Planning and Environmental Consultants

Article 6(3) Appropriate Assessment Screening Report

Glenlough Bog, Co Longford Decommissioning and Rehabilitation 2022

DOCUMENT DETAILS

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Planning and Environmental Consultants

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1. INTRODUCTION

1.1 Background

McCarthy Keville O'Sullivan Ltd. (MKO) has been appointed to provide the information necessary to allow the undertaking of an Article 6(3) Screening for Appropriate Assessment for the decommissioning and rehabilitation of Glenlough Bog, Co Longford.

The current project is not directly connected with, or necessary for the management of any European Site, consequently the project has been subject to the Appropriate Assessment Screening process.

The assessment in this report is based on a desk study and field surveys between 2012 and 2021 by Bord na Móna ecologists and on a site visit on the 11th of February 2022 by Inga Reich of MKO. It specifically assesses whether the proposed rehabilitation works will have any impact upon European 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, 2021) and the Department of the Environment's Guidance on the Appropriate Assessment of Plans and Projects in Ireland (December 2009, amended February 2010).

In addition to the guidelines referenced above, the following relevant guidance was considered in preparation of this report:

1. *DoEHLG (2010) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government,*
2. *European Communities (2018) Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission,*
3. *European Communities (2000) Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission,*
4. *Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission,*
5. *EC (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission. European Commission,*
6. *EC (2013) Interpretation Manual of European Union Habitats. Version EUR 28. European Commission,*
7. *OPR (2021) Appropriate Assessment Screening for Development Management. Practice Note PN01, Office of the Planning Regulator.*

1.2 Appropriate Assessment

1.2.1 Screening for Appropriate Assessment

Screening is the process of determining whether an Appropriate Assessment is required for a plan or project. Consultants or project proponents may undertake a form of screening to establish if an Appropriate Assessment is required and provide advice or may submit the information necessary to allow the Screening to be undertaken. Where it cannot be excluded beyond reasonable scientific doubt, that a proposed plan or project, individually or in combination with other plans and projects, would have a significant effect on the conservation objectives of a European Site, an Appropriate Assessment (Natura Impact Statement) of the plan or project is required.

1.2.2 Appropriate Assessment (Natura Impact Statement)

The term Natura Impact Statement (NIS) is defined in legislation[1]. An NIS, where required, should present the data, information and analysis necessary to reach a definitive determination as to 1) the implications of the plan or project, alone or in combination with other plans and projects, for a European Site in view of its conservation objectives, and 2) whether there will be adverse effects on the integrity of a European Site. The NIS should be underpinned by best scientific knowledge, objective information and by the precautionary principle.

1.2.3 Statement of authority

The site visit was undertaken by Inga Reich (Honours degree in Biology, Ph.D. in Applied Ecology). The report was written by Inga Reich and reviewed by Pat Roberts (B.Sc. (Env.) MCIEEM) who has over 15 years' post graduate experience in ecological consultancy and impact assessment.

[1] *As defined in Section 177T of the Planning and Development Act, 2000 as amended, an NIS means a statement, for the purposes of Article 6 of the Habitats Directive, of the implications of a proposed development, on its own and in combination with other plans and projects, for a European site in view of its conservation objectives. It is required to include a report of a scientific examination of evidence and data, carried out by competent persons to identify and classify any implications for the European site in view of its conservation objectives*

2. DESCRIPTION OF THE PROJECT AND BASELINE ENVIRONMENT

2.3 Site location

Glenlough Bog is located approximately 4.3km south of Edgeworthstown and 13.5km south-east of Longford town in Co Longford (ITM Grid Ref. X 626188 Y 765912). The N55 runs about 1.6km to the west of the site, the N4 runs 3.8km to the north and the L1096 runs just to the southernmost part. Glen Lough SPA and pNHA are located approx. 400m to the east of the bog. The site location is shown in Figure 2-1.

2.4 Site description

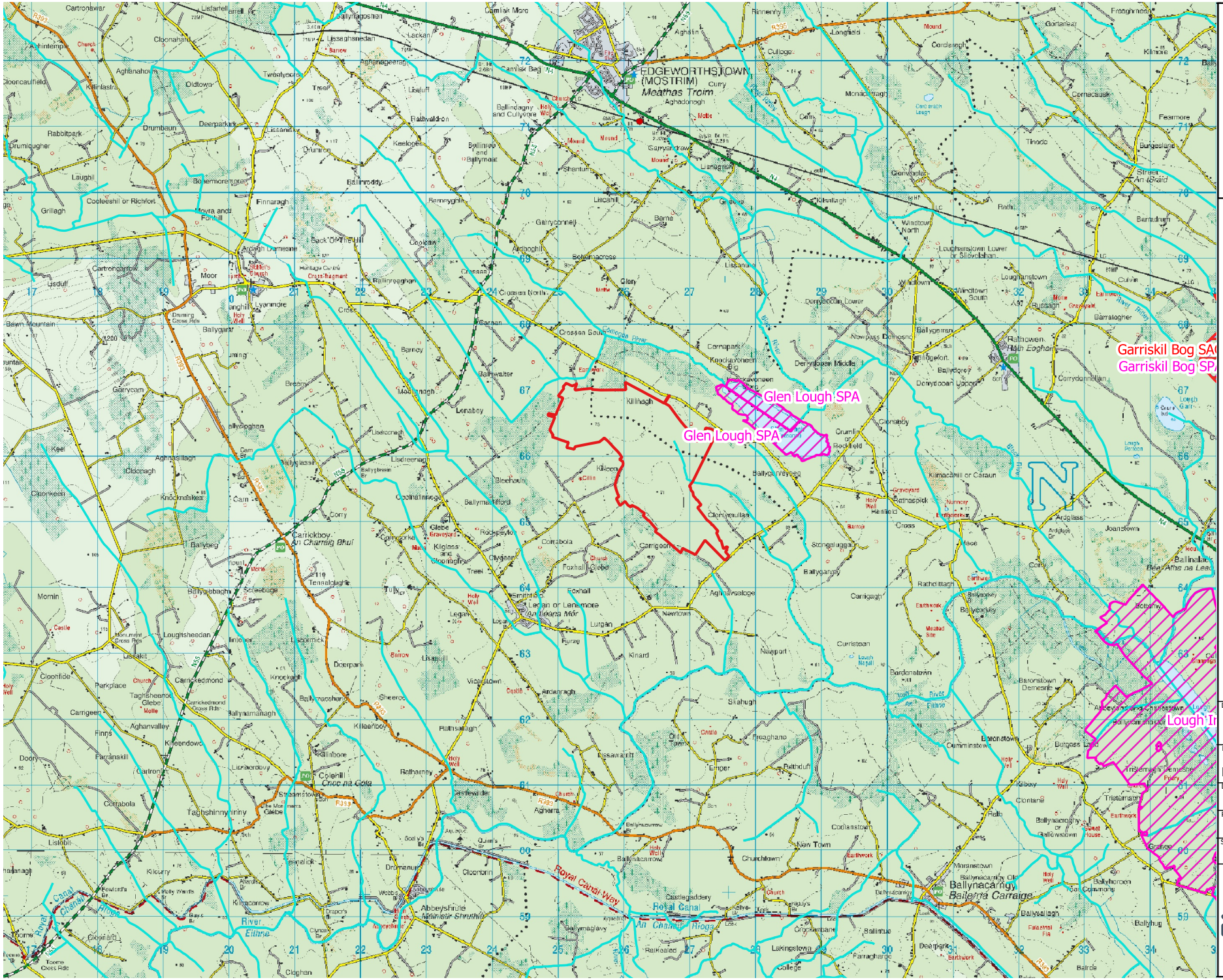
Glenlough Bog discharges via adjacent land drains to the south to the Aghnavealoge and Clontymullan streams, tributaries of the Inny (Shannon), and to the north-east into the Comoge river which flows into Glen Lough SPA. Glenlough Bog is listed in the *Review of the raised bog Natural Heritage Area network* (NPWS 2014) and is expected to be considered for NHA designation in the future.

Glenlough Bog was originally drained for peat harvesting in the 1980s and re-drained in 2003-2005. These drains remain active. Only a small portion of the bog was brought into commercial peat production for horticultural sod-peat during 2000-2018. Trenches were cut in these sections to extract sod moss. Industrial peat extraction at Glenlough Bog permanently ceased in 2018. A portion of land to the south-east of the site, was sold and has been used for industrial peat extraction. This area is outside the scope of this rehabilitation plan.

Glenlough Bog can broadly be assigned two separate sections (northern and southern); which are separated by a large drainage channel. The northern section has been ditched and partially used for horticultural peat 'sod moss'. Part of southern section has been ditched and harvested for 'sod moss' since the 1990's. Most of the site retains relatively deep peat reserves of *Sphagnum* peat with some smaller pockets of shallow residual peat depths where the peat has been cut away. Peat depths of 3-6 m occur across most of the bog.

The underlying geology at Glenlough Bog is variable. Geological Survey of Ireland (GSI) data indicates that the north-western section of Glenlough Bog is underlain by the Lucan Formation, while the south-eastern section is underlain by Waulsortian Limestone. GSI mapping does not identify any karst features within the surrounding area. The lowest lying areas of the site are underlain by lacustrine clay (below c. 62mOD), while the remainder of the site appears to be underlain by glacial till based on the presence of clayey material and the presence of comparable features present in the surrounding area. The lacustrine deposits encountered would be expected to limit vertical losses to depth in areas where this occurs. Subsoils underlying extant peat are significantly lacustrine calcareous marls with glacial sub-soil mounds and ridges.

The surrounding landscape is a mosaic primarily consist of low-lying agricultural land (pasture) interspersed with other raised bogs, many of which have also been managed by Bord na Móna for peat production with some areas utilised for domestic turf-cutting.



Map Legend

- Site boundary
- Special Area of Conservation
- Special Protection Area
- Watercourse

Drawing Title

Site location Glenlough Bog

Project Title

Bord na Mona Bog Rehabilitation

Drawn By	Checked By
IR	PR
Project No.	Drawing No.
211019	2-1
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1:75000	09.02.2022

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2.2 Characteristics of the Peatland Climate Action Scheme

2.2.1 Overview

Bord na Móna operates under IPC Licence issued and administered by the EPA to extract peat within the Mount Dillon bog group (Ref. P0504-01), of which Glenlough Bog is part of. As part of Conditions 10.1 and 10.2 of this license, respectively, decommissioning and rehabilitation (D & R) must be undertaken to ensure the permanent rehabilitation of the cutaway bog lands within the licensed area.

A document titled '*Glenlough Bog Cutaway Bog Decommissioning and Rehabilitation Plan 2022'* has been prepared specifically to describe the proposed D & R measures at Glenlough Bog and is appended to this document as Appendix 1.

It is proposed by Government that Bord na Móna (BnM) carry out a Peatland Climate Action Scheme (PCAS) on peatlands previously used for energy production. The additional costs of the proposed Scheme will be supported by Government through the Climate Action Fund and Ireland's National Recovery and Resilience Plan. Bord na Móna have identified a footprint of 33,000 Ha (a subset of the BnM estate that has been used for energy production) as peatlands suitable for enhanced rehabilitation – including Glenlough Bog. This proposed scheme will significantly go beyond what is required to meet rehabilitation obligations under existing EPA IPC licence conditions.

Decommissioning seeks to address condition 10.1 of license Ref. P0504-01, which requires the following:

10.1 Following termination of use or involvement of all or part of the site in the licensed activity, the licensee shall:

10.1.1 Decommission, render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.

Decommissioning must take place at each bog prior to or concurrent with rehabilitation – the scale of decommissioning per bog varies dependent on the items/ infrastructure previously in place to facilitate prior peat extraction.

Enhanced decommissioning as part of the PCAS will enhance the future after use of the bog for amenity value, security against access for illegal and unsocial activities and general State and community benefit.

Rehabilitation seeks to address the requirements of Condition 10.2 of IPC License Ref. P0504-01 and is based on a reference document prepared by BnM per Bog for which the IPC license is applicable. See the following extract from IPC License Ref. P0504-01:

"*The licensee shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for permanent rehabilitation of the cutaway boglands within the licensed area."*

Enhanced rehabilitation interventions supported by the above referenced Scheme will ensure that environmental stabilisation is achieved (meaning IPC obligations are met), and importantly, significant additional benefits, particularly relating to climate action and other ecosystem services, will also be delivered.

2.2.2 Decommissioning and rehabilitation stage

The proposed **decommissioning** at Glenlough Bog includes the clean-up of the bog; enhanced measures include measures to restrict access to areas of the bog.

Of the 330.65 Ha, 320.31 Ha or 96.9% of the present landcover will be subject to **rehabilitation** measures. These are bespoke interventions designed to stabilise the existing baseline and meet compliance with the requirements of the existing EPA, IPC License and the proposed PCAS (Plate 2-1). Prescriptive measures are unique to the existing baseline habitats and comprise 2 no. broad categories, 1) those associated with deep peat cutover bog (Table 2-1), and 2) measures associated with marginal land (Table 2-2). The aim of rehabilitation is as much as possible to place existing peatlands on a trajectory towards a naturally functioning peatland system (Renou-Wilson 2012).

The proposed Glenlough rehabilitation will be undertaken using standard best practices in peatland restoration. These are based on published information in the Irish context, methodologies developed through rehabilitation trials, best practices employed elsewhere in Europe on peatland rehabilitation and restoration but also the experience of 40 years of research on the after-use development and rehabilitation of the BnM cutaway bogs (Clarke & Rieley 2010), including examples such as the BnM Raised Bog Restoration Project (Bord na Móna 2014).

Access during the D & R phase will be from the south of the site.

In terms of rehabilitation, the ecological and site information collected during BnM ecological baseline surveys, additional site visits, stakeholder input, and monitoring and desktop analysis forms the basis for the planning of peatland rehabilitation at Glenlough Bog, along with:

- Significant international engagement during this period with other countries in relation to best-practise regarding peatland rehabilitation and after-use through the International Peatland Society and the Society for Ecological Restoration (Joosten & Clarke 2002; Clarke & Rieley 2010; Gann et al. 2019);
- Consultation and engagement with internal and external stakeholders;
- GIS Mapping;
- BnM drainage surveys;
- Bog topography;
- Hydrological modelling.

2.2.2.1 Methodology

Decommissioning

Decommissioning at Glenlough will involve the deployment of a work crew to collect and oversee the removal of any remaining plant or potentially contaminating waste left in situ in line with Condition 7 of License Ref. P0504-01. This condition specifically requires that BnM's procedures for the Disposal or recovery of waste shall take place only as specified in Schedule 2(i) Hazardous Wastes for Disposal/ Recovery and Schedule 2(ii) Other Wastes for Disposal/Recovery of the IPC license and in accordance with the appropriate National and European legislation and protocols. No other waste shall be disposed of/recovered either on-site or off-site without prior notice to, and prior written agreement of, the EPA. Waste sent off-site for recovery or disposal shall only be conveyed to a waste contractor, as agreed by the EPA, and only transported from the site of the activity to the site of recovery/disposal in a manner which will not adversely affect the environment.

A full record, which shall be open to inspection by authorized persons of the EPA at all times, shall be kept by the licensee (BnM) on matters relating to the waste management operations and practices at Glenlough. This record shall as a minimum contain details of the following:

- The names of the agent and transporter of the waste;
- The name of the persons responsible for the ultimate disposal/recovery of the waste;
- The ultimate destination of the waste;
- Written confirmation of the acceptance and disposal/recovery of any hazardous waste consignments sent off-site;
- The tonnages and EWC Code for the waste materials listed in Schedule 2(i) Hazardous Wastes for Disposal/Recovery and Schedule 2(ii) Other Wastes for Disposal/Recovery sent off-site for disposal/recovery;

- Details of any rejected consignments.

A copy of this Waste Management record shall be submitted to the agency as part of the AER for Glenlough Bog. As required by the license, these waste items will be removed for recycling or disposal, using external contractors with the required waste collection permits, with waste records maintained as required. Where possible, BnM will utilize the appropriate waste hierarchy to identify waste that can reused or recycled ahead of disposal.

The validation of the success of condition 10.1 is carried out through an Independent Closure Audit (ICA), followed by an EPA Exit Audit (EA) and the eventual partial or full surrender of the license. Decommissioning may also include measures to restrict access to the bog or silt ponds.

Bog area clean up: These bog areas include the parking spaces for production plant and equipment, locations for storing rail line, drainage pipes and stockpile covering. All remaining or unconsolidated old and unused polythene will be collected for recycling or disposal, depending on condition. Any remaining older and immobile plant will be brought in from the bog and removed off site. Any remaining hazardous waste oils, fluids and batteries will be removed off site by qualified appropriate hazardous waste contractors. All remaining unused drainage pipes will be gathered up for reuse, recycling or disposal. All remaining, unconsolidated unused rail line sections will be collected from the bog and stored at the main access location for dismantling.

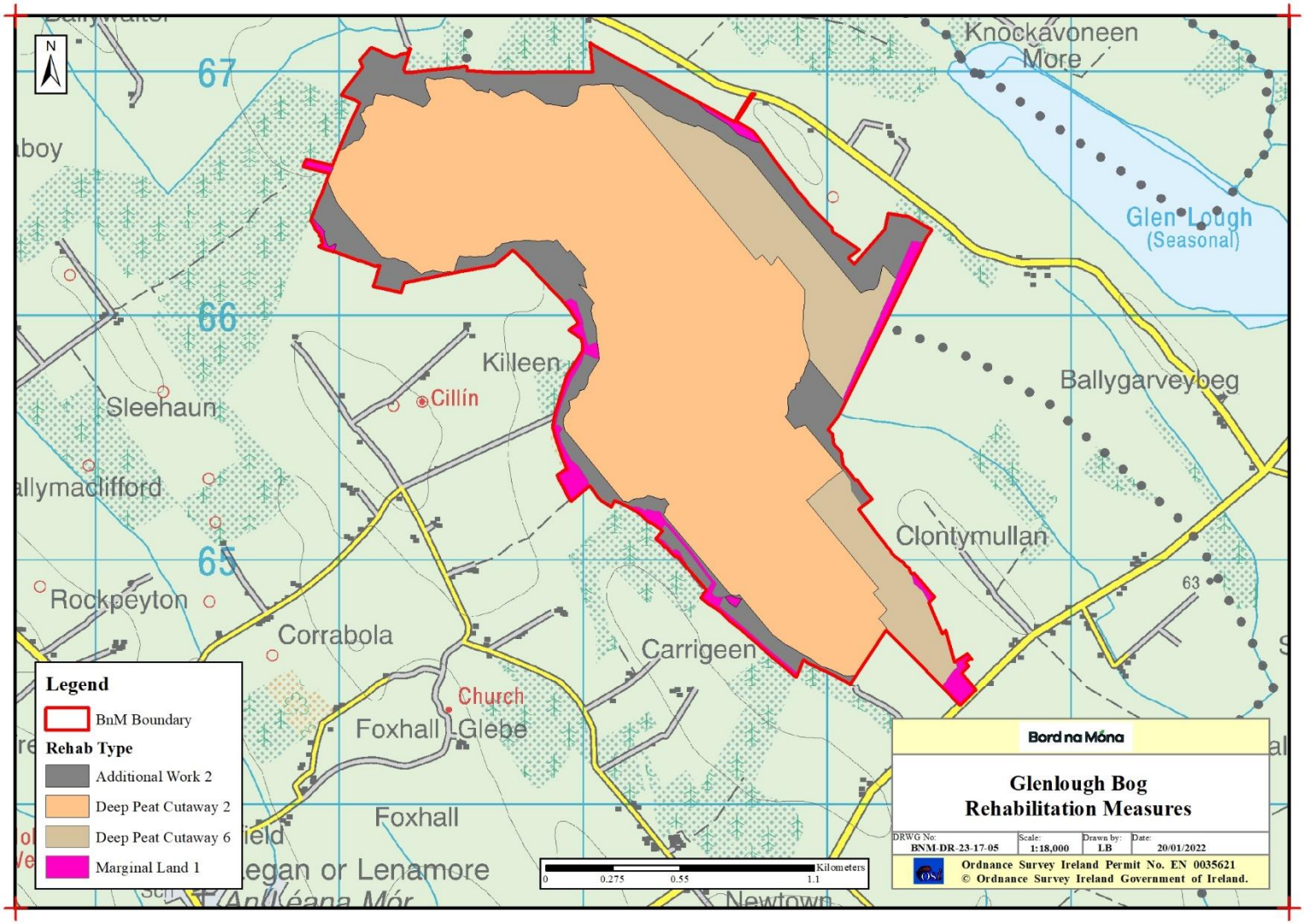

Plate 2-1 Indicative Enhanced Rehabilitation Plan for Glenlough Bog (extracted from Rehab Plan Mapbook)

Rehabilitation

Deep peat cutover bog rehabilitation packages

The key intervention to be applied to deep peat cutover bog is re-wetting of peat to encourage natural colonisation of typical vegetation and the development of *Sphagnum*-rich peat-forming vegetation communities. This requires managing water-levels close to the surface of the peat for most of the year (0.1m ± 0.05m). Several different approaches can be taken to this type of restoration/rehabilitation, and five rehabilitation packages with different intensities to managing suitable hydrological conditions are proposed (Table 2-1).

Table 2-1: Extent of deep peat cutover bog rehabilitation proposed at Glenlough.

Deep peat cutover bog		Extent (Ha)
DPT1	Regular drain blocking (3/100 m) + blocking outfalls and managing water levels with overflow pipes	N/A
DPT2	More intensive drain blocking (max 7/100 m) + blocking outfalls and managing water levels with overflow pipes	217.6
DPT3	More intensive drain blocking (max 7/100 m) + field reprofiling & blocking outfalls and managing water levels with overflow pipes + *Sphagnum* inoculation	N/A
DPT4	Berms and field reprofiling (45m x 60m cell) + blocking outfalls and managing water levels with overflow pipes + drainage channels for excess water + *Sphagnum* inoculation	N/A
DPT5	Cut and fill cell bunding (30m x 30m cell) + blocking outfalls and managing overflows + drainage channels for excess water + *Sphagnum* inoculation	N/A
DPT6	5m wide peat dams (2-3/100m) + blocking outfalls and managing water levels with overflow pipes	47.31

The constituent prescriptions which combine to form the deep peat cutover bog rehabilitation packages DPT2 and DPT6 at Glenlough Bog are further described below, namely:

1. More intensive drain blocking (max 7/100m)
2. Blocking outfalls
3. Managing water levels with overflow pipes
4. 5m wide peat dams (2-3/100m)

1. More intensive drain blocking (max 7/100m) (Appendix 2, PCAS-0100-002)

This measure can be applied to cutover bog, cutaway bog and drained raised bog with different environmental characteristics. It can be applied to residual peat of various depths including deep cutover peat. The main objective is to block drains with peat barriers to raise water levels, re-wetting peat and slowing water movements through the site. Slowing water movement will have additional benefits of reducing fluvial carbon loss (via water) and also improving water quality leaving the site by reducing emissions of silt and ammonia.

The number of peat blockages per 100m is determined by the topography of the site, but an allowance has been estimated at a maximum of 7 blocks per 100m of field drain. The methodology follows NPWS guidelines published by the National Parks and Wildlife Service (Mackin et al., 2017) and in line with methodologies originally developed by McDonagh (1997). The increased number of peat blockages (compared with the standard measures) will benefit re-wetting and trapping silt on cutaway with slightly greater slopes and will further slow the movement of water from these sites.

1. Before building of dams, the sides and bottom of the ditch is cleaned using the excavator to remove dry degraded peat, to ensure a good peat-to-peat contact. If any vegetation is present, it is carefully removed and left aside for replacement at the end of the process.

2. A 'key' is then cut in either side of the drain approximately 500mm deep, and it is ensured that the width is wider than the actual drain. Approximately 500mm depth of peat is removed from the bottom of the drain also and placed behind the machine for replacement later.

3. An area is opened behind the machine to be used as a borrow pit. Using the surface layer of peat (i.e. the top 100-200mm) is avoided, as it is likely to be very permeable. Only the deeper, more compacted peat is used to build the dam (again, if any vegetation is present, it is carefully removed and left aside for replacement at the end of the process).

4. Peat is then dug out from the borrow pit and placed into the drain compacting it in 300mm layers. The peat is compacted firmly using the excavator bucket before laying more peat from the borrow pit.
5. The dam is built up to a height at least 300mm-500mm above the ground level of the bog to allow for subsequent shrinkage of the peat as it dries. Any vegetation taken in step 1 or step 3 is then placed on the top of the dam, to help bind and stabilise the drain block.)

6. The borrow pit is backfilled with the peat extracted from the bottom of the drain in step 2. The sides of the peat borrow hole are firmly pressed with the excavator bucket to grade the sides of the borrow pit. This enhanced measure's main objective is to block drains with peat dams to raise water levels, re-wetting peat and slowing water movements through the bog.

2. Blocking outfalls (Appendix 2, PCAS-0100-014)

The key objective from targeted blocking of outfalls within a bog is to re-wet peat but to manage waterlevels at an appropriate level for the development of wetland and peatland vegetation. This measure optimises re-wetting of cutaway. This measure also has additional benefits of reducing fluvial carbon loss (via water) and also improving water quality leaving the site by reducing emissions of silt and ammonia. Targeted blocking of outfalls is suitable for bogs or portions of bogs that have already had a period of natural colonisation, minimising disturbance to pioneer habitats that are already developing. It is also appropriate for locations where there are establishing habitats and where former drainage infrastructure is already starting to break down. Hydrological modelling and an understanding of site drainage is required to identify appropriate locations for targeted drain-blocking to maximise re-wetting. Drains are blocked at these locations using an excavator by lifting pipes and filling holes with peat or local sub-soils.

Again, the key objective is to manage water-levels at 0-0.1m above the peat surface for as much of the year as possible. Some deeper water is inevitable due to heterogenous topography of the cutaway. This measure can be particularly effective as outfall pipes generally run perpendicular to field drains to catch and transport water off the bog. The outfalls have been piped through high fields. Blocking pipes at the high fields means that the high fields can be converted to natural berms or embankments, creating a compartmented wetland.

An Excavator is used to form a key on either side of the drain which forms the outfall from the bog or field. A strip of peat is taken from the centre of the adjacent field, pushed into the drain and compacted by the bull-dozer tracking over the drain block from the opposite side of the drain to the excavator. The approximate width of the block is 3-5 times the width of the drain. Blocks have to be wide enough to prevent water moving around the blockage and to prevent further leakage when the block subsides. Where possible and available, vegetation is used to cover the peat forming the outfall blockage. This measure is strongly linked with the next in respect of water level management.

3. Managing water levels with overflow pipes (Plate 2-2; Appendix 2, PCAS-0100-014)

This prescription is associated strongly with the blocking of outfalls. Following the blocking of outfalls, some high fields may require overflow pipes to be installed to manage water levels at the required height above peat surface and/or in instances where a series of high fields have been flooded using the cascade effect, the lowermost field may require the outfall to be piped and managed to facilitate access for example.

The first step is to block the existing drain where the pipe exits to stop flows. A new transverse field drain and pipe is then placed above the route of the previously blocked and now redundant pipe, to a specified invert level. The drain holding the new, raised pipe, is filled in using an excavator or bulldozer as appropriate.

Plate 2-2: Examples of installed overflow pipes

4. 5m wide peat dams (2-3/100m) (Appendix 2, PCAS-0100-019)

This method is adopted within areas where the drains are wider and deeper and a more substantial drain block is required to retain the higher volumes of retained water (e.g. in areas where sod moss production was previously carried out). It will follow the methodology described under 1. (more intensive drain blocking (max 7/100m)), but the peat dams are a minimum of 5 metres in width and compacted in layers by tracking the excavator over the dam to create a more robust drain block.

Marginal land rehabilitation packages

Depending on the habitat, marginal land might require drainage of different intensities to manage suitable hydrological conditions (Table 2-2).

Table 2-2: Extent of marginal land rehabilitation proposed at Glenlough

Marginal Land		Extent (Ha)
MLT1	No work required	10.34
MLT2	More intensive drain blocking (max 7/100 m)	55.4

Some of the marginal land will require no work, while more intensive drain blocking (max 7/100m) is prescribed for other areas. This method has been described in the *deep peat cutover bog rehabilitation* packages section above.

2.2.2.2 Timescale

- Decommissioning activities will be completed within a period of 12 months but may be phased across 2 calendar years and are scheduled to be completed before the end of 2022.
- Rehabilitation activities will be completed within a period of approximately 7 months. In general, activities will be carried out between the months of April and October inclusive.
- The decommissioning stage may overlap rehabilitation activities.
- The duration of activities provided are approximate and may be slightly shorter or longer, depending on weather conditions and progress on rehabilitation prescriptions. Activities may cease for the winter months due to rainfall and poor ground conditions. In any case, the rehabilitation period will not be longer than 1 year.
- Normal working times will be daylight hours between 08.00 and 17.30hrs Monday to Friday.

2.2.2.3 Use of natural resources

- There is no land requirement in respect of decommissioning.

- In total, rehabilitation activities will take place on 320.31 Ha of land. As rehabilitation through stabilisation and land cover change is the primary objective, no 'negative quality' land take is associated with rehabilitation. No land take is required for e.g., the storage of vehicles – vehicles are typically left in situ at points of work or on 'headlands'.
- No additional water is required for either decommissioning or rehabilitation.
- Regarding decommissioning, some peat or topsoil material which is contaminated may be removed in line with Schedule 2 of the IPC license. This is considered negligible in magnitude.
- During rehabilitation, minor quantities of existing peat will be excavated from drainage trenches and/or an immediately adjacent borrow pit at peat dam locations and immediately used to form peat dams. Borrow pits are re-instated, as the final step in dam creation, by the excavator driver profiling the surrounding peat/scraw into place over the excavated borrow pit. In each instance the magnitude of extracted peat is negligible. Similarly, the installation of overflow pipes may require excavation of minor quantities of peat, and/or subsoil dependent on location (Insertion of peat blockages/overflow pipes may interact with underlying subsoils where peat depths are shallow). All material used will be from the immediate vicinity and no transport of material will be required.
- Dozers may be used to infill drains with peat displaced by screw levelling. Peat will also be utilised to infill any blocked outfalls or raised drainage pipes.
- Reeds and other rhizomes will be transplanted into wetland cutaway.
- Hydrocarbons will be used on-site during rehabilitation activities and will be limited to the diesel or petrol fuel and mechanical oils used by any onsite site machinery and equipment.
- Fertilisers may be used to treat high fields and headlands to encourage natural colonisation.

Emissions and wastes

- Dust, noise and localised vibration along access routes arising from the arrival and departure of decommissioning vehicles or rehabilitation machinery will be localised to the access tracks or rail line, occur in low volumes and last for a negligible duration – it is common practice on BnM working bogs to leave vehicles in situ once on site, therefore daily trips into and out of the bog are not expected. Dust and noise limits are currently set on IPC licenses.
- Regarding rehabilitation, the extent of dust, noise and localised vibration from individual machines creating peat dams to block drains or blocking outfalls is momentary in duration and therefore considered negligible in magnitude. Creating 'speed bump' blockages or infilling drains produces a higher potential for the release of dust, however the duration of this is expected to be brief (i.e., with effects lasting less than a day).
- Fuel and some pipes may require to be delivered. No blasting or piling is required.
- General waste will arise from the presence of staff. Very small quantities of chemical waste will be generated, this waste is limited to solid waste oil, such as oily rags.

2.2.3 Operational stage

Operational activities

- Operational activities will mainly comprise non-intrusive environmental & ecological monitoring (including surface water monitoring, vegetation monitoring but also the use of drones to provide catalogues of aerial photography) and may also include minimal works such as repairs to existing peat blockages, adjustment of overflow pipes (where required) and fertilisation to increase successional rates.
- Maintenance of silt ponds to reduce emissions to local water bodies, as conditioned by the existing IPC license.
- Access will be from the south of the site.

Timing and duration of operational activities

- It is expected that scheduled inspection and maintenance activities will be carried out by a 2-4 person team, typically for 1 day per month, for the foreseeable future.
- Once constructed and commissioned, the proposed decommissioning and rehabilitation will remain permanently in place.

Use of natural resources

- There is limited requirement for the use of natural resources – negligible quantities of peat or subsoil may be used to repair existing or create additional drain blocks.

Emissions and wastes

- There will be negligible exhaust fumes, dust and noise emitted by maintenance vehicles and or other equipment such as drones during occasional maintenance works, such as to outflows.
- Collectively, re-wetting and re-vegetating will minimise any risk of emission to air from dust. During the operational stage of peatland rehabilitation, typical emission of dust from exposed peat to air is expected to cease.
- Following rehabilitation and into the early operational stage Glenlough Bog may continue to be a carbon source, however as habitats stabilise following intervention, the bog is expected to, over time, become a carbon sink in part.

2.3 Description of the baseline ecological environment

Assessing the impacts of any project and associated activities requires an understanding of the ecological baseline conditions prior to and at the time of the project proceeding. Ecological Baseline conditions are those existing in the absence of proposed activities (CIEEM, 2018).

Bord na Móna carried out a baseline ecological survey of all of its properties in 2009-2012 and developed habitat maps. As part of this exercise, Glenlough Bog was surveyed in 2012. Additional ecological walkover surveys and visits have taken place at Glenlough Bog between 2013-2021 to inform rehabilitation planning, where required. A final site visit to inform the current Rehab Plan took place by BNM Ecologists in October of 2021 and habitat maps have been updated, where required. This rehabilitation plan is informed by the original baseline survey as well as subsequent confirmatory site walk-over surveys and visits, and updates to baseline data.

Habitat mapping followed best-practise guidance from Smith *et al.* (2011). General marginal habitats and other habitats that had not been modified significantly by industrial peat extraction were classified using Fossitt *et al.* (2000). Plant nomenclature for vascular plants follows Stace (2010), while mosses and liverworts nomenclature follows Atherton *et al.* (2010). A more detailed BnM classification system was previously developed for classifying pioneer cutaway habitats as Fossitt categories were deemed not to be detailed enough for cutaway bog (much of cutaway bog could be classified as Cutover Bog - PB4). Much of the pioneer cutaway vegetation is still at an early stage of its development and cannot be assigned to Fossitt Level 3 categories yet.

A detailed ecological survey report for Glenlough Bog is contained in Appendix II of Appendix 1.

A walkover survey was conducted on the 11th of February 2022 by Inga Reich to confirm the ecological baseline as identified by Bord na Móna in the preceding surveys and as shown in the habitat map (Figure 2-2).

2.3.1 Habitats

Glenlough bog can be sub-divided into two main sections for the purpose of reporting, north and south. These sections are divided by a drainage channel that runs east west through the central area of the site.

The southern section was ditched by BnM in preparation of peat extraction. The eastern portion of the southern section has been subject to sod moss or horticultural peat extraction. Large trench drains 2-4.5m width are a legacy of the peat extraction techniques used in this area. The western portion of the southern section contains standard bog drains. The area to the west is dominated by degraded raised bog vegetation communities (Plate 2-3). The area to the east containing trench drains is a mosaic of bare peat and pioneering heather vegetation dominated communities (Plate 2-4). There is some open water in the larger drains (Plate 2-5). There is moderate to strong *Sphagnum* cover throughout the southern section of Glenlough Bog.

The northern section is largely dominated by degraded raised bog vegetation communities. This area contains a large extent of high bog that has been ditched but still retains typical raised bog characteristics (that qualifies as the Annex I EU Habitats Directive habitat – 'degraded raised bogs still capable of regeneration' (7120)). However, to the east of this section, horticultural peat extraction has created trench drains. This area is a mosaic of bare peat and pioneering heather vegetation communities and some open water areas in the large drains. In the extreme northern portion of the northern section, an area where no ditching has taken place persists. This area is quite wet, and is currently in good condition with *Sphagnum* lawns, pools and hummocks present. This area could be considered analogous to Annex I Active raised bog (7110). *Sphagnum fuscum*, Long leaved Sundew (*Drosera anglica*) and Northern Clubmoss (*Huperzia selago*) are present in this area.

The central area of Glenlough bog contains an active drainage channel that divides the north and south of the site. The drainage channel runs east from the extreme west of the bog, through the middle of the site before turning south and taking water to the central area between the two southern lobes of the bog. The

vegetation close to this drainage channel can be characterised as flushed. Willow (*Salix* spp.), Birch (*Betula* spp.) and Gorse (*Ulex europaeus*) are frequent. Heather (*Calluna vulgaris*), Bog Myrtle (*Myrica gale*), Purple Moor-grass (*Molinia caerulea*) and Wood Rush (*Luzula* spp.) dominate the ground cover in this area (Plate 2-5).

The margins of the BnM property include some habitat areas including remnant raised bog (PB1), scrub (WS1) and Birch woodland (WN7).

2.3.2 Fauna

NBDC and BnM records for bird species of immediate conservation concern at Glenlough Bog or within 1Km of the site. Breeding season records include House Martin, Sand Martin, Barn Swallow, Black-headed Gull, Kingfisher, Grasshopper Warbler, Linnet, Kestrel, Redshank, Sandpiper, Snipe, Starling, Swift, Little Grebe, Eurasian Woodcock, House Sparrow, Meadow Pipit, Peregrine Falcon, Sky Lark and Spotted Flycatcher. There are also breeding season records for Eurasian Curlew. However, the last record of breeding curlew at Glenlough Bog is from 2011. BnM have surveyed the bog for Curlew in recent years but no more observations of the species have been made. Winter season bird records include Teal, Wigeon, Gadwall, Tufted Duck, Whooper Swan, Hen Harrier, Goldeneye, Coot, Pochard, Northern Pintail, Northern Shoveler and Water Rail.

Badger, hare and deer species field signs were observed throughout the bog by BnM ecologists during a walkover survey in September 2021 as was common frog. White tailed bumblebee, Garden Bumblebee and Common Darter were also recorded on Glenlough Bog by BnM ecologists.

2.3.3 Drainage and connection to European Sites

Glenlough forms part of the Upper Shannon Catchment and is primarily situated within the Inny [Shannon]_SC_050 sub-catchment. The bog contains several drainage pathways and discharge locations, including into the Clontymullan and Aghnavealoge to the south and into the Comoge to the north-east. The Clontymullen and Aghnavealoge stream merge with the River Inny south of the perimeter boundary of Glenlough Bog. This river flows into Lough Ree SAC and SPA after about 30km. The Comoge stream is situated adjacent and to the north of the bog and flows north-eastwards and into Glen Lough SPA.

2.3.4 Consequences of proposed rehabilitation for current habitats

Glenlough Bog has the potential to develop active raised bog analogous to the priority EU Habitats Directive Annex I habitat within the foreseeable future (c.50 years). However, only a proportion of the bog has potential to develop *Sphagnum*-rich habitats and active raised bog (about 40 ha based on hydrological modelling) in this timeframe. Nevertheless, re-wetting across the entire bog, as part of the Scheme, will improve habitat conditions of the whole bog

Habitats currently evaluated as not requiring rehabilitation (i.e., marginal land) will remain in line with existing baseline trends for these habitats.

Plate 2-3 View of degraded raised bog in the south-west of the site

Plate 2-4 View of dry, heather dominated vegetation in the south-east of the site

Plate 2-5 Trench drain filled with open water with reed mace and bog cotton vegetation

Plate 2-6 View of flushed vegetation around the center of the site dominated by Purple Moor-grass and Bog Myrtle with occassional birch

Drawing Title

Glenlough Bog Habitat Map

Project Title

Bord na Mona Bog Rehabilitation

Drawn By	Checked By
IR	PR
Project No.	Drawing No.
211019	3-1
Scale	Date
1:15000	09.02.2022

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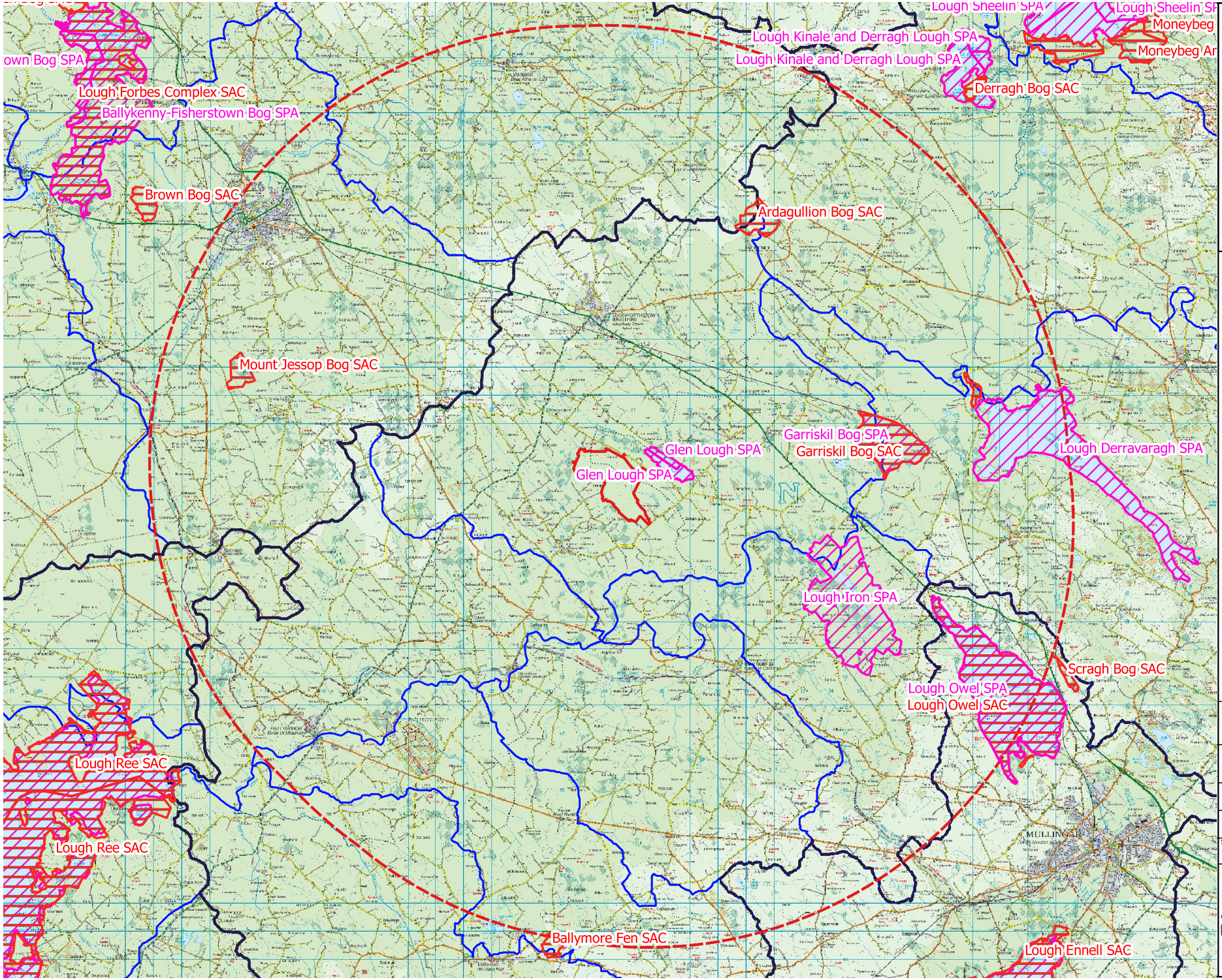
3. IDENTIFICATION OF RELEVANT EUROPEAN SITES

3.1 Identification of the European Sites within the Likely Zone of Impact

The following methodology was used to establish which European Sites are within the Likely Zone of Impact of the proposed development:

- Initially the most up to date GIS spatial datasets for European designated sites and water catchments were downloaded from the NPWS website (www.npws.ie) and the EPA website (www.epa.ie) on the 10/02/2022. The datasets were utilized to identify European Sites which could feasibly be affected by the proposed development.
- All European Sites within a distance of 15km surrounding Glenlough Bog were identified and are shown on Figure 3.1. In addition, the potential for connectivity with European Sites at distances of greater than 15km from the site was also considered in this initial assessment. In this case, no potential for the proposed works to result in significant effects on sites located at a distance of over 15km from Glenlough Bog was identified.
- The catchment mapping was used to establish or discount potential hydrological connectivity between Glenlough Bog and any European Sites. The hydrological catchments are also shown in Figure 3.1.
- In relation to Special Protection Areas, in the absence of any specific European or Irish guidance in relation to such sites, the Scottish Natural Heritage (SNH) Guidance, *'Assessing Connectivity with Special Protection Areas (SPA)'* (2016) was consulted. This document provides guidance in relation to the identification of connectivity between proposed development and Special Protection Areas. The guidance takes into consideration the distances species may travel beyond the boundary of their SPAs and provides information on dispersal and foraging ranges of bird species which are frequently encountered when considering plans and projects.
- Table 3-1 provides details of all relevant European Sites as identified in the preceding steps and assesses which are within the likely Zone of Impact. The assessment considers any likely direct or indirect impacts of the rehabilitation works, both alone and in combination with other plans and projects, on European Sites by virtue of the following criteria: size and scale, land-take, distance from the European Site or key features of the site, resource requirements, emissions, excavation requirements, transportation requirements and duration of the works were considered in this screening assessment.
- The site synopses and conservation objectives of these sites, as per the NPWS website (www.npws.ie), were consulted and reviewed at the time of preparing this report 10/02/2022.
- Where potential pathways for Significant Effect are identified, the site is included within the Likely Zone of Impact and considered in the Screening Assessment.



Map Legend

- Site boundary
- 15km Buffer
- Special Area of Conservation
- Special Protection Area
- Hydrological Catchment
- Hydrological Subcatchment

Drawing Title

European Sites within 15km radius of Glenlough Bog

Project Title

Bord na Mona Bog Rehabilitation

Drawn By	Checked By
IR	PR
Project No.	Drawing No.
211019	3-1
Scale	Date
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Table 3-1: Identification of European Sites within Likely Zone of Impact

European Sites and distance from Glenlough Bog	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie on the 10/02/2022)	Conservation Objectives	Likely Zone of Impact Determination
Special Area of Conservation			
Garriskil Bog SAC [000679] **Distance:** 7.4km	› [7110] Active raised bogs › [7120] Degraded raised bogs still capable of natural regeneration › [7150] Depressions on peat substrates of the Rhynchosporion	Detailed conservation objectives for this site (Version 1, November 2015) were reviewed as part of the assessment and are available at www.npws.ie	There will be no direct effects on this SAC as the project footprint is located entirely outside the designated site. Due to the terrestrial nature of the QI habitats and distance from the site, no complete source-impact-pathway was identified. As such, there is no potential for indirect effects to occur. **This site is not in the Likely Zone of Impact and no further assessment is required.**
Ardagullion Bog SAC [002341] **Distance:** 8.9km	› [7110] Active raised bogs › [7120] Degraded raised bogs still capable of natural regeneration › [7150] Depressions on peat substrates of the Rhynchosporion	Detailed conservation objectives for this site (Version 1, November 2015) were reviewed as part of the assessment and are available at www.npws.ie	There will be no direct effects on this SAC as the project footprint is located entirely outside the designated site. Due to the terrestrial nature of the QI habitats and distance from the site, no complete source-impact-pathway was identified. As such, there is no potential for indirect effects to occur. **This site is not in the Likely Zone of Impact and no further assessment is required.**

European Sites and distance from Glenlough Bog	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie on the 10/02/2022)	Conservation Objectives	Likely Zone of Impact Determination
Lough Owel SAC [000688] **Distance:** 10.3km	› [3140] Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. › [7140] Transition mires and quaking bogs › [7230] Alkaline fens › [1092] *Austropotamobius pallipes* (White-clawed Crayfish)	Detailed conservation objectives for this site (Version 1, May 2018) were reviewed as part of the assessment and are available at www.npws.ie	There will be no direct effects on this SAC as the project footprint is located entirely outside the designated site. Due to the absence of a hydrological connection and the distance from the site, no complete source-impact-pathway was identified for any of the QI habitats or the QI species. As such, there is no potential for indirect effects to occur. **This site is not in the Likely Zone of Impact and no further assessment is required.**
Mount Jessop Bog SAC [002202] **Distance:** 11.6km	› [7120] Degraded raised bogs still capable of natural regeneration › [910D] Bog woodland	This site has the generic conservation objective: 'To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.' (NPWS (2021) Conservation objectives for Mount Jessop Bog SAC [002202] Generic	There will be no direct effects on this SAC as the project footprint is located entirely outside the designated site. Due to the terrestrial nature of the QI habitats and the distance from the site, no complete source-impact-pathway was identified. As such, there is no potential for indirect effects to occur. **This site is not in the Likely Zone of Impact and no further assessment is required.**

European Sites and distance from Glenlough Bog	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie on the 10/02/2022)	Conservation Objectives	Likely Zone of Impact Determination
		Version 8.0. Department of Culture, Heritage and the Gaeltacht.)	
Ballymore Fen SAC [002313] **Distance:** 14.9km	› [7140] Transition mires and quaking bogs	Detailed conservation objectives for this site (Version 1, October 2018) were reviewed as part of the assessment and are available at www.npws.ie	There will be no direct effects on this SAC as the project footprint is located entirely outside the designated site. Due to the terrestrial nature of the QI habitats and the distance from the site, no complete source-impact-pathway was identified. As such, there is no potential for indirect effects to occur. **This site is not in the Likely Zone of Impact and no further assessment is required.**
Special Protection Area			
Glen Lough SPA [004045] **Distance:** 0.4km	› [A038] Whooper Swan (*Cygnus cygnus*)	This site has the generic conservation objective: '*To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA'*	There will be no direct effects on this SPA as the project footprint is located entirely outside the designated site. The Comoge, into which part of the bog drains, flows through this SPA and a potential pathway for effect on supporting habitats for Whooper Swan was identified. However, the objective of the works involved in the D & R is to stabilise the bog. These works are specifically designed to reverse the drainage of the bog and to minimise the run-off of waters from it. The works will

European Sites and distance from Glenlough Bog	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie on the 10/02/2022)	Conservation Objectives	Likely Zone of Impact Determination
		(NPWS (2021) Conservation objectives for Glen Lough SPA [004045] Generic Version 8.0. Department of Culture, Heritage and the Gaeltacht.)	be short term and will involve an estimated six machines/crews working at any one time on the bog for an expected period of 2 years. There is no potential for these works to result in significant effects on downstream watercourses and ecological receptors as the works primarily involve the blocking of drainage pathways from the bog. Following the implementation of the PCAS, there will be no possibility of further effects. As such, in the absence of any mitigation, there is no potential for any significant effect on supporting habitats as a result of water pollution or change to the hydrological regime within the SPA. The potential for disturbance to Whooper Swan, where it occurs outside the SPA was also assessed. There are records for Whooper Swan from a 2km square overlapping Glenlough Bog (NBDC). However, the species is unlikely to use the site due to a lack of suitable habitat. In addition, the works are short term and will not be occurring over the entire bog at any one time, leaving much of the bog completely undisturbed. Hence, there is no potential for the works, in the absence of any mitigation, to result in significant disturbance to this SCI species. **There is no potential for significant effects on this SAC and no further assessment is required.**

European Sites and distance from Glenlough Bog	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie on the 10/02/2022)	Conservation Objectives	Likely Zone of Impact Determination
Lough Iron SPA [004046] **Distance:** 5.7km	› [A038] Whooper swan (*Cygnus cygnus*) › [A050] Wigeon (*Anas penelope*) › [A052] Teal (*Anas crecca*) › [A056] Shoveler (*Anas clypeata*) › [A125] Coot (*Fulica atra*) › [A140] Golden plover (*Pluvialis apricaria*) › [A395] Greenland White-fronted Goose (*Anser albifrons flavirostris*) › [A999] Wetland and waterbirds	This site has the generic conservation objective: *'To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA'* To acknowledge the importance of Ireland's wetlands to wintering waterbirds, this site has a second conservation objective: *'To maintain or restore the favourable conservation condition of the wetland habitat at Lough Corrib SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.'* (NPWS (2021) Conservation objectives for Lough Iron SPA	There will be no direct effects on this SPA as the project footprint is located entirely outside the designated site. Due to the absence of a hydrological connection and the distance from the site, no complete source-impact-pathway was identified for the SCI species and their associated habitats. As such, there is no potential for indirect effects to occur. The potential for disturbance to the SCI species, where they occur outside the SPA was also assessed. There is no habitat on the site for the following SCI species: › [A038] Whooper swan (*Cygnus cygnus*) › [A050] Wigeon (*Anas penelope*) › [A052] Teal (*Anas crecca*) › [A056] Shoveler (*Anas clypeata*) › [A125] Coot (*Fulica atra*) While there are no records of these species from the site, Golden Plover and Greenland White-fronted goose may occur here. However, the works will not result in any loss of habitat, are short term and will not be occurring over

European Sites and distance from Glenlough Bog	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie on the 10/02/2022)	Conservation Objectives	Likely Zone of Impact Determination
		[004046] Generic Version 8.0. Department of Culture, Heritage and the Gaeltacht.)	the entire bog at any one time, leaving much of the bog completely undisturbed. Hence, there is no potential for the works, in the absence of any mitigation, to result in significant disturbance to these SCI species. **There is no potential for significant effects on this SPA and no further assessment is required.**
Garriskil Bog SPA [004102] **Distance:** 7.4km	› [A395] Greenland White-fronted Goose (*Anser albifrons flavirostris*)	This site has the generic conservation objective: '*To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA'* (NPWS (2021) Conservation objectives for Garriskil Bog SPA [004102] Generic Version 8.0. Department of Culture, Heritage and the Gaeltacht.)	There will be no direct effects on this SPA as the project footprint is located entirely outside the designated site. Due to the absence of a hydrological connection and the distance from the site, no complete source-impact-pathway was identified for the SCI species and its associated habitats. As such, there is no potential for indirect effects to occur. The potential for disturbance to the SCI species, where it occurs outside the SPA was also assessed. While there are no records of this species from the site, Greenland White-fronted goose may occur here. However, the works will not result in any loss of habitat, are short term and will not be occurring over the entire bog at any one time, leaving much of the bog completely undisturbed. Hence, there is no potential

European Sites and distance from Glenlough Bog	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie on the 10/02/2022)	Conservation Objectives	Likely Zone of Impact Determination
			for the works, in the absence of any mitigation, to result in significant disturbance to this SCI species. **There is no potential for significant effects on this SPA and no further assessment is required.**
Lough Owel SPA [004047] **Distance:** 10.3km	› [A056] Shoveler (*Anas clypeata*) › [A125] Coot (*Fulica atra*) › [A999] Wetland and waterbirds	This site has the generic conservation objective: *'To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA'* To acknowledge the importance of Ireland's wetlands to wintering waterbirds, this site has a second conservation objective: *'To maintain or restore the favourable conservation condition of the wetland habitat at Lough Corrib SPA as a resource for the regularly-*	There will be no direct effects on this SPA as the project footprint is located entirely outside the designated site. Due to the absence of a hydrological connection and the distance from the site, no complete source-impact-pathway was identified for the SCI species and their associated habitats. As such, there is no potential for indirect effects to occur. The potential for disturbance to the SCI species, where they occur outside the SPA was also assessed. While there is a record for Coot from a 2km square partially overlapping Glenlough Bog (NBDC), the species is unlikely to use the site due to a lack of suitable habitat, as is Shoveler. In addition, the works are short term and will not be occurring over the entire bog at any one time, leaving much of the bog completely undisturbed. Hence, there is no potential for the works, in the absence of any mitigation, to result in significant disturbance to these SCI species.

European Sites and distance from Glenlough Bog	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie on the 10/02/2022)	Conservation Objectives	Likely Zone of Impact Determination
		occurring migratory waterbirds that utilise it.' (NPWS (2021) Conservation objectives for Lough Owel SPA [004047] Generic Version 8.0. Department of Culture, Heritage and the Gaeltacht.)	**There is no potential for significant effects on this SPA and no further assessment is required.**
Lough Derravaragh SPA [004043] **Distance:** 11.6km	› [A038] Whooper Swan (*Cygnus cygnus*) › [A059] Pochard (*Aythya ferina*) › [A052] Tufted Duck (*Aythya fuligula*) › [A125] Coot (*Fulica atra*) › [A999] Wetland and waterbirds	This site has the generic conservation objective: *'To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA'* To acknowledge the importance of Ireland's wetlands to wintering waterbirds, this site has a second conservation objective: *'To maintain or restore the favourable*	There will be no direct effects on this SPA as the project footprint is located entirely outside the designated site. Due to the absence of a hydrological connection and the distance from the site, no complete source-impact-pathway was identified for the SCI species and their associated habitats. As such, there is no potential for indirect effects to occur. The potential for disturbance to the SCI species, where they occur outside the SPA was also assessed. Glenlough Bog is outside the core range of Whooper Swan (<5km; SNH 2016). While there is a record for Coot from a 2km square partially overlapping Glenlough Bog (NBDC), the

European Sites and distance from Glenlough Bog	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie on the 10/02/2022)	Conservation Objectives	Likely Zone of Impact Determination
		conservation condition of the wetland habitat at Lough Corrib SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.' (NPWS (2021) Conservation objectives for Lough Derravarragh SPA [004043] Generic Version 8.0. Department of Culture, Heritage and the Gaeltacht.)	species is unlikely to use the site due to a lack of suitable habitat, as are Pochard and Tufted Duck. In addition, the works are short term and will not be occurring over the entire bog at any one time, leaving much of the bog completely undisturbed. Hence, there is no potential for the works, in the absence of any mitigation, to result in significant disturbance to these SCI species. **There is no potential for significant effects on this SPA and no further assessment is required.**

3.2 European Sites with the potential to be significantly affected by the PCAS activities

No European Site has the potential to be significantly impacted by the proposed works.

3.3 Likely cumulative impact of the PCAS activities on European Sites, in-combination with other plans and projects

3.3.1 Review of other plans and projects

The potential for the rehabilitation works to contribute to a cumulative impact on European Sites was considered. The following plans and projects were considered for their potential to result in in-combination effects:

- The Planning Application Finders of Longford and Westmeath County Council were consulted on the 14.02.2022 and a number of mostly small-scale proposed or consented developments were found within 5km of Glenlough Bog. Larger projects that were considered include an application for the filling of lands with clean, inert soil and stone for the purposes of the restoration of a 10.4 hectare quarry to agricultural use; and all associated ancillary facilities at Tennalough, Carrickboy, Co Longford. This development also requires a Waste Facility Permit and an application will be made to Longford County Council for a Waste Facility Permit.
- Bord na Móna provided a GIS shapefile of bogs where decommissioning and rehabilitation activities are scheduled to occur within the same timeframe as in Glenlough Bog. Three bogs within the Mount Dillon bog group, that share downstream connectivity to European Sites, were identified, namely Knappoge, Begnagh and Clooneeny.
- Parts of Glenlough Bog (within and outside the areas owned and under the control of Bord na Móna) are currently being used by domestic turf cutters to harvest peat. These areas are ecologically and hydrologically linked to the area owned by Bord na Móna where rehabilitation is planned. In addition, unauthorised turbary is likely to occur at various locations within 15km of Glenlough Bog, including several locations where the pathways for downstream in combination effects on European Sites may exist, primarily via drainage to EPA blue line watercourses.
- There is a current ongoing NPWS Raised Bog Restoration Project, however, there are no raised bogs within 15 km of Glenlough Bog, where restoration might overlap with the D & R activities in 2022.
- The County Longford Heritage Plan 2019-2024, Longford County Development Plan 2021-2027 and Westmeath County Development Plan 2021-2027 were also consulted and considered as part of this assessment. CPO 3.9 of the Longford County Development Plan 2021-2027 explicitly states 'Support collaboration between local authorities, the Midland Regional Transition Team and relevant stakeholders and the development of partnership approaches to integrated peatland management for a just transition that incorporates any relevant policies and strategies such as the Bord na Móna Biodiversity Plan 2016-2021 and the national Climate Mitigation and Adaptation Plans. This shall include support for the rehabilitation and/or re-wetting of suitable peatland habitats.' Similar is CPO 12.69 of the Westmeath County Development Plan 2021-2027 'Support collaboration between Local Authorities, the Bord na Mona Transition Team and relevant stakeholders in the development of partnership approaches to integrated peatland management for a just transition having regard to relevant policies and strategies such as the Bord na Móna Biodiversity Plan 2016-2021 and the national Climate Mitigation and Adaptation Plans. This shall include support for the rehabilitation and/or re-wetting of suitable peatland habitats.'

3.3.2 Conclusion of in-combination/cumulative assessment

Due to the nature, scale and short-term duration of the PCAS activities, no pathway or mechanism for the proposed works to result in any significant effect on any European Site was identified when considered on its own during the assessment process and therefore there is no potential for it to contribute to any such effects when considered in-combination with any other development or works.

The review of plans and projects that is described above did not reveal any additional potential pathways for effect on European Sites that may have arisen as a result of those plans or projects.

4. ARTICLE 6(3) APPROPRIATE ASSESSMENT SCREENING STATEMENT AND CONCLUSIONS

The findings of this Screening Assessment are presented following the European Commission's 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 Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018) as well as the Department of the Environment's Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (DoEHLG, 2010).

4.1 Data collected to carry out assessment

In preparation of the assessment, the following sources were used to gather information:

- Review of NPWS Site Synopses, mapping and Conservation Objectives for the various European Sites within the Likely Zone of Impact.
- Review of 2019 EU Habitats Directive (Article 17) Report.
- Review of OS maps and aerial photographs of the site of the proposed development.
- Review of online web-mappers: National Parks and Wildlife Service (NPWS), Environmental Protection Agency (EPA), Water Framework Directive (WFD).
- Review of relevant databases including National Biodiversity Ireland Database (NBDC).
- Review of other plans and projects within the area.
- Review of location and layout mapping for proposed rehabilitation.
- Review of the results of previous ecological surveys of Glenlough Bog.
- Review of the detailed description of proposed rehabilitation measures, including methodologies specific to the main categories of land types under consideration.
- Review of BnM's Peatland Climate Action Scheme Environmental Management Plan.
- Liaison with Sorcha Cahill from Bord na Móna.
- Site visit conducted by Inga Reich on 11/02/2022.

4.2 Concluding statement

It is concluded beyond reasonable scientific doubt, in view of best scientific knowledge, on the basis of objective information and in light of the conservation objectives of the relevant European Sites, that the proposed works, individually or in combination with other plans and projects, will not have a significant effect on any European Site.

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