NATURA IMPACT STATEMENT

MARCH 2025

Prepared for
Patrick Ridge

Site Address
Emlaghmore, Ballyconeelly, Co. Galway

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NATURA IMPACT STATEMENT

Rev.	Status	Date	Author
01	Draft	14/04/25	CM
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03	Final	17/10/2025	LM

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Statement of Authority

This report was authored by Larry Manning B.Sc. (Hons). Larry Manning has over 14 years' experience as an ecologist, working across consultancy, research, and regulatory environments. He demonstrates high professional standards through rigorous application of environmental legislation, ethical practice, and clear scientific reporting. He maintains a strong CPD record, including specialist training in bat ecology, marine mammal mitigation, and acoustic fisheries research. Larry's expertise includes Appropriate Assessment, EcIA, EIAR (biodiversity chapters), and a wide range of specialist surveys (ornithology, mammals, reptiles, amphibians, bats, aquatic ecology). Larry has led ecological assessments for large-scale infrastructure, offshore renewable energy, and conservation projects, ensuring compliance with Irish and EU legislation. He is skilled in data management, GIS, statistical analysis, and the design of mitigation and monitoring strategies to achieve robust, evidence-based outcomes. As a Principal and Senior Ecologist, Larry has developed new ecological service offerings, prepared winning tenders, and contributed to business growth through strategy and client engagement. He has led successful stakeholder consultations with developers, agencies, NGOs, and local communities. Larry applies leadership and diplomacy to achieve project objectives while maintaining biodiversity protection as a core priority.

1.0 Introduction

OMC has been retained by Pat Ridge to carry out an Appropriate Assessment/ Natura Impact Statement (NIS), prepared by Larry Manning for;

This application under Section 37L of the Act relates to proposed development at the property being: (A) restoration of existing unoccupied farm cottage, (B) raising of the wall plate level of existing farm cottage to allow for habitable loft space to comply with current building regulation standards, (C) forming a single storey extension linking existing cottage and adjoining outhouse, (D) restoration, conversion and extension of an existing outhouse to form part of overall single dwelling, (E) form new permeable parking area, (F) decommissioning of existing septic tank and to install a new proprietary sewage treatment system with filter area to comply with current EPA standards, (G) install a new rainwater harvesting system, (H) install surface water soakaways as well as associated site works.

The site is approximately 2m from the Connemara Bog Complex SPA and approximately 10m from the Connemara Bog Complex SAC in the townland of Emlaghmore, Ballyconeelly, Co. Galway. As such, the potential impacts of the proposed works must be assessed by the competent authority, in accordance with Article 6(3) of the Habitats Directive 92/43/EEC (Assessment of Plans and Projects significantly affecting Natura 2000 sites). This report provides the necessary information for the completion of an Appropriate Assessment regarding the potential impact of the proposed works on sites of European importance.

1.1 Information sources and surveys

The site surveys were carried out on Fri. 7th June 2024 and Wed. 12th March 2025. The Screening

Statement for AA is, in part, informed by:

- The Department of the Environment, Heritage and Local Government (2010) Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities.
- European Commission (2002) Management of Plans and Projects significantly affecting Natura 2000 sites. Methodological guidance on the provision of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC. Office for Official Publications for the European Communities, Luxembourg.

1.2 Requirement for Appropriate Assessment

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, commonly referred to as the 'Habitats Directive', and Directive 2009/147/EC of the European Parliament, and of the Council on the conservation of wild birds (codified version of Directive 79/409/EEC as amended), hereon referred to as the 'Birds Directive' are European Community Legislations established for the conservation of biodiversity and natural habitats. Sites, species and habitats under protection of Directive 92/43/EEC (Habitats Directive) and Directive 2009/147/EC (Birds Directive) are referred to as Natura 2000 sites (also referred to as European sites in the 2011 Birds and Natural Habitats Regulations).

The term Natura 2000 sites will be used in this report. Two types of Natura 2000 site designation exist and are categorised as follows:

- the Special Area of Conservation (SAC), which is designated for the conservation of flora, fauna and habitats of European ecological importance under the Habitats Directive.
- the Special Protection Area (SPA), which is designated for the conservation of bird species and habitats of European ecological importance under the Birds Directive.

These 2 categories of sites collectively comprise a network of European protected areas 'Natura 2000'.

The term 'Qualifying Interests' (QI) refers to the specific named habitats and/or non-bird species which require protection and for which an SAC or SPA is designated. The term Special Conservation Interests (SCIs) refers to the named bird species which require protection and for which an SPA is designated.

However, the terminology of QI is predominantly used in practice for non-bird and bird species alike. The term Qualifying Interests is used throughout this report.

Habitats which require protection are listed in Annex I of the Habitats Directive and include lakes, rivers, heaths and turloughs, as well as raised bogs and active blanket bogs. Species whose habitats require protection are listed in Annex II (Habitats Directive) and include Lesser Horseshoe Bat, Salmon and Otter.
Endangered and migratory species which require SPAs are listed in Annex I of the Birds Directive. Naturally, protection is given on the basis of priority, with specific/heightened protection strategies pertaining to certain habitats/species.

1.3 Methodology

Articles 6(3) and (4) of the Habitats Directive outline the testing mechanisms which underpin the decision-making process for the consideration of plans and projects that could significantly impact the ecological integrity of a Natura 2000 site. The Department of the Environment Heritage and Local Government guidelines (DOELHG, 2009) indicates the European Commission's methodological guidance (EC 2000, 2002, 2006, 2018), outlining the approach of how plans and projects should be carried out within Natura 2000 sites. This is categorised as a 4-stage process. Whether a further stage is required is dependent on the outcome of each successive stage.

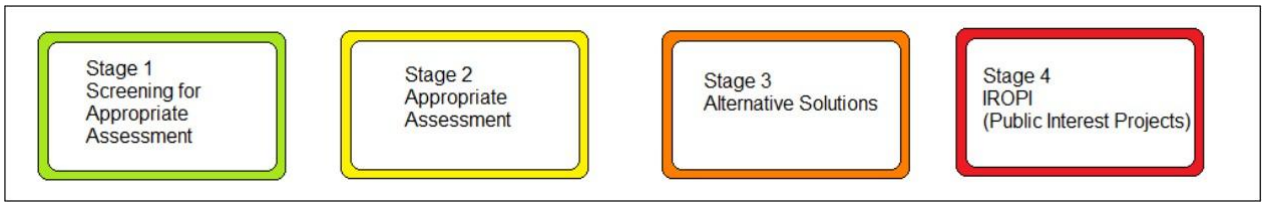


Figure 1: Stages of Appropriate Assessment

1.4 Screening

This examines the likely effects of a project or plan on a Natura 2000 site and determines whether it can be objectively concluded that these effects will not be significant. There are four steps involved in this process which are outlined as follows.

1. It must be considered whether the project or plan is inherently connected to or necessary to the management of the site.

2. A description of the project or plan, in conjunction with other projects or plans which, together, could possibly have a significant effect on the integrity of a Natura 2000 site.

3. Identification of the possible ecological effects on the Natura 2000 site.

4. An assessment of the significance of the potential effects.

1.5 Scope

The objective of the screening exercise is to determine the possible implications of the project, alone or in conjunction with other plans or projects on the conservation objectives and ecological integrity of Natura 2000 sites. This report has been prepared in accordance with the European Commission guidance document Assessment of Plans and Projects Significantly affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (EC, 2001) and the Department of the Environment's Guidance on the Appropriate Assessment of Plans and Projects in Ireland (Amended 2010)

Following the preliminary screening, if effects are deemed significant or indeterminate on the conservation objectives and the general integrity of Natura 2000 sites, further assessment under Article 6(3) is necessary and it is recommended that a Natura Impact Statement (NIS) be completed.

In the case of works already completed, a remedial NIS (rNIS) is completed retrospectively for the application of retention with An Coimisiún Pleanála. It must be noted that this NIS report and the rNIS will be treated separately. The project descriptions and scope of the two different reports require separate analysis.

2.0 Description of development

The development description is the first step to properly identifying possible impacts. This should include all features of the project so that each can be individually considered in respect of the conservation objectives of nearby Natura 2000 sites.

2.1 Site Location

The proposed development site is located in Emlaghmore, Ballyconeelly, Co. Galway. The site is accessed via a shared private road, approx. 8km south of Clifden Town. The proposed development site consists of an existing semi-ruinous dwelling and stone shed on an area of land which measures approximately 0.72 hectares in area. The site is surrounded by agricultural land, with few other residential properties in the area. See site layout plan in figure 1.

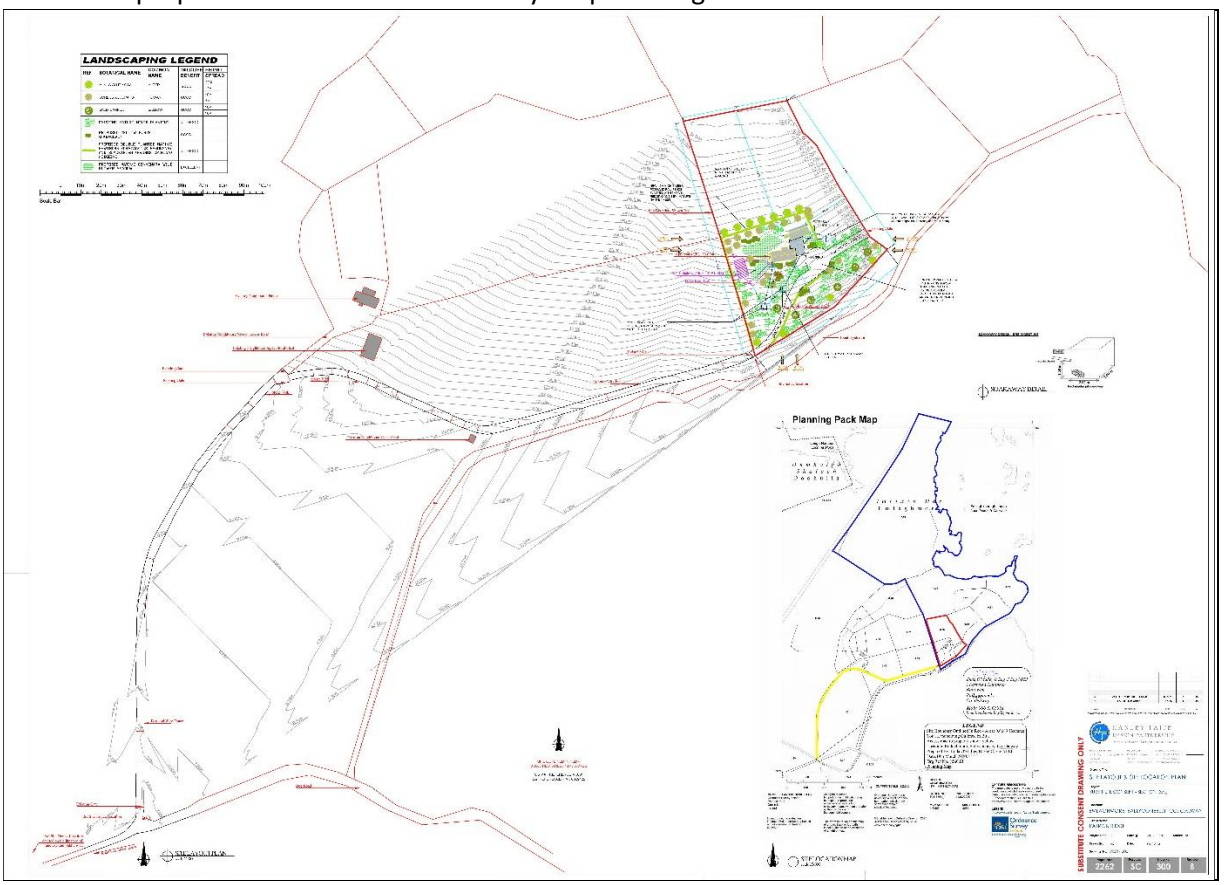


Figure 1. Site layout plan.

2.2 Project description

The proposed project is to:

1. Restore existing unoccupied farm cottage.
2. Raise wall plate level of existing cottage to allow for habitable loft space to comply with current building regulation standards.
3. Build single story extension to cottage and adjoining outhouse.
4. Convert, extend and restore existing outhouse to form part of overall single dwelling.
5. Install new proprietary sewage treatment system with filter area as well as all associated site works.

The approximate total area within the site boundaries is 0.72 Ha. The site is currently walled off from the surrounding landscape and is used periodically for low intensity grazing of cattle and sheep. The project is small in terms of size and scale. See figure 2 below for project design.

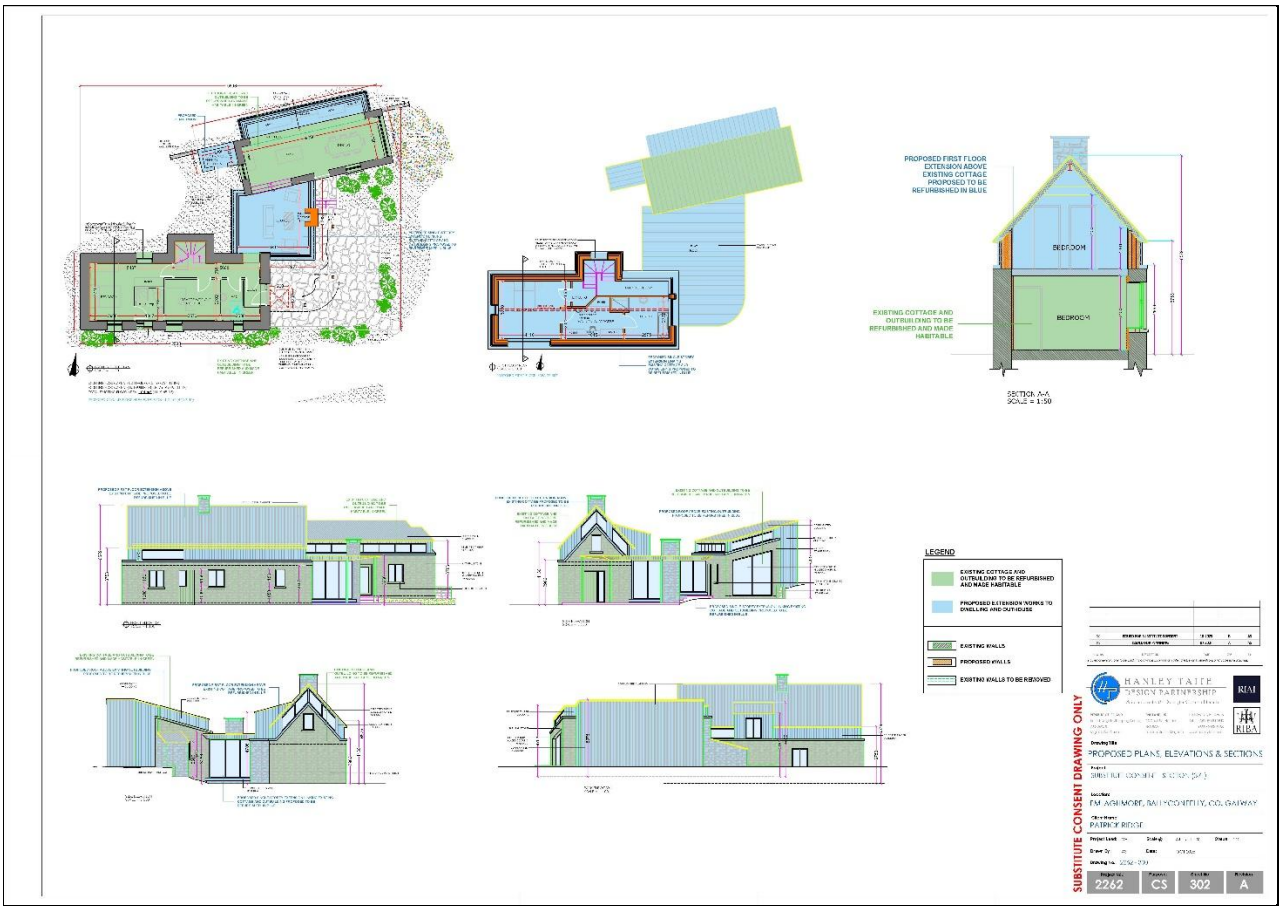


Figure 2. Design of proposed building.

Proposed works for the subject site include:

1. Clearing unnecessary materials and debris so that construction can begin.

2. Groundworks and excavations

3. The existing walls will be retained, a concrete ringbeam formed at wallplate level to support the new roof and the existing stone will be repointed externally with a Diathonite lime plaster applied internally.

4. The extension will be timberframed with timber cladding, reducing the requirement for wet trades such as blocklayers and plasterers.

5. Concrete pour foundations constructed

6. Installation of plumbing and electricity connections

7. Soakways and drainage on site

8. Gravel fill to be imported to finish off driveway etc

9. Installation of EPA compliant effluent treatment system and polishing filter

10. Planting of trees and shrubs.

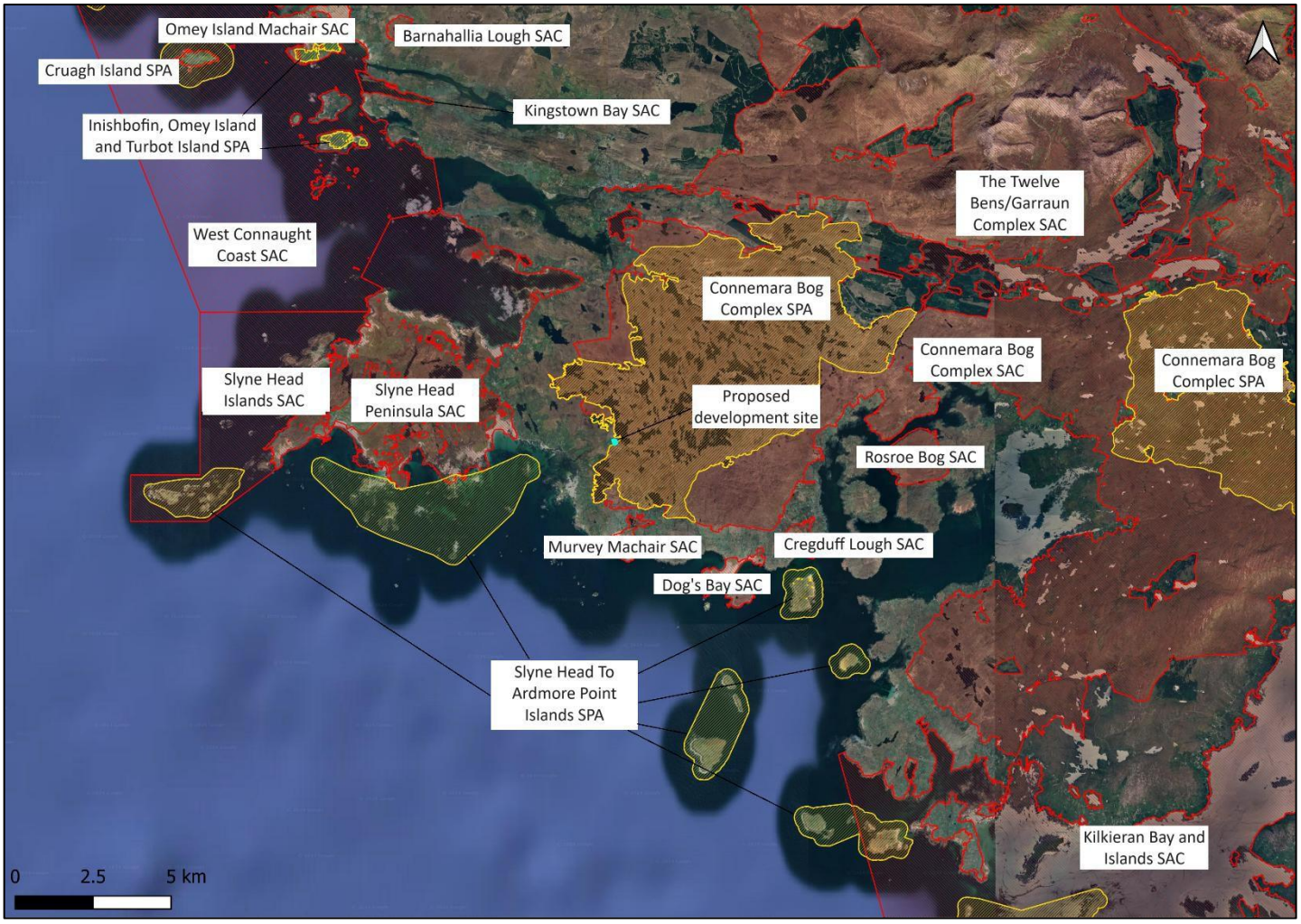
Map 1: Location of the proposed development site (blue outline), (Source: Bing maps)

2.3 Relationship to designated sites

As per NPWS guidelines, Natura 2000 sites within a 15km radius of the proposed project were initially posed for consideration. The table below lists Natura 2000 sites within the 15km screening radius.

Natura 2000 Site	Code	Distance
Inishbofin, Omey Island and Turbot Island SPA	004231	12.34km
West Connaught Coast SAC	002998	8.79km
Barnahallia Lough SAC	002118	14.53km
Twelve Bens/Garraun Complex SAC	002130	8.98km
Slyne Head Peninsula SAC	002074	3.15km
Kingstown Bay SAC	002265	12.27km
Connemara Bog Complex SAC	002034	0.01km
Connemara Bog Comples SPA	004181	0.00km
Slyne Head to Ardmore Point Island SPA	004159	2.52km
High Island, Inishshark and Davillaun SPA	004144	12.34km
Dog's Bay SAC	001257	4.95km
Cregduff Lough SAC	001251	6.1km
Rosroe Bog SAC	000324	8.57km

Table 1: Natura 2000 sites within 15km of the proposed development site



Map 3: Location of development site in relation to local Natura 2000 sites

2.4 Zone of Influence

The "Zone of Influence" can be defined as the difference between the spatial footprint of a project or development and the extent of the developments' effects on the surrounding environment, in relation to habitat and species populations.

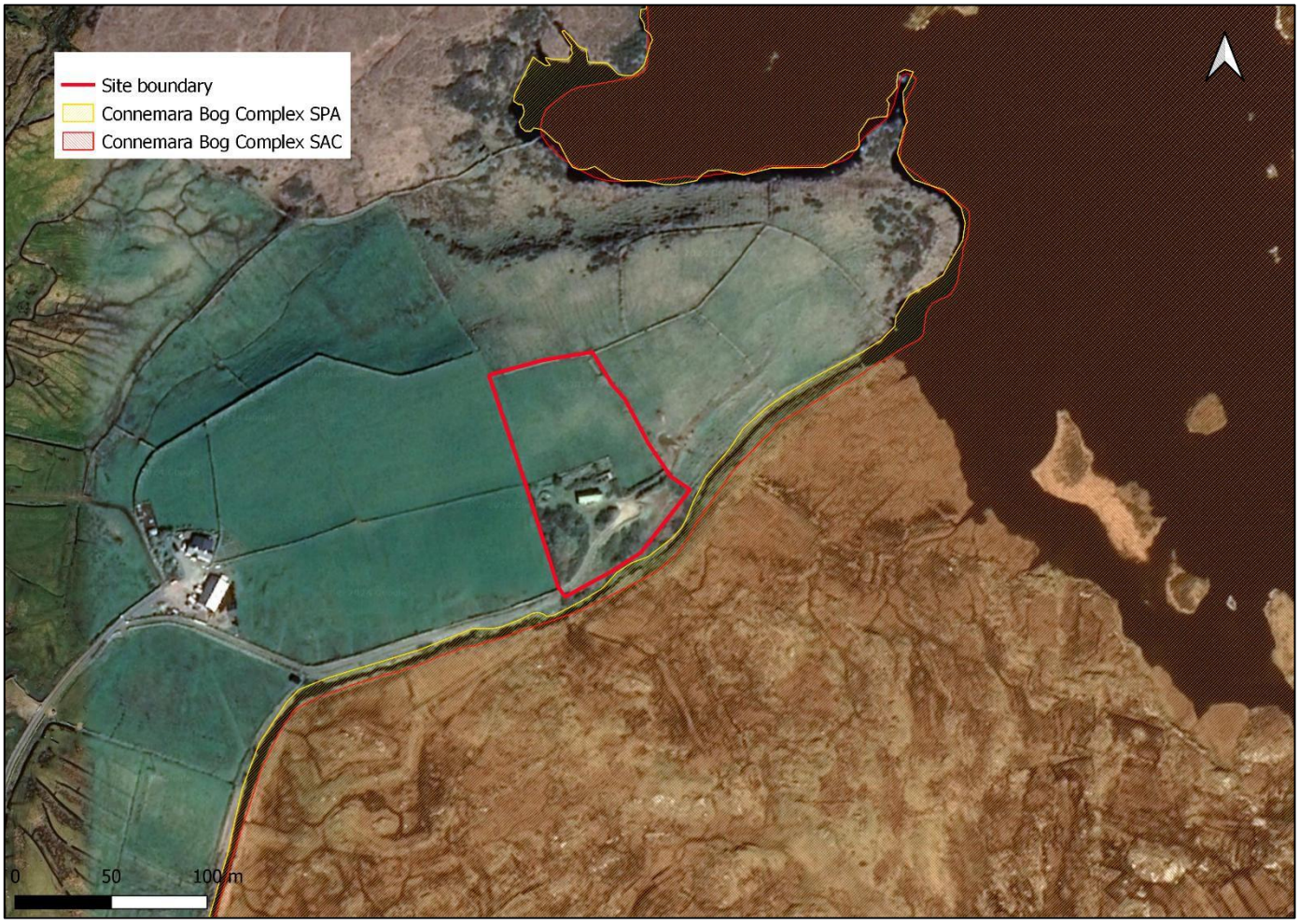
When assessing effects on wildlife habitats and populations we must consider light, noise and hydrological connections. National guidance (DEHLG 2009) states that "Although a distance of 15km is currently recommended in the case of plans…[however] for projects, the distance could be much less than 15km, and in some cases less than 100m, but this must be evaluated on a case-by-case basis" Thus the Zone of Influence requires to be defined for each project.

When defining the zone of influence, it is important to consider;

- Location of Natura 2000 sites
- The area extent to which downstream habitats could be polluted

- To what degree could noise and light impact ecological receptors

Due to the size and scale of the proposed project, in conjunction with its proximity and relevant connectivity to ecological receptors, the only sites which are recorded as being within the likely Zone of Impact are the Connemara Bog Complex SAC [site code: 002034] and the Connemara Bog Complex SPA [site code:004181].



Map 4: Location of proposed development site in relation to Natura 2000 sites being considered further

3.0 Description of the Natura 2000 Sites

The Habitats Directive states "Any plan or project not directly connected 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 implication for the site in view of the sites conservation objectives …the competent national authorities shall agree to the plan or project only having ascertained that it will not adversely affect the integrity of the site…" The conservation objectives form the basis of the Appropriate Assessment as it is against these objectives that the assessment is made.

The primary objective of the Habitats Directive is the upkeep of biodiversity through the conservation, maintenance and when appropriate, restoration of natural habitats and associated flora and fauna populations which have been deemed of community interest. Each Natura 2000 site has Conservation Objectives which have been set out on a case-by-case basis by competent authority for the management of SACs and SPAs, the National Parks and Wildlife Service (NPWS). European and national legislations enforce the proper maintenance of habitats and species in the Natura 2000 network in light of the conservation objectives, to ensure favourable conservation status at a national level.

3.1 Connemara Bog Complex SAC

Table 2: Conservation Objectives for Connemara Bog Complex SAC (Site Code 002034)

Code	Habitats/Species	Restore/Maintain
1150	Costal lagoons	To maintain the favourable conservation condition
1170	Reefs	To maintain the favourable conservation condition
3110	Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*)	To maintain the favourable conservation condition
3130	Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoeto-Nanojuncetea*	To maintain the favourable conservation condition
3160	Natural dystrophic lakes and ponds	To maintain the favourable conservation condition

3260		Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho- Batrachion* vegetation	To maintain the favourable conservation condition
4010		Northern Atlantic wet heaths with *Erica tetralix*	To restore the favourable conservation condition
4030		European dry heaths	To restore the favourable conservation condition
6410		Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)	To maintain the favourable conservation condition
7130		Blanket bogs (* if active bog)	To restore the favourable conservation condition
7140		Transition mires and quaking bogs	To restore the favourable conservation condition
7150		Depressions on peat substrates of the Rhynchosporion	To restore the favourable conservation condition
7230		Alkaline fens	To restore the favourable conservation condition

91A0		Old sessile oak woods with Ilex and Blechnum in the British Isles	To maintain the favourable conservation condition
1065		Marsh Fritillary *(Euphydryas aurinia)*	To maintain the favourable conservation condition
1106		Salmon (*Salmo salar)*	To restore the favourable conservation condition

1355	Otter *Lutra lutra*	To maintain the favourable conservation condition
1833	Slender Naiad *Najas flexilis*	To maintain the favourable conservation condition

3.2 Connemara Bog Complex SPA

Table 3: Conservation Objectives for Connemara Bog Complex SPA (Site Code 004181)

Code	Species	Restore/Maintain
A017	Cormorant (*Phalacrocorax carbo*)	To restore the favourable conservation condition
A098	Merlin (*Falco columbarius*)	To restore the favourable conservation condition
A140	Golden Plover (*Pluvialis apricaria*)	To restore the favourable conservation condition
A182	Common Gull (*Larus canus*)	To maintain the favourable conservation condition

In the event that significant negative effects on the conservation objectives of the Natura 2000 site are anticipated, the conservation condition of qualifying interests should be taken into account, and it should be noted that to “restore” favourable conservation condition is more difficult than to “maintain”.

4.0 Receiving Environment

When assessing the receiving environment, it is important to consider which classifications of habitats are present on the proposed site, as well as hydrology in the surrounding area and the presence of invasive species.

4.1 Habitats

A walkover survey was carried out to classify the habitats present on site. The habitats recorded are classified in accordance with ‘A Guide to Habitats in Ireland’ (Fossitt, 2000), which designates habitat classifications based on the plant species present and management history of the area.

Map 4: Habitat map of proposed development site

The area surrounding the existing dwelling and shed is categorised as Improved Agricultural Grassland GA1. This area, along with the northern field, is periodically grazed by sheep. Species observed in this area include Orchard grass (*Dactylis glomerata*), White clover (*Trifolium repens*), Red clover (*Trifolium pratense*), Red fescue (*Festuca rubra*), Yorkshire fog (*Holcus lanatus*), Meadow-grass (*Poa trivialis*), Garden sorrel (Rumex acetosa), Ribwort plantain (*Plantago lanceolata*), Daisy (*Bellis perennis*), Creeping thistle (*Cirsium arvense*), Dandelion (*Taraxacum officinale*), Germander speedwell (*Veronica chamaedrys*), Silverweed (*Argentina anserina*), Cleavers (*Galium aparine*), Herb Robert (*Geranium robertianum*), Nettle (*Urtica dioica*), Yellow flag Iris (Iris pseudacorus), Creeping buttercup (Ranunculus repens), Lesser trefoil (*Trifolium dubium*), Common rush (Juncus effusus), Autumn hawkbit (*Scorzoneroides autumnalis*), Bull thistle (*Cirsium vulgare*).

This habitat (Improved Agricultural Grassland GA1) was also recorded in the field north of the dwelling and has lower species diversity. Species include Crested dogstail (*Cynocurus cristatus*), Garden sorrel (Rumex acestosa), Red clover (*Trifolium pratense*), Daisy (*Pellis perennis*), Sweet vernal grass (*Anthoxanthum odoratum*), Common rush (*Juncus effusus*), Silverweed (*Argentina anserina*).
Some cows (no. 5-10) currently graze this area.

The majority of the scrub habitat found within the proposed development site can be described as Ornamental/ Non-native Scrub WS3, planted during previous inhabitation of the site. Fuchsia (*Fuchsia magellanica*) is the primary occupier of this area. Other species include Plum (*Prunus domestica*), Wild privet (Ligustrum vulgare) Blackthorn (*Prunus spinosa*), Ivy (*Hedera helix*), Montbretia (*Crocosmia X crocosmiiflora)*.

The scrub which adjoins the river in the most southern part of the site includes more native elements such as Willow (*Salix cinerea*), Ash (*Sorbus aucuparia*), Blackberry (*Rubus ulmifolius*), Brackenfern (*Pteridium aquilinum*). Non-native elements include Fuchsia (*Fuchsia magellanica*) and Sycamore (*Acer pseudoplatanus*). This area can be described as native Scrub WS1, forming mosaics with Ornamental/Non-native scrub WS3.

The semi ruinous dwelling is recorded as Buildings and Artificial Surfaces BL3 and the shed to the rear of the house is regarded as Stonewalls and Other stonework BL1 because of the less intact nature of the building.

The road leading up to the dwelling is categorised as Exposed Sand, Gravel or Till ED1. Here there are small patches of plants such as Yorkshire fog (Holcus lanatus),

Common birds-foot trefoil (*Lotus corniculatus*), and Daisy (*Bellis perennis*), Dandelion (*Taraxacum officinalis*).

No drainage ditches exist on site but an Eroding/lowland River FW1 (River Callow EPA code: IE_WE_31C250230) exists just beyond the southern site boundaries and flows in a south- westerly direction from Maumeen Lough with lies approx. 0.46 km from the proposed development site, to the shore (approx. 1.3km) and is within the Connemara Bog Complex SAC.

The primary land use in the area is agricultural with few residential developments.

4.2 Invasive Species

No invasive species listed in the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations (S.I. 477 of 2011) were documented during the survey conducted in June. (E.g. Rhododendron (*Rhododendrum ponticum*), Japanese knotweed (*Fallopia japonica*).)

Non-native ornamentals recorded during the site survey include Montbretia (*Montbretia crocosmia*). This is a low-risk invasive species according to the National Biodiversity Data Centre (NBDC).

Mitigation measures relating to invasive species are outlined in Section 6.2.13.

4.3 Hydrology

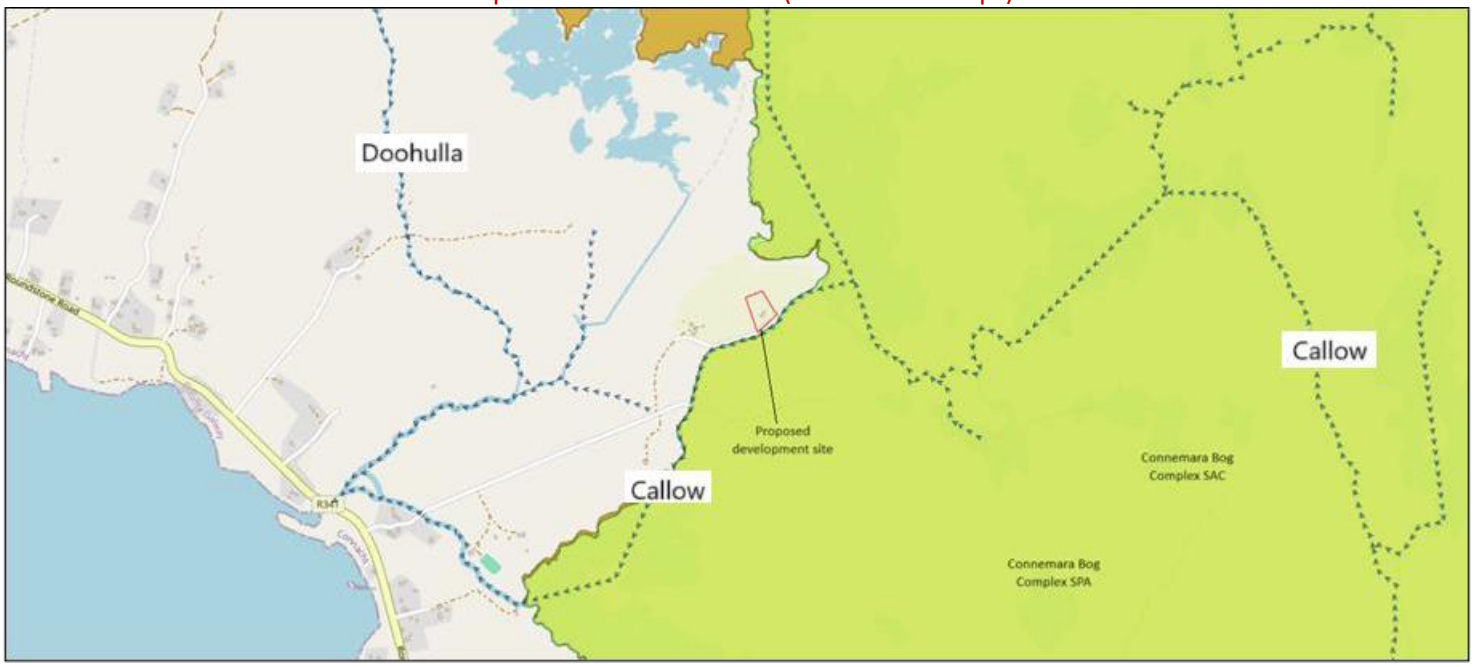
Hydrology assumes a critical role in the ecological evaluation of a site. Water pollution is one of the main factors responsible for indirect impacts on Natura 2000 sites through the migration of pollution (sediments and hydrocarbons) downstream where they come into contact with conservation objectives.

Water quality information and individual waterbody status for all river districts and coastal waters in Ireland can be accessed through the online EPA map viewer. This map viewer was consulted on 10th April 2025.

The proposed development site is located in the hydrological sub-catchment Recess_SC_020. The WFD coastal water bodies risk assessed the coastal waters (IE_WE_010_0000) Aran Islands, Galway Bay Connemara "Review". The overall status of this waterbody is described as 'high' ecological status in the WFD monitoring program (2016-2021).

The site is located in the Spiddal groundwater catchment and has been assigned a status of 'not at risk' in the Water Framework Directive (WFD) ground waterbody approved risk. The groundwater status of this catchment has been assigned as 'good' status in the WFD groundwater monitoring program (2016-2021).

Map 6: River flow direction (Source: EPA Maps)



4.4 Fauna

4.4.1 Birds

4.4.1.1 *Connemara Bog Complex SPA*

SCI species for this site include:

- A017 Cormorant (*Phalacrocorax carbo*)
- A098 Merlin (*Falco columbarius*)
- A140 Golden Plover (*Pluvialis apricaria*)
- A182 Common Gull (*Larus canus*)

The Connemara Bog Complex SPA borders the proposed site to the south and is therefore within the core foraging range of 4km for the Golden Plover (*Pluvialis apricaria*), 5km for the Merlin (*Falco columbarius*), 50km for the Common Gull (*Larus canus*) and 35km for the Cormorant (*Phalacrocorax carbo*). [A017] Cormorant (*Phalacrocorax carbo*)

This species forages in freshwater and marine environments. The closest breeding colony to the development site is located approximately 6km northeast of the proposed development site.

[A098] Merlin (*Falco columbarius*)

This species breeds on lake islands and forage over moors and heathland, peat bogs and semi-natural grasslands. The nearest island that has the potential to support breeding merlin is located 200m from the site on Emlaghkeeragh Lough.

[A140] Golden Plover (*Pluvialis apricaria*)

This species are ground nesting birds that breed in open habitats such as blanket bog and other peatland habitats. The closest suitable nesting habitat is located 20m south of the site. Golden Plover forage at ground-level in a range of habitats including grasslands, lakeshores and other wetlands.

[A182] Common Gull (Larus canus)

This species breeds on lake islands and forage in terrestrial, freshwater and marine habitats in the broader area. The nearest islands which have the potential to support breeding gulls are located 200m from the proposed site in Emlaghkeeragh Lough.

Although a range of breeding and foraging habitats exist in close proximity to the proposed site, the proposed works, of the intended size and scale are unlikely to result in disturbance levels which would significantly impact the above SCI species. The scrub areas which are to be retained within the site serve as a biological barrier between the construction works and the SPA and serve as natural noise mitigation. Furthermore, the works already completed which are confined to: 1) The reinstatement of a collapsed roof and making good of an existing chimney, 2) The unblocking of windows opes and replacement of timber framed windows on the front elevation, 3) CCTV cameras on the building to be in place for a temporary period; are considered to be minimal in nature. The duration of the works already completed is estimated to be a few weeks, collectively, at most. Impacts are deemed to be short-term and insignificant.

No Cormorant (*Phalacrocorax carbo*), Golden Plover (*Pluvialis apricaria*), Merlin (*Falco columbarius*) or Common Gull (*Lanus canus*) were observed using the habitats within or adjacent to the site. However, with the precautionary principle in mind, mitigation for controlling noise levels during the future construction period is proposed in Section 6.

All bird species recorded during both the site visits are recorded in Table 3. Nine bird species were observed in total, two of which are of Amber conservation status and seven of which are green-listed and are regarded as common Irish bird species. No Annex I species were observed to be utilising habitats within the site during the site visit.

Table 3: Bird species observed on site

Species	Observed	Date	Conservation Status
Robin (*Erithacus rubecula*)	On site	07/06/24, 12/03/25	Green listed
Great Tit (*Parus major*)	On site	12/03/25	Green listed
Blue Tit (*Parus parus*)	On site	12/03/25	Green listed
Blackbird (*Turdus merula*)	On site	07/06/24, 12/03/25	Green listed
Eurasian skylark (*Alauda arvensis*)	Flying over	07/06/24	Amber listed

Hooded crow (*Corvus cornix*)	Flying over	07/06/24, 12/03/25	Green listed
Dunnock (*Prunella modularis*)	On site	07/06/24	Green listed
Eurasian wren (*Troglodytes troglodytes*)	On site	07/06/24, 12/03/25	Green listed
Eurasian Linnet (*Linaria cannabina*)	On site	07/06/24, 12/03/25	Amber listed
Magpie (*Pica pica*)	Flying over	12/03/25	Green listed

4.4.2 Non-volant mammals

A walkover survey was carried out to assess the presence of a range of protected animal species, as well as their associated habitats. The results of the walkover survey concluded that no significant faunal species or habitat was recorded.

An otter survey was undertaken with the goal of assessing habitats on site for the suitability of otters. The watercourse which adjoins the site is identified as potential foraging/commuting habitat for otter. The site, including the adjoining watercourse, was searched for evidence of otters including holts, couches, spraints or tracks. No signs of otter were observed. However, it is presumed that otters may use the watercourse for commuting/foraging purposes. Mitigation is proposed in Section 6.

A badger (Meles meles) survey was performed during the field survey which was in compliance with TII/NRA (2009) guidelines (Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes). The site was searched for sets, latrines, shuffle holes, and badger paths and prints. The survey concluded that no evidence of badgers was recorded within the proposed development site.

4.4.3 Other species

The site was searched for evidence of species which are protected under the Irish Wildlife Act 1976-2018, including Irish hare, Irish stoat and pygmy shrew. These species are widespread in Ireland and are likely to be found in the broader area. However, no signs of species were located within the site boundaries.

5.0 Impact prediction and assessment

Following a description of the proposed project and of the nearby Natura 2000 sites, an assessment of possible impacts can be carried out. This is in compliance with the "Assessment of plans and projects significantly affecting Natura 2000 sites- Methodology guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, European Commission, 2002".

5.1 Proximity and relevance of Qualifying Interests of Connemara Bog Complex SAC (site code: 002934) to the proposed development site

Code	Habitats	Proximity
1150	Costal lagoons	6.35km north. No hydrological pathways. No impact predicted.
1170	Reefs	6.54km north. No hydrological pathways. No impact predicted.
3110	Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*)	2.51m north at Lough Fadda. No hydrological links. No impact predicted.
3130	Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoeto-Nanojuncetea*	0.46km south at Maumeen Lough. The river which borders the site to the south is identified as a hydrological connection to the lake. Complete source-pathway-receptor link identified. Mitigation is required.
3160	Natural dystrophic lakes and ponds	1.2km southeast. No hydrological pathways. No impact predicted.
3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and Callitricho-Batrachion vegetation	Not mapped by NPWS. The river to the south of the site has the potential to qualify for this habitat. Complete source- pathway-receptor link identified. Mitigation is proposed with the precautionary principle in mind.
4010	Northern Atlantic wet heaths with (*Erica tetralix*)	Not mapped by NPWS. Potentially within 30m south of the proposed development site. However, a river exists separating the potential habitat from the proposed construction area. No impact predicted.

4030	European dry heaths	Not mapped by NPWS. Potentially within 30m south of the proposed development site. However, a river exists separating the potential habitat from the proposed construction area. No impact predicted.
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)	Not mapped by NPWS. Potentially within 30m south of the proposed development site. However, a river exists separating the potential habitat from the proposed construction area. No impact predicted.
7130	Blanket bogs (* if active bog)	Not mapped by NPWS. Potentially within 50m of the proposed development site to the south. However, a river exists separating the potential habitat from the proposed construction area. No direct or indirect impacts are predicted. However, cumulatively speaking, inhabitation of the prosed dwelling and the subsequent increase in population in the area may contribute to fragmentation or loss of this habitat due to harvesting of turf for heating. Complete source-pathway-receptor link identified. Mitigation is proposed.
7140	Transition mires and quaking bogs	Not mapped by NPWS. Potentially within 50m to the south. However, a river exists separating the potential habitat from the proposed construction area. No impact predicted
7150	Depressions on peat substrates of the *Rhynchosporion*	Not mapped by NPWS. Potentially within 50m to the south. However, a river exists separating the potential habitat from the proposed construction area. No direct or indirect impacts are predicted to result from the proposed project.

		However, cumulatively speaking, inhabitation of the prosed dwelling and the subsequent increase in population in the area may contribute to fragmentation or loss of this habitat due to harvesting of turf for heating. Complete source-pathway-receptor link identified. Mitigation is proposed.
7230	Alkaline fens	Not mapped by NPWS. Potentially within 50m to the south. However, a river exists separating the potential habitat from the proposed construction area. No direct or indirect impacts are predicted to result from the proposed project. However, cumulatively speaking, inhabitation of the prosed dwelling and the subsequent increase in population in the area may contribute to fragmentation or loss of this habitat due to harvesting of turf for heating. Complete source-pathway-receptor link identified. Mitigation is proposed.
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	10.83km northeast (NSNW: 1602). Removed from development site. No impact predicted.
1065	Marsh Fritillary *Euphydryas aurinia*	Not mapped by NPSW. This species requires the presence of Devil's bit Scabious (*Succissa pratensis*) which is recorded in close proximity to the existing cottage. However, the habitat itself is not prime conditioning for the species. Colonies can be found in a variety of locations including dry calcareous grassland, wet heath, degraded bogs, transition mires and fens of up to 300m (Regan et al. 2010). *Succissa pratensis* is

		common in Connemara and in relatively low abundance on site. This is not considered significant.
1106	Salmon *Salmo salar*	Not mapped by NPWS. Potentially present in oligotrophic lake Maumeen Lough which lies 0.46km south of the proposed development. Complete source-pathway-receptor link identified. With the precautionary principle in mind, mitigation is proposed.
1355	Otter *Lutra lutra*	The river to the south of the site has the potential to be used for otters for foraging and commuting purposes. Complete source-pathway-receptor link identified. With the precautionary principle in mind, mitigation is proposed.
1833	Slender Naiad *Najas flexilis*	0.46km south at Maumeen Lough. The river which borders the site to the south is identified as a hydrological connection to the lake. Mitigation is required. Complete source-pathway-receptor link identified.

The identified pathways for effects on Qualifying Interests of this site are as follows: Deterioration of water quality/ habitat quality during the construction and operational phase of the proposed development, resulting in pollution to surface waters, adversely impacting the aquatic influenced QI species within the SAC, in the absence of mitigation.

5.2 Impacts on Habitats

The habitats for which the proposed development has the potential to impact are:

[3130] Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea+-

[3260] Water courses of plain to montane levels with the *Ranunculion fluitantis* and Callitricho-Batrachion vegetation.

The construction of the project could result in point and diffuse adverse changes in water quality. Adverse changes arise from silt-laden run-off, the use of cement and hydrocarbons and the use of other potentially-polluting chemicals or materials during construction. Such adverse changes could result in changes to the habitat and water quality downstream of the polluting event(s) which could indirectly result in a change of integrity on at least a temporary basis. It is considered that the use of good construction practise and both standard and site-specific mitigation measures will avoid and reduce the likelihood of such adverse changes in water quality within the Connemara Bog Complex SAC, downstream of construction.

During the operational phase of the project, the retained scrub habitat which adjoins the river will act as a buffer zone which will serve as a physical barrier to prevent run-off entering the stream. Therefore, there are no direct and / or indirect adverse effects anticipated during the operational phase of the project. Subject to the application of mitigation measures, the requirement for identified above, it is considered that the project will not impact on the integrity of the [3130] or [3260] habitat within the Connemara Bog Complex SAC either during construction or operation.

See Section 5.4 and 5.5 below for assessment of cumulative impacts on peat habitats:

[7130] Blanket bogs (* if active bog)

[7150] Depressions on peat substrates of the Rhynchosporion [7230]Alkaline fens

5.3 Impacts on Species

The habitats for which the proposed development has the potential to impact are: [1106] Salmon

(*Salmo salar*)

[1355] Otter (*Lutra lutra*)

[1833] Slender Naiad (*Najas flexilis*)

The construction of the project could result in point and diffuses in adverse changes in water quality. Adverse changes arise from silt-laden run-off, the use of cement and hydrocarbons and the use of other potentially polluting chemicals or materials during construction. Such adverse changes could result in changes to water quality downstream of the polluting event(s) which could indirectly result in a change of integrity of the conservation objectives of the SAC on at least a temporary basis. It is considered that the use of good construction practise and both standard and site-specific mitigation measures will avoid and reduce the likelihood of such adverse changes in water quality within the Connemara Bog Complex SAC, downstream of construction.

Activities related to the future construction of the development which include excavation, building and associated movement of machinery and site personnel also have the potential to impose a degree of localised disturbance on Otter [1355] which may be using the stream for foraging/commuting purposes.

The scrub habitat in the southern portion of the site is to be retained. No work will be carried out in this area. This will serve to minimise disturbance to otters during construction, as well as preventing site materials from entering the watercourse. Silt trap fencing will be erected prior to construction and as per the instructions in Section 6.3.3. See Section 6 for a full list of proposed mitigation measures.

Similarly, during the operational phase of the project, the retained scrub habitat which adjoins the river will act as a buffer zone which will serve as a physical barrier to minimise disturbance to otter and prevent run-off entering the stream, thus protecting downstream ecological receptors. Therefore, there are no direct and / or indirect adverse effects anticipated during the operational phase of the project. Subject to the application of mitigation measures, the requirement for identified above, it is considered that the project will not impact on the integrity of the [1106] or [1355] or [1833] QI species with respect to the Connemara Bog Complex SAC

5.4 Cumulative Impacts

Cumulative impacts are alterations to the environment arising from the combined impact of past, present and future anthropogenic activities and natural processes. When examining cumulative impacts, it is important to look at activities causing disturbance or pollution to the same Natura 2000 sites.
Pressures on the ecosystem can be listed and evaluated on the basis of pressure positive, negative

or neutral on the designated sites that are under consideration for the proposed project.

Plans/Activities in the Area	Relevance/Description
Galway County Development plan 2022-2028	National Heritage/Biodiversity NHB1- Natural Heritage and Biodiversity of Designated Sites, Habitats and Species. Protect and where possible enhance the natural heritage sites designated under EU Legislation and National Legislation (Habitats Directive, Birds Directive, European Communities (Birds and Natural Habitats) Regulations 2011 and Wildlife Acts) and extend to any additions or alterations to sites that may occur during the lifetime of this plan. Protect and, where possible, enhance the plant and animal species and their habitats that have been identified under European legislation (Habitats and Birds Directive) and protected under national Legislation (European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011), Wildlife Acts 1976-2010 and the Flora Protection Order (SI 94 of 1999). Support the protection, conservation and enhancement of natural heritage and biodiversity, including the protection of the integrity of European sites, that form part of the Natura 2000 network, the protection of Natural Heritage Areas, proposed Natural Heritage Areas, Ramsar Sites, Nature Reserves, Wild Fowl Sanctuaries (and other designated sites including any future designations) and the promotion of the development of a green/ ecological network. NHB2- European Sites and Appropriate Assessment. To implement Article 6 of the Habitats Directive and to ensure that Appropriate Assessment is carried out in relation to works, plans and projects likely to impact on European sites (SACs and SPAs), whether directly or indirectly or in combination with any other plan(s) or project(s). All assessments must be in compliance with

	the European Communities (Birds and Natural Habitats) Regulations 2011. All such projects and plans will also be required to comply with statutory Environmental Impact Assessment requirements where relevant. NHB 3 – Protection of European Sites. No plans, programs, or projects etc. giving rise to significant cumulative, direct, indirect or secondary impacts on European sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this Plan (either individually or in combination with other plans, programs, etc. or projects.* NHB4 - Ecological Appraisal of Biodiversity. Ensure, where appropriate, the protection and conservation of areas, sites, species and ecological/networks of biodiversity value outside designated sites. Where appropriate requires an ecological appraisal, for development not directly connected with or necessary to the management of European Sites, or a proposed European Site and which are likely to have significant effects on that site either individually or cumulatively NHB5 - Ecological Connectivity and Corridors Support the protection and enhancement of biodiversity and ecological connectivity in non-designated sites, including woodlands, trees, hedgerows, semi-natural grasslands, rivers, streams, natural springs, wetlands, stonewalls, geological and geo-morphological systems, other landscape features and associated wildlife areas where these form part of the ecological network and/or may be considered as ecological corridors in the context of Article 10 of the Habitats Directive.

	NHB9 - Protection of Bats and Bats Habitats. Seek to protect bats and their roosts, their feeding areas, flight paths and commuting routes. Ensure that development proposals in areas which are potentially important for bats, including areas of woodland, linear features such as hedgerows, stonewalls, watercourses and associated riparian vegetation which may provide migratory/foraging uses shall be subject to suitable assessment for potential impacts on bats. This will include an assessment of the cumulative loss of habitat or the impact on bat populations and activity in the area and may include a specific bat survey. Assessments shall be carried out by a suitably qualified professional and where development is likely to result in significant adverse effects on bat populations or activity in the area, development will be prohibited or require mitigation and/or compensatory measures, as appropriate. The impact of lighting on bats and their roosts and the lighting up of objects of cultural heritage must be adequately assessed in relation to new developments and the upgrading of existing lighting systems. Water Objectives WR 1- Water Resources. Protect the water resources in the plan area, including rivers, streams, lakes, wetlands, springs, turloughs, surface water and groundwater quality, as well as surface waters, aquatic and wetland habitats and freshwater and water dependant species in accordance with the requirements and guidance in the EU Water Framework Directive 2000 (2000/60/EC), the European Union (Water Policy) Regulations 2003 (as amended), the River Basin District Management Plan 2018 – 2021 and other relevant EU Directives, including associated national legislation and policy guidance (including any superseding versions of same) and also

Northern & Western Regional Assembly Regional Spatial and Economic Strategy 2020 2032 (RSES)	have regard to the Freshwater Pearl Mussel Sub-Basin Management Plans. WR 2 - River Basin Management Plans. It is a policy objective of the Planning Authority to implement the programme of measures developed by the River Basin District Projects under the Water Framework Directive in relation to: Surface and groundwater interaction, Dangerous substances, Hydro-morphology, Forestry, On site wastewater treatment systems, Municipal and industrial discharges, Urban pressures, Abstractions. RPO 5.4 Encourage the prioritisation of Site-Specific Conservation Objectives (SSCO) for all sites of Conservation Value, designated in EU Directive (i.e., SACs, SPAs) to integrate with the development objectives of this Strategy. RPO 5.5 Ensure efficient and sustainable use of all our natural resources, including inland waterways, peatlands, and forests in a manner which ensures a healthy society a clean environment and there is no net contribution to biodiversity loss arising from development supported in this strategy. Conserve and protect designated areas and natural heritage areas. Conserve and protect European sites and their integrity. RPO 5.7 Ensure that all plans, projects, and activities requiring consent arising from the RSES are subject to the relevant environmental assessment requirements including SEA, EIA, and AA as appropriate.
Planning applications in the area	A search was conducted on the Galway County Council website of local planning applications in the last 5 years which gave the following results: The development will consist of: a) the restoration of existing single storey cottage including elevation modifications (existing floor area 55 sqm), b) the provision of single storey extensions to side and rear (157 sqm). The development will include a new wastewater treatment system and new

	vehicular entrance from the existing private lane, along with associated site works. The application is accompanied by a Natura Impact Statement (NIS). Gross floor space of proposed works:157 sqm. (Planning Ref: 212242). refurbishment and upgrading works [including (where necessary) replacement of existing poles along the existing overhead electricity line, minor ground works e.g. replacement or installation of stays, and maintenance or improvement works]; and all associated ancillary works including the provision of temporary accessways. Replacement poles will be constructed at, or immediately adjacent to, the existing structures that they will replace. Replacement poles will have a maximum height of 12m abo (Planning Ref: 2360507).
Housing developments	A dispersed housing pattern can be observed in the local area.
Agriculture	Agricultural practices in the local area primarily consist of low-intensity cattle, sheep and pony grazing and associated activities such as herbicide and pesticide use.
Tourism	The site is in close proximity to the Wild Atlantic Way. Tourism has the potential to put pressure on the catchment due to increased water usage.
Peat cutting	Turf cutting within 500m south of the proposed development site incurring degradation, fragmentation and loss of protected bog habitat.

Table 6: Cumulative assessment

5.5 Cumulative assessment conclusion

Following a comprehensive assessment under Article 6(3) of the Habitats Directive and Regulation 42 of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended), it is concluded that the proposed development, including its construction and ongoing use as a dwelling house, will not result in any significant adverse effects on the Connemara Bog Complex SAC (Site Code 002034), its Qualifying Interests (QIs), or the integrity of the site.

The Connemara Bog Complex SAC is designated for a range of sensitive habitats and species, including active blanket bogs (7130), transition mires and quaking bogs (7140), depressions on peat substrates of the *Rhynchosporion* (7150), oligotrophic waters (3110), and watercourses with *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation (3260), as well as species such as otter (*Lutra lutra*, 1355), salmon (*Salmo salar*, 1106), and marsh fritillary (*Euphydryas aurinia*, 1065). The conservation objectives for these QIs require that habitat area, structure, function, and supporting processes (such as hydrology and water quality) are maintained or restored to favourable condition.

The proposed site lies outside the SAC boundary and has no direct hydrological, physical, or ecological linkages to any of the qualifying habitats or species. The surrounding environment is characterised by low-intensity agriculture, with limited nutrient inputs due to poor-quality soils. As such, background pressures are modest, and the site does not contribute meaningfully to any of the identified threats to the SAC. The principal existing pressures on the Connemara Bog Complex SAC are water pollution, peat extraction, and habitat fragmentation associated with dispersed housing and holiday homes. The proposed development has been designed specifically to avoid contributing to any of these pressures, both during construction and throughout its continued occupation.

No peat extraction or peat use will be undertaken within or adjacent to the SAC for the purposes of heating or maintaining the dwelling. The proposed wastewater treatment system has been designed and will be installed in accordance with the Environmental Protection Agency (EPA) Code of Practice for Domestic Wastewater Treatment Systems (2021). The system, including a certified treatment plant and an appropriately designed polishing filter, will ensure full and effective treatment of all domestic effluent and surface water before discharge. The treatment system will be maintained on an ongoing basis, in compliance with EPA and manufacturer requirements, ensuring sustained protection of local water quality throughout the lifetime of the dwelling.

A Construction Environmental Management Plan (CEMP) will be implemented to control runoff, sediment, and pollutants during construction. Once operational, the dwelling will not generate emissions, discharges, or activities capable of affecting hydrology, groundwater quality, or habitat structure within the SAC. Routine domestic use will be limited to a single household and will not increase nutrient loading, water abstraction, or disturbance to local flora or fauna. Accordingly, the continued occupation and maintenance of the dwelling, including all wastewater and surface water management measures, will not have any potential to cause direct, indirect, or secondary impacts on the Connemara Bog Complex SAC or its QIs.

An in-combination assessment has also been undertaken with regard to other existing and permitted developments in the locality. The low-intensity agricultural land use and the dispersed settlement pattern in this area mean that cumulative pressures on the SAC are limited. Given the very small scale of the proposed development, its full compliance with EPA wastewater standards, and its prohibition of peat cutting, there is no potential for the project to contribute to any cumulative or in-combination effects.

In summary, the assessment confirms beyond reasonable scientific doubt that the proposed dwelling—both during construction and during its long-term use and occupation—will not adversely affect the integrity of the Connemara Bog Complex SAC or any other Natura 2000 site. The proposal will not result in any loss, degradation, disturbance, or alteration of qualifying habitats or species, nor will it interfere with the ecological or hydrological processes supporting them. The ongoing use of the property as a dwelling will remain environmentally neutral and will not introduce any new or sustained source of impact to the SAC or its conservation objectives.

Accordingly, it is concluded that the proposed development, individually and in combination with other plans or projects, will have no significant effect on the Connemara Bog Complex SAC or its Qualifying Interests, either during construction or throughout its continued use as a dwelling house.

6.0 Mitigation

Once potential adverse effects on Natura 2000 sites have been identified through the

impact assessment process, the development and refinement of appropriate mitigation measures can commence. Mitigation, in this context, refers to the specific, targeted actions designed to avoid, reduce, or remedy predicted adverse effects on the qualifying interests (QIs) and special conservation interests (SCIs) of a designated site. These measures must be directly linked to the identified impact pathways and must be sufficiently detailed, practical, and enforceable to ensure their effectiveness throughout the construction, operational, and, where relevant, decommissioning phases of the project.

The implementation of mitigation measures represents a critical stage in the Appropriate Assessment (AA) process, as established under Article 6(3) of the EU Habitats Directive (92/43/EEC). The purpose of these measures is to ensure that any identified adverse effects are either fully avoided or reduced to a level where they no longer have the potential to affect the integrity of a Natura 2000 site, having regard to its structure, function, and conservation objectives.

A project may only proceed where, following the incorporation of mitigation, it can be concluded beyond reasonable scientific doubt that the proposed development will not result in significant adverse effects on the integrity of any Natura 2000 site, either alone or in combination with other plans or projects. In practice, this requires that mitigation measures are not only technically feasible but also effectively implemented, monitored, and maintained over time, under the supervision of a suitably qualified ecologist or environmental manager.

Mitigation should be distinguished from compensatory measures, which are only considered under Article 6(4) of the Directive in circumstances where residual adverse effects cannot be avoided. In the case of this project, the emphasis remains firmly on preventive and protective mitigation designed to ensure full compliance with the precautionary principle and the conservation objectives of the relevant Natura 2000 network sites.

Mitigation methods have been divided into three classifications and are as follows:

1. Avoid
2. Manage
3. Physical mitigation

6.1 Avoid

Recommendations for this site include:

6.1.1 Introduction of invasive species on site

- All gravels/surface fill to be acquired from certified invasive species free sources to minimise the chances of site contamination.

6.1.2 Unnecessary disturbance to wildlife

- Construction should only be carried out during daylight hours to reduce risk of disturbance to Otter [1355].
- No work should take place within the area of scrub in the southern section of the site, or within 10m of the southern development boundary. This zone of exclusion will act as a buffer to minimise disturbance to otters.

6.1.3 Peat cutting

- Inhabitation of the site should not contribute to any additional turf cutting within the Connemara Bogs SAC for the purposes of heating the proposed dwelling house

6.2 Management

In respect of development in areas of ecological importance, proper site management is a key aspect of maintaining the integrity of local Natura 2000 sites. Ensuring correct procedure at all stages of development can greatly limit or eradicate impacts on sites of European importance.

6.2.1 Ecological Clerk Works

An Environmental Site Officer/Ecologist will be designated by the Contractor. It is the duty of the Environmental Site Officer to engage and liaise with parties which include the Galway County Council, the Environment Agency and also with the Construction manager, while ensuring the implementation of all mitigation and as part of the monitoring process. This will be achieved through observations made throughout all stages of the building. Any and all deviations from the mitigation measures outlined in this NIS will be logged in a logbook, in conjunction with the action taken and the general conditions at the time.
Following identification of issues, the Applicant will be notified of any such deviations and associated corrective measures.

6.2.2 Site setup

Fenced Work Area: The minimum necessary works area will be fenced off, and no access will be permitted outside this fenced area. All construction activities will be confined within this existing fencing. Access Routes: Access routes will be clearly marked. Access during construction will be strictly regulated to ensure compliance with the designated pathways and minimize disturbance outside the fenced area.

6.2.3 Suspended Solids Pollution

The following measures for erosion and sediment control shall be adhered to by the Contractor appointed to undertake the works and implemented in full. These measures will be implemented as required to restrict release of suspended solids from entering water courses directly within or associated via downstream connectivity to the identified European sites.

· There will be no direct discharge of surface water from any element of the works without suitable attenuation and treatment.

· Silt fences, silt traps or settlement ponds shall be provided for the protection of the watercourse during construction and will adhere to IFI (2016) Guidelines.

· Silt control measures will be installed correctly and monitored regularly to ensure their effectiveness (EirGrid, 2020).

· The level of suspended solids in any discharges to fisheries waters as a consequence of construction works shall not exceed 25mg/l33 nor result in the deposition of silts on gravels or any element of aquatic flora and fauna (as per IFI (2016) guidelines);

· Excavations for foundations will be carried out so as to minimise sediment runoff (e.g. soil excavation will not be completed during periods of prolonged or heavy rain). Stockpiles within 200m of watercourses will be covered.

· Clearly defined working areas, delineated by temporary protective fencing where required, are essential and will be implemented to ensure there is a sufficiently large buffer zone between the working area and nearby watercourses and to avoid accidental incursion by personnel, materials or equipment. A vegetated buffer zone of 10m shall be implemented where it is possible to further stop sediment and nutrients from entering local watercourses (EirGrid, 2020).

· All works and storing of machinery or materials in the buffer zone will be avoided because compaction of the ground can provide flow paths for sediment and contaminants into local watercourses (EirGrid, 2020);

· Any ground damage to buffer areas will be reported to the EcoW and remediated by, for example rolling, rotavating and re-seeding, or any alternatives as deemed necessary. Where this occurs in semi-natural or natural habitat, consultation with the relevant conservation agency will be undertaken.

· The contractor will monitor weather forecasts. Construction processes that pose a risk of activating sediment laden runoff, such as excavation, will be halted during periods of extreme rainfall. A review of all work practices for periods of heavy rainfall will be undertaken. The magnitude of rainfall which would prompt a review will depend on local conditions.

· Run-off from stockpiles will be collected via a shallow toe drain which will discharge to a settlement pond. Temporary settlement ponds will be designed and sized to adequately attenuate suspended solid run-off from stockpile areas.

· An Environmental Incident and Emergency Response Plan detailing the steps to be undertaken in the event of spillage of chemical, fuel or other hazardous wastes (e.g. concrete) will be in place prior to commencement of construction and will prescribe the process from investigation of the spillage to generating a plan to avoid a future incident occurring; and

6.2.4 Pollution with Other Substances

The following guidelines based on Chilibeck et al., (1992) and NRA (2005) shall be followed for the protection of all watercourses from pollution with other substances:

· The storage of oils, fuel, chemicals, hydraulic fluids etc. will not occur within 100m of all watercourses and will be undertaken in accordance with current best practice for oil storage (Enterprise Ireland, BPGCS005) on an impervious base within a bund and appropriately secured.

· All machinery will be cleaned in advance of work and routinely checked to ensure no leakage of oil or lubricants occurs during the works.

· All fueling of machinery will be undertaken at least 100m set-back from all watercourses.

· Wash down water from exposed aggregate surfaces, cast-in-place concrete and from concrete trucks will be trapped on-site to allow sediment to settle out and reach neutral pH before clarified water is released to the stream or drain system or allowed to percolate into the ground.

· Any spillage of fuels, lubricants or hydraulic oils will be immediately contained,

and the contaminated soil removed from the site and properly disposed of;

- Oil booms and oil soakage pads will be kept on site to deal with any accidental spillage.

- Prior to any instream work, the Contractor will ensure that all construction equipment is mechanically sound to avoid leaks of oil, fuel, hydraulic fluids and grease.

- Fuel, hydraulic oils and lubricants will be stored in designated bunded areas in accordance with established best practice guidelines. Refueling of construction equipment and the addition of hydraulic oil or lubricants to vehicles/equipment will take place in designated bunded areas away from drains and other watercourses.

- The contractor will be required to have available on-site spill kits and hydrocarbon absorbent packs; and

- Spill-kits and hydrocarbon absorbent packs will be stored in the cabin of vehicles working near watercourse and operators must be fully trained in the use of this equipment.

6.2.5 Cement

Concrete and cement are used in foundations. During the installation foundations there is a requirement to have concrete brought to site. If unmanaged, cement and concrete can cause serious pollution to both surface and groundwater due to the highly alkaline and corrosive properties of fresh concrete (EirGrid, 2020).

Where the transportation and use of concrete near water cannot be avoided, (e.g. for in situ stitching), the following control measures will be employed:

- Concrete will be delivered by the supplier to the closest convenient point in order to reduce any unnecessary movement of it within the site.

- Any plant operating close to the water will require special consideration of the transport of concrete from the point of discharge from the mixer to final discharge into the delivery pipe (tremie). Care will be exercised when slewing concrete skips or mobile concrete pumps near surface waters.

- The preferred method for delivering concrete during construction is to dispatch the concrete directly from the concrete truck into the foundation or trench excavation. This allows for the most environmentally suitable management of the concrete as it is contained within the concrete truck until it arrives directly at the point of use.

· This method may not always be possible or desirable in sensitive locations. Concrete may need to be transferred from the concrete truck to a smaller 6T dumper truck where access is difficult.

· There will be no hosing of concrete, cement, grout or similar material spills into surface water bodies/drains. Such spills shall be contained immediately and run off prevented from entering the watercourse.

· Machinery and equipment participating in concreting operations on site will require washout and clean up after use. A dedicated concrete washout area will be provided at the site compound and shall be maintained regularly.

· Washouts will be carried out at designated locations only. These locations will be signposted. The concrete plant and all delivery drivers will be informed of their location with the order information and on arrival on site.

· Washout locations will be provided with appropriate designated, contained impermeable area and treatment facilities including adequately sized settlement tanks.

· Raw or uncured waste concrete will be disposed of by removal from the site; and

· The clear water from the settlement tanks shall be pH corrected prior to discharge (which shall be by means of one of the construction stage settlement facilities) or alternatively disposed of as waste to a licensed facility.

6.2.6 Dust Suppression

Wheel washes will be self-contained systems that do not require discharge of the wastewater to water bodies and water misting or sprays shall be used as required if particularly dusty activities are necessary during dry or windy periods. A speed limit of 20km/h will be introduced for all relevant plant and machinery in and around the site. Site roads shall be cleaned and maintained as appropriate. Hard surface roads shall be swept to remove mud and aggregate materials from their surface while any un-surfaced roads shall be restricted to essential site traffic only. Any site roads with the potential to give rise to dust will be watered, as appropriate, during dry and/or windy conditions (also applies to vehicles delivering material with dust potential). Stockpiling of materials shall be designed and laid out to minimise exposure to wind.

6.2.7 Noise Suppression

Any works on the project site will be compliant with the contents and recommendations of British Standard 5228: Code of Practice for Noise Control on Construction and Demolition Sites, as well as the Safety, Health and Welfare at Work (General Application) Regulations 2007. All plant and machinery used during the work will be the quietest of its type available for carrying out the work required and will be maintained in good condition with regard to minimising noise output.

To avoid significant construction noise impacts during the construction phase, the following mitigation measures will be adopted:

- To protect residential amenities, and avoid disturbance to local wildlife species, construction practices will take place only within daylight hours. It may on occasion during certain stages of construction be necessary to work outside of the permitted working hours. In the event that these hours need to be extended, agreement will be sought from the Local Authority in advance.

- An on-site speed limit of 20 Kph will be enforced for all construction traffic.

- The contractor will ensure the use of quiet working methods will be selected, and the most suitable plant will be selected for each activity, having due regard to the need for noise control.

- Best practicable means will be employed to minimise noise emissions and will comply with the general recommendations of BS 5228;

- All plant will be maintained in good working order. Where practicable, machinery will be operated at low speeds and will be shut down when not in use.

- Mechanical plant used on site will be fitted with effective exhaust silencers.

- Vehicle reverse alarms will be silenced appropriately to minimise noise breakout from the site while still maintaining their effectiveness.

- If required, compressors will be of the “noise reduced” variety and fitted with properly lined and sealed acoustic covers.

- All pneumatic percussive tools will be fitted with mufflers or silencers as recommended by the equipment manufacturers. All static mechanical construction plant will be enclosed by acoustic screens.

- Employees working on the site will be informed about the requirement to minimise noise and undergo training on the following aspects:

- The proper use and maintenance of tools and equipment,
- The positioning of machinery on-site to reduce the emission of noise to the noise sensitive receptors,
- Avoidance of unnecessary noise when carrying out manual operations and when operating plant and equipment,
- The use and maintenance of sound reduction equipment fitted to power pressure tools and machines.

• It is recommended that complaints should be received from nearby residential properties periodic noise monitoring be undertaken during construction works to determine noise levels at noise sensitive receptors. Based on the findings of such noise monitoring, appropriate noise mitigation measures will be implemented to further reduce noise impacts. Where excessive noise levels are recorded, further mitigation measures will be employed, which may include temporary screening of the nearest receptor to on-site activities.

• Public Liasson - It is recommended that the Contractor will appoint a responsible and trained person who will be present on site and who will be willing to answer and act upon complaints and queries from the local public.

6.2.8 Environmental Incidents and Accidents

In the case of environmental incidents or accidents occurring during the construction phase of the Proposed Development works, the following measures will help to prevent/contain the contamination of the potential source-vector pathways for negative impacts to proximal European sites:

・An emergency-operating plan will be established to deal with incidents or accidents during construction that may give rise to pollution in watercourses proximal to the works. This will include means of containment in the event of accidental spillage of hydrocarbons or other pollutants (e.g. oil booms, soakage pads).

・Throughout all stages of the construction phase of the Proposed Development the Contractor will ensure that good housekeeping is maintained at all times and that all site personnel are made aware of the importance of the freshwater environments and the requirement to avoid pollution of all types.

・All hazardous materials on site will be stored within secondary containment designed to retain at least 110% of the storage contents.

- Temporary bunds for oil/diesel storage tanks will be used on the site during the construction phase of the Proposed Development as appropriate.

- Safe handling of all potentially hazardous materials will be emphasised to all construction personnel employed during this phase of the Proposed Development and an emergency response plan shall be in place in case of accidental spillage.

- Raw or uncured waste concrete will be disposed of by removal from the site; Any spillage of fuels, lubricants or hydraulic oils will be immediately contained and the contaminated soil removed from the site and properly disposed of; and

- There will be no discharge of un-attenuated water to water courses proximal to the works. Oil and Chemical spillages

- The type, size and location of the spill will be identified.

- If possible, stop the source of the spill and control the area of the spill.

- If the oil spill is small in nature, it can be treated with an appropriate spill kit to reduce the effect of the spillage i.e. a suitable absorbent material will be used to absorb/remove the spill.

- In the event of a significant oil spill occurring, an appropriate licensed contractor will be employed to determine the extent of the area affected and to implement an appropriate clean-up operation in line with suitable standards.

- Material will be removed and disposed of in accordance with the Waste Management Plan.

- In the event of a chemical spill, stop the source of the spill and control the area.

- If the spill is hazardous or toxic in nature warn all in the vicinity use an appropriate clean up kit or if a large spill occurs employ a licensed contractor to carry out remediation works.

- A program of mitigation will be put into place to address the spill.

- All fuels, oils and chemicals will be stored in a designated bunded storage area and stored in a manner that will ensure no environmental impacts occur; and

- Bunds or bunded containers will have a bunded capacity of 110% of the largest tank or 25% of the total volume of material stored.

6.2.9 Plant Management

· All plant will be checked, and active monitoring carried out to prevent leaking of hydrocarbons/chemicals.

· Stationary plant machinery will have drip trays located beneath if located within an environmentally sensitive area.

· When refueling, care will be taken to prevent spills by using appropriate equipment; and

· Where feasible, refueling will take place at least 50-100m away from watercourses.
Unauthorised Waste Disposal

· All waste generated on site will be transported by a permitted waste carrier and suitably disposed of at a licensed waste facility.

· No waste will be buried, burnt, dumped on-site or in land adjacent to the site as this will be considered as unauthorised waste management; and

· In the event of unauthorised waste management, the cause and impact will be assessed, and all appropriate steps will be undertaken. Damage to Flora and Fauna

· In the event of damage occurring to protected flora/fauna or designated area, the cause of the incident will be identified.

· If on-site vehicles or personnel were the cause of the incident, all work will cease until the Health and Safety Officer declares the site a safe working area.

· When the site is declared secure, an assessment of the incident will be carried out.
out.

· In the event of the death of any faunal species, species details, photographs and any other available information will be recorded.

· The ECoW and a county council representative will be informed of the incident.

· The NPWS will be notified of the incident by the Site Ecologist; and

· Suitable incident-specific mitigation measures will be put in place to manage the incident.

6.2.10 Lighting

No lighting will be necessary during the construction phase because works will be confined to daylight hours. In the event that lighting is sought during the construction phase, permission should be sought from the local authority in advance.

Any outdoor lighting used during the operational phase should be low-level directional. The layout and spacing of the lighting should ensure that there is no light spill outside of the site boundary or within the area of scrub to the south of the site.

6.2.11 Invasive Species

- Site Hygiene: Good construction site hygiene will be practiced preventing the introduction and spread of problematic invasive alien plant species (e.g., Rhododendron, Japanese Knotweed, Giant Rhubarb).
- Machinery Cleaning: All machinery will be thoroughly cleaned before arriving on the site to avoid spreading invasive species from other locations. Due to the presence of Montbretia (*Crocosmia X crocosmiiflora)* within the proposed development site, machinery will be thoroughly cleaned before exiting the site to prevent spreading invasive species elsewhere.
- Personal Cleaning: Before entering and leaving the site, all boots and clothing will be thoroughly brushed down to remove any potential contaminated material.
- Cleaning Method: Clean down will be performed using brushes and shovels. Power washing will be avoided as much as possible to prevent potentially contaminated runoff from spreading outside the site.
- Final Cleaning: Once machinery has been cleaned as thoroughly as possible, it will be power-washed or air-blasted to remove any remaining material.
- Soil Sourcing: Any soil and topsoil required on the site will be sourced from a supply that has been screened for the presence of invasive species, ensuring none are present.
- Material Screening: Any material imported to the site will be screened for invasive species by a suitably qualified ecologist before transportation.

6.3.12 Silt fencing

Silt fences are required between works areas and water features to prevent potentially contaminated surface water run-off from works areas reaching the surface water feature. Silt fences will be deployed as Map 7 below, prior to the commencement of construction. The ground will be prepared to ensure proper installation and the fabric will be secured to the supporting joint posts.

- Silt fences will be installed downgradient of the potential source of the silt / sediment.

- The silt curtain will contain the area where silted waters are being generated and shall terminate on high ground.

- They shall be constructed using permeable filter fabric (Hy-Tex Terrastop silt fence or similar) rather than a mesh material.

- Its base shall be embedded at least 15cm into the ground and staked at 2m intervals.

- The vegetated turves shall be peeled back and not detached from the ground, the materials inserted and the turves replaced to hold the base in place.

- The bottom of the fabric will be folded and backfill will be placed over it. Each section of fence turned up wards to prevent runoff from the end cutting.

- The silt fence will be inspected regularly by the Environmental Site Officer and contractor during the working day and weekly during construction, and in particular following heavy rainfall.

- Silt fences shall remain in-situ until the vegetation on the disturbed ground is re- established.

- The fence shall not be pulled from the ground, but cut at ground level and the stakes / posts removed.

- Should water build up behind the fences, the sediment will settle to the bottom. Water can be released, but sediments will remain.

- Areas which may be subject to increased sediment deposition should be noted. If significant runoff or sediment deposition is anticipated, or in areas of increased flood risk, a second fence parallel to the original one for added capacity will be installed. This will follow a judgement call by the Environmental Site Officer.

- Additional silt-trap fencing should be erected, if necessary, at locations which should be decided by the Environmental Site Officer.

Additional silt trap fencing may be required during the treatment of invasive species. The Environmental Site Officer will oversee all control actions relation to the eradication of invasive species.

- Checks and maintenance in these areas will be carried out daily.

- Silt fences will not be a replacement for good housekeeping and measures to minimise runoff from the site will be carried out, e.g. covering of materials and spoil, checking and maintaining equipment, working in dry weather conditions etc.

- Silt-fence systems will provide sufficient room for sediment to be deposited behind the silt fence and for sediment removal equipment to access the deposits.

- A record of its installation, inspection and removal must be maintained by the Environmental Site Officer;

- The silt fence will remain until all the site has been stabilised or until such as time as agreed with an Ecological Clerk of Works for the project.

- Upon failure of the silt trap fence to prevent materials generated on site (e.g. sediment, concrete hydrocarbons) by means of a tear, lack of proper installation, or other, the incident will be reported to the Site Ecologist, who will notify the NPWS and the relevant planning authority if and when it occurs and appropriate and incident-specific remedial measures will be taken.

Map 7: Silt trap fencing

7.0 Conclusion

Following a comprehensive assessment of the potential impacts of the proposed development on Natura 2000 sites, including detailed consideration of all possible impact pathways and receptor sensitivities relevant to qualifying interests (QIs) and special conservation interests (SCIs), it is concluded that the project, when implemented in strict accordance with the mitigation measures outlined in this Natura Impact Statement (NIS) and the associated Construction Environmental Management Plan (CEMP), will not give rise to any significant adverse effects on the integrity of any Natura 2000 site, either alone or in combination with other plans or projects, in view of the sites' conservation objectives.

The proposed development site lies entirely outside the boundaries of any designated Natura 2000 site, thereby precluding any potential for direct habitat loss or direct impact. Potential indirect effects were identified and assessed in relation to both historical and proposed construction activities, as well as the subsequent operational phase. These include potential pathways associated with surface water runoff, habitat fragmentation, and noise or disturbance to QI and SCI species.

The site comprises primarily semi-improved land, reflecting previous anthropogenic modification and limited ecological value. A watercourse located to the south of the site provides potential hydrological connectivity to the Connemara Bog Complex SAC (Site Code: 002934), necessitating a precautionary approach to managing surface water and sediment

transport. The assessment has identified potential risks to the Qualifying Interests of this SAC, in the context of its Conservation Objectives, and targeted mitigation measures have been developed to ensure the protection and maintenance of these interests.

No loss or degradation of habitats supporting Annex I communities or BirdWatch Ireland BoCCI red-listed species is anticipated. Furthermore, the proposed works are not expected to adversely affect the conservation status of any SCI species associated with the Connemara Bog Complex SPA. Application of the precautionary principle has guided the inclusion of robust mitigation measures aimed at preventing disturbance to both QI and SCI species during all phases of the project.

Implementation of these measures will be overseen by a suitably qualified ecologist to ensure full compliance and to monitor the effectiveness of mitigation and any unforeseen issues that may arise. With adherence to these measures, no significant residual effects on the structure, function, or overall ecological integrity of any Natura 2000 site are predicted.

Accordingly, it is the professional opinion of the author that the proposed development, subject to the mitigation and monitoring commitments set out herein, will not result in adverse effects on the integrity of any Natura 2000 site, either individually or in combination with other projects, in accordance with Article 6(3) of the EU Habitats Directive (92/43/EEC).

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Site Synopses

Site Name: Connemara Bog Complex SAC Site Code:

002034

The Connemara Bog Complex SAC is a large site encompassing the majority of the south Connemara lowlands in Co. Galway. The site is bounded to the north by the Galway–Clifden road and stretches as far east as the Moycullen–Spiddal road. The site supports a wide range of habitats, including extensive tracts of western blanket bog, which form the core interest, as well as areas of heath, fen, woodlands, lakes, rivers and coastal habitats.

The site is underlain predominantly by various Galway granites, with small areas along the northern boundary of Lakes Marble, schist and gneiss. The Roundstone Bog area has a diverse bedrock geology composed mainly of the basic intrusive rock, gabbro. An area of rock, possibly Cambrian in age, called the Delaney Dome Formation occurs in the north-west of this area. Gabbro also occurs in the Kilkieran peninsula and near Cashel. The whole area was glaciated in the last Ice Age which scoured the lowlands of Connemara.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[1150] Coastal Lagoons*

[1170] Reefs

[3110] Oligotrophic Waters containing very few minerals [3130]

Oligotrophic to Mesotrophic Standing Waters [3160] Dystrophic

Lakes

[3260] Floating River Vegetation [4010] Wet

Heath

[4030] Dry Heath

[6410] Molinia Meadows [7130]

Blanket Bogs (Active)* [7140]

Transition Mires

[7150] Rhynchosporion Vegetation

[7230] Alkaline Fens

[91A0] Old Oak Woodlands

[1065] Marsh Fritillary (Euphydryas aurinia) [1106]

Atlantic Salmon (Salmo salar) [1355] Otter (Lutra

lutra)

[1833] Slender Naiad (Najas flexilis)

The Connemara Bog Complex is characterized by areas of deep peat surrounded by rocky granite outcrops covered by heath vegetation. However, the main habitat within this site is lowland Atlantic blanket bog, as most of the area is covered by blanket peat greater than 1 m in depth. A mosaic of different communities exists in association with the blanket bog, including hummock/hollow systems, inter-connecting bog pools, flushes, transition and quaking mires, freshwater marshes, lakeshore, lake and river systems. The key plant species of lowland blanket bog are Black Bog-rush (*Schoenus nigricans*), Purple Moor-grass (*Molinia caerulea*), Cross-leaved Heath (*Erica tetralix*), Deergrass (*Scirpus cespitosus*), Common Cottongrass (*Eriophorum angustifolium*), Bog Asphodel (*Narthecium ossifragum*), White Beak-sedge (*Rhynchospora alba*) and bog moss species (*Sphagnum spp*.). Rhynchosporion vegetation is found on the blanket bog by lake and pool margins, in wet hollows and in quaking areas. Species such as White Beak-sedge, Common Cottongrass, Bogbean (*Menyanthes trifoliata*), sundews (*Drosera spp*.) and bog mosses are common. Areas of wet heath are widespread throughout this site, where blanket peat becomes shallower. There is a limited amount of dry heath, with species such as Western Gorse (*Ulex gallii),* St. Dabeoc's Heath (*Daboecia cantabrica*) and Bell Heather (*Erica cinerea*) recorded.

Both oligotrophic and dystrophic lakes are found within Connemara Bog Complex SAC, with the greatest concentration in the west of the site. The latter type are generally smaller, have a mainly peaty bottom and there is generally an abrupt transition from blanket bog to open water. Oligotrophic lakes in this site typically have shallow margins, with a mixed rocky/peaty bottom. Typical plant species of the lake edges include Water Lobelia (*Lobelia dortmanna*), Pipewort (*Eriocaulon aquaticum*), Shoreweed (*Littorella uniflora*), Many-stalked Spike-rush (*Eleocharis multicaulis*) and Bulbous Rush (*Juncus bulbosus*). The rare species Slender Naiad (*Najas flexilis*) and Pillwort (*Pilularia globulifera*) have both been recorded from

oligotrophic lakes at this site. Species commonly encountered in dystrophic lakes/pools include the bog mosses *Sphagnum auriculatum* var. *auriculatum* and *S. cuspidatum*, along with White Beak-sedge, Lesser Bladderwort (*Utricularia minor*), Pipewort and Bogbean.

The main river systems within the site are the Owenmore (Ballynahinch) river, the Glashanasmearany and Derrygauna rivers (to the south of Lough Bofin), the Cashla river (which flows out of Glenicmurrin Lough), the Glengawbeg river (which connects Lough Agraffard and Lettercraffoe Lough) and the Owenboliska river and its tributaries (north of Spiddal). Vegetation associated with some of these waterways includes Alternate Water-milfoil (*Myriophyllum alternifolium*), Bulbous Rush, Floating Club-rush (*Scirpus fluitans),* water-lilies, Great Fen-sedge (*Cladium mariscus*), Bog Pondweed (Potamogeton polygonifolius), Broad-leaved Pondweed (P. natans), Water Horsetail (Equisetum fluviatile) and the liverwort *Scapania undulata*.

Within this site, areas of transition mire occur mainly along the margins of lakes and bog streams. The surface of such areas is typically quaking and there is often evidence of base-enrichment. Typical plant species include Bog-sedge (*Carex limosa*), Slender Sedge (*C. lasiocarpa*), Bog Pondweed, Bogbean, Blunt-flowered Rush (*Juncus subnodulosus*), Common Cottongrass, Purple Moor-grass and White Beak-sedge. Locally there may be some Great Fen-sedge or Black Bog-rush. The rare and legally protected species Slender Cottongrass (Eriophorum gracile) occurs in this habitat. Moss cover is variable.

Areas of Molinia meadow at this site contain species such as Purple Moor-grass, Meadow Thistle (*Cirsium dissectum*), Sharp-flowered Rush (*Juncus acutiflorus*) and Tormentil (*Potentilla erecta).* The community occurs on wet acid soils.

There are a number of areas of old oak woodland, but the woodland at Shannawoneen, north of Spiddal, is the best known. This woodland lies in the valley of the Owenboliska river. It provides a good example of a Sessile Oak (*Quercus petraea*) dominated canopy woodland, although there is also a lot of Downy Birch (*Betula pubescens*). Other examples of this habitat at the site are found at Ballynahinch, Glendollagh, Derrywaking Lake, as well as on some of the lake islands. The invasive alien shrub Rhododendron (Rhododendron ponticum) is found in some areas of woodland.

There are some limited, but nonetheless well developed, examples of alkaline fen at this site. These fens are often species-rich, and support species not typically found in association with blanket bog areas - e.g. Dioecious Sedge (*C. dioica*),

Black Bog-rush, Broad-leaved Cottongrass (*E. latifolium*), the moss *Campylium stellatum* and Lesser Clubmoss (*Selaginella selaginoides*).

Four main lagoons occur within this site: Lough Ahalia, Doire Bhanbh, Lough Aconeera and Salt Lake. All four are regarded as saline lake lagoons and they range in size from 1–90 ha. The smallest (Doire Bhanbh) is quite shallow and surrounded by Common Reed (*Phragmites australis*) swamp, while the three larger lagoons are relatively deep and are surrounded by moorland and exposed granite. Salt Lake contains a serpulid worm reef. Lough Ahalia consists of a series of basins, and these are deep in places, with an unusual salinity structure. The lowest lake is relatively shallow (0–4 m) and brackish throughout, while the middle lake is deep (13 m) and permanently stratified, with water below 3 m depth measuring 14 ppt. The flora and fauna of this lagoon system are extremely diverse, with many communities found. This, along with Lough Aconeera, is the only known site in Ireland for the Red Data Book stonewort *Chara balthica*. Another Red Data Book plant, Lamprothamnium papulosum, also occurs, as well as *Chara aspera* and *C. virgata*. An unusual form of Fennel Pondweed (*Potamogeton pectinatus*) occurs in high salinity water. There are a number of other notable records of plant and animal from this lagoon. Lough Aconeera is less remarkable in terms of flora and fauna, but nonetheless supports a sizeable number of lagoonal specialists.

Nine species protected under the Flora (Protection) Order, 2015, occur within this site: Forked Spleenwort (*Asplenium septentrionale*), Parsley Fern (*Cryptogramma crispa*), Bog Hair-grass (*Deschampsia setacea*), Slender Cottongrass, Bog Orchid (*Hammarbya paludosa*), Slender Naiad, Heath Cudweed (*Omalotheca sylvatica*), Pillwort and Pale Dog-violet (*Viola lactea*). Rare and threatened species such as Dorset Heath (*Erica ciliaris*), Mackay's Heath (*Erica mackaiana*) and Green- winged Orchid (*Orchis morio*) also occur within this site. All of the above species are listed in the Irish Red Data Book, and Slender Naiad is listed on Annex II of the E.U. Habitats Directive.

The Annex II butterfly species, Marsh Fritillary, is known to occur at this site.

Atlantic Salmon, a species listed under Annex II of the E.U. Habitats Directive, occurs in many of the rivers within the site. The Cashla and Ballynahinch systems are good examples of western acidic spate rivers which support the species.
Good spawning and nursery grounds for the species occur in these systems. Arctic Char occurs in a number of lakes within the site: Ballynahinch Lake, Glenicmurrin Lough and Lough Shindilla. The species has also been reported from Lough Oorid and Lough Glendollagh in the past, but has not been recorded from

these lakes in recent years. Arctic Char is listed as threatened in the Irish Red Data Book.

Otter have been recorded as occurring in the Connemara Bog Complex. Irish Hare, another mammal listed in the Red Data Book, occurs on the site. Common Frog breeds on the site.

The site is of national importance for wintering populations of Greenland White- fronted Goose. Small flocks (up to 30) are found on Roundstone Bog and also use the bogs between Recess and Maam Cross. In April 1989 a synchronised ground and air census of the Connemara bogs located 7 flocks of Greenland White- fronted Goose, totalling 134–137 birds. In 1991/93 wintering numbers were considered to be approximately 60 birds.

There is an internationally important breeding area for Cormorants at Lough Scannive with 218 pairs present in 1985 in a colony which is known to have existed pre-1968. Golden Plover, a species listed on Annex I of the E.U. Birds Directive, nests at up to four locations in the site, with a maximum of two pairs noted at any one location. Another Annex I species known to be present in the site is Merlin. Lough Naskanniva is an important inland breeding site for Common Terns (up to 60 pairs in 1977 and 1992) and Choughs, both of which are also Annex I species under the E.U. Birds Directive.

The main damaging operations and threats in the Connemara Bog Complex are peat cutting, over-grazing and afforestation. Extensive peat extraction using 'Difco' machines has become common in the region in recent years, and cutting by excavator and hopper is also increasing. The hand-cutting of peat is less threatening as it is usually on a much smaller scale, but nonetheless it should be controlled within the site. Over-grazing and poaching by sheep and cattle is a widespread problem within the site, with erosion of peat ensuing. The above operations are the most extensive but other threats and potentially damaging operations include land drainage and reclamation, fertilization, quarrying and dumping.

In summary, the Connemara Bog Complex encompasses a large area of relatively undamaged lowland Atlantic blanket bog of high conservation significance both in Ireland and at a European level. The site also contains good examples of at least 13 other habitats listed on Annex I of the E.U. Habitats Directive, as well as four species listed in Annex II. Further, the site supports a number of threatened and protected plant species. The site is internationally important for Cormorant and nationally important for Greenland White-fronted Goose, and contains nesting sites for Golden Plover

Site Name: Connemara Bog Complex SPA Site Code:

004181

The Connemara Bog Complex SPA is a large site encompassing much of the south Connemara lowlands of Co. Galway. The site consists of three separate areas - north of Roundstone, south of Recess and north-west of Spiddal. It is underlain predominantly by a variety of igneous and metamorphic rocks including granite, schist, gneiss and gabbro. The whole area was glaciated during the last Ice Age which scoured the lowlands of Connemara.

The Connemara Bog Complex SPA is characterized by areas of deep peat surrounded by heath-covered rocky outcrops. The deeper peat areas are often bordered by river systems and the many oligotrophic lakes that occur, resulting in an intricate mosaic of various peatland/wetland habitats and vegetation communities; these include Atlantic blanket bog with hummock/hollow systems, inter-connecting pools, Atlantic blanket bog pools, flushes, transition and quaking mires, as well as freshwater marshes, lakeshore, lake and river systems.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Cormorant, Merlin, Golden Plover and Common Gull.

Lough Scannive, located within Roundstone Bog, supports a nationally important breeding population of Cormorant (160 breeding pairs in 2001). Other breeding birds using the site include Merlin and Golden Plover. A partial survey in 2009 recorded 8 pairs of Merlin at various locations throughout the site; 15 breeding locations for this species were recorded at the site in an earlier survey undertaken in 1985/86. A survey of upland birds in 2004 recorded 27 pairs of Golden Plover within the site. The numerous lakes scattered throughout the site provide suitable breeding locations for Common Gull (45 pairs in 2000); a survey in 2010 recorded 40 pairs of this species at the site.

The site is also utilised by a wintering population of Greenland White-fronted Goose; small flocks of up to 30 birds have been recorded at various locations within the site.

Connemara Bog Complex SPA is of high ornithological importance, in particular for its nationally important breeding populations of Cormorant, Merlin, Golden Plover and Common Gull. It is of note that three of the regularly occurring species, Greenland White-fronted Goose, Merlin and Golden Plover, are listed on Annex I of the E.U. Birds Directive.