is 69,823 birds, setting the 1% threshold at 698; the maximum count of 160 individuals is also well below this level.

While some localised displacement of foraging activity is anticipated due to turbine installation, this is expected to be restricted to within roughly 150 metres of the turbine location. The broader landholding offers ample foraging space beyond this radius. Even if the site is entirely avoided by these birds post-construction, the wider landscape offers a substantial supply of comparable grassland habitat, limiting any potential adverse impact on species populations or conservation targets.

Both Golden Plover and Lapwing are opportunistic foragers, feeding on invertebrates such as beetles and earthworms, as well as seeds and plant material. Their distribution spans a variety of inland and coastal environments across Ireland, with site attractiveness often influenced by variable farming practices and seasonal weather patterns, including flood events or frost.

In summary, while some degree of habitat displacement is anticipated, the extent is minimal and does not pose a risk to local or national populations of either species, nor to the conservation objectives of the designated European sites in the region.

1.9.3.2 Interference With Flight Paths for SCI Species

A small flock of Whooper Swans (four individuals) were recorded flying over the general area of the site on a single occasion during the winter bird surveys carried out by Flynn Furney (2021). Additionally, isolated flight events involving Mute Swans (two individuals) and a single Cormorant were also documented during the same period. The limited frequency and low numbers of these observations, combined with the site's open landscape and its distance from major roosting or feeding grounds for these species, suggest that the area does not function as a significant commuting or migratory route.

The landscape itself lacks any distinctive topographical or hydrological features that might channel bird movement along a particular corridor. As such, any bird flights over the site are likely to be incidental, shaped more by environmental variables like wind conditions and local disturbance than by consistent migratory behaviour. Given that the Granted Development involves the installation of only a single turbine, any potential disruption to bird flight paths would be highly localised and minor in scale.

Due to the very limited number of flight records near the Granted turbine location, the use of collision risk modelling is not deemed necessary. The infrequent sightings and low individual counts strongly indicate that the turbine does not sit within a regularly used avian flight corridor. Consequently, the potential risk of bird collision is assessed to be negligible.

1.9.4 Potential In-Combination Effects

In-combination effects refer to the cumulative impact of the proposed Works alongside other past, present, or reasonably foreseeable future projects. The primary concern in this context is the potential for combined effects on European Sites.

A review of existing and planned projects in the vicinity of the proposed Works has been conducted. Notably, the single turbine adjacent project (ACP ref: 319800) granted planning, and the Skrine windfarm 2km southwest of the Project.

Despite the geographical closeness of these projects, assessments indicate that their combined effects are unlikely to result in significant adverse impacts on any European Sites. The reasons are as follows:

- **Scale and Nature of Developments:** The project involves the installation of access roads and a grid route which will limit the extent of potential environmental disturbances due to a reduction in works required from what was granted under the above reference.
- **Habitat Considerations:** The areas are characterised by agricultural grassland with limited ecological sensitivity. There is ample similar habitat in the surrounding landscape to support species such as the Golden Plover and Lapwing, which are of Special Conservation Interest (SCI) in nearby Special Protection Areas (SPAs).
- **Mitigation Measures:** Both projects in the vicinity of the site have incorporated comprehensive mitigation strategies to minimise environmental impacts during construction and operation phases.
- **Regulatory Oversight:** Each project has been subject to rigorous environmental assessments and regulatory approvals, ensuring that potential cumulative impacts are thoroughly evaluated and addressed.

Regarding general agricultural activities in the catchment area, while they may contribute to nutrient enrichment and increased levels of suspended solids in surface waters, these activities are ongoing and not subject to Appropriate Assessment (AA). Therefore, they are excluded from this cumulative impact consideration.

In conclusion, based on the available information and assessments, there is no reasonable scientific doubt that site, either alone or in combination, will have significant negative in-combination effects on any European Sites.

1.9.5 Mitigation

The primary concern identified in this Natura Impact Statement (NIS) pertains to the potential loss of foraging habitat for Golden Plover and Lapwing—species of Special Conservation Interest (SCI) in several nearby Special Protection Areas (SPAs). However, the anticipated habitat loss is minimal and is not expected to significantly affect any European Site, Annex-listed bird species, or their conservation objectives. Consequently, specific mitigation measures for these species are deemed unnecessary.

The site lacks watercourses but to safeguard these any potential impacts during the construction of the site, the following measures will be implemented:

- **Refuelling:** On-site refuelling of construction equipment will be confined to a designated area adjacent to the temporary compound near the substation. This area will feature a concrete base measuring at least 10m x 6m and a bunded wall of 0.3m on three sides, with one open side for access.
- **Storage:** Fuel and other chemicals will be stored in mobile bunded units located exclusively within the temporary refuelling compound. These units will have an outer tank bunding

capacity of 110%. Spill control equipment, capable of storing over 300 litres of oil and absorbing up to 400 litres, will be readily available in the refuelling area.

- **Operator training:** All machinery operators will receive training on the site's refuelling procedures as part of the Construction Environmental Management Plan (CEMP). This includes instruction on operating the sump valve in the bunded area and the use of spill control equipment. In the event of a spill, contaminated materials such as spill mats will be stored separately and disposed of through an EPA-licensed operator.
- **Welfare facilities:** Temporary welfare and kitchen facilities will be situated in the compound area between the substation and refuelling area, set on a hardstand surface. These facilities will be serviced off-site, with waste disposal managed by a licensed contractor.
- **Silt control:** Silt fences will be installed around any stockpiled topsoil on-site to prevent sediment runoff.
- **Concrete works:** During the act of pouring the concrete for the turbine base and the associated refuelling area, appropriate formwork and shuttering methods will be employed to prevent any runoff. Excavations will be dewatered prior to any pouring, which will only occur during dry weather. Covers will be available to protect freshly poured concrete in case of unexpected rain. Dewatering will be managed using portable pumping equipment, with discharges directed to roadside drains.

1.10 Conclusion and Final Determination

This NIS was assembled by using various means of data collection, including on-site surveys, consultations and desk studies, and was informed by both EU and national guidelines on assessments under Article 6 of the Habitats Directive. The NIS focused on identifying potential direct, indirect, and secondary impacts on local European Sites within an approximate 15 km radius of the Proposed Works at Kilcash, Co. Roscommon.

Located about c. 4.8 km from the nearest designated conservation areas—Lough Ree Special Area of Conservation (SAC) and Special Protection Area (SPA)—the site was assessed for its ecological connectivity. Notably, winter surveys recorded the presence of ex-situ foraging of Golden Plover and Lapwing in the area. These species are of special conservation interest in several SPAs within the surrounding landscape.

Given the minimal habitat disturbance anticipated from the site and the abundance of similar habitats nearby, the development is unlikely to significantly affect the wintering populations of these bird species or compromise their conservation objectives within any European site. Additionally, a solitary observation of four Whooper Swans flying over the site during winter surveys suggests that the area is not a commonly used flight path for this species, indicating a negligible risk of collision.

Based on the comprehensive assessment, it is concluded that the Proposed Works will not adversely affect the integrity of any European site, either alone or in combination with other plans or projects, and no reasonable scientific doubt remains regarding this validation conclusion.

1.11 References

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