



Edera Bog

**Cutaway Bog Decommissioning and Rehabilitation Plan
2021**

Addendum 1

Document Control Sheet

Document Name:	Esker Bog Decommissioning and Rehabilitation Plan 2021 – Addendum 1					
Document File						
Path:						
Document Status:	Final					
This document comprises:	DCS	TOC	Text (Body)	References	Maps	No. of Appendices
Rev.	1.0	Author(s):	Checked By:		Approved By:	
Name(s):		CC	MMC		MMC	
Date:		19/05/2021	20/05/2021		20/05/2021	

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1. INTRODUCTION

Bord na Móna operates under IPC Licence issued and enforced by the EPA to extract peat within the Mount Dillon bog group (Ref. P0504-01). As part of Condition 10.2 of this license, a rehabilitation plan must be prepared for permanent rehabilitation of the boglands within the licensed area.

This report – *Edera Bog Decommissioning and Rehabilitation Plan 2021 – Addendum 1* – should be read in conjunction with – *Edera Bog Decommissioning and Rehabilitation Plan 2021*.

This report - Edera Bog Decommissioning and Rehabilitation Plan 2021 – Addendum 1 - outlines the findings of the Appropriate Assessment reporting carried out in respect of proposed PCAS activities at Edera Bog, and reproduces the mitigation measures that are listed in the Natura Impact Assessment of the Edera Bog Decommissioning and Rehabilitation Plan 2021¹.

This include, where relevant, both bespoke measures designed to mitigate the potentially adverse effects identified in the Appropriate Assessment reporting but also any Best Practice measures which also mitigate the potential for adverse effects on European Sites.

All such measures are to be implemented as part of an Environmental Management Plan (hereafter EMP) to be overseen by PCAS staff.

Additionally it is acknowledged that IPC license conditions (Conditions 2.2, 2.4, 2.5, 3.2, 4.1, 4.2, 4.4, 4.5, 4.6, 6.0, 9.0, 11.0, 12.0, 13.0, schedule 1, 3, & 4 of the Mount Dillon IPC Licence) are already in place and will be implemented.

2. APPROPRIATE ASSESSMENT REPORTING FINDINGS

Appropriate Assessment Stage One Screening of all European sites identified within a 15km radius of the proposed development evaluated that the potential for significant effects on the Special Conservation Interests or Qualifying Interests of 2 no. European Sites (Lough Ree SAC and Lough Ree SPA) could not be excluded. In particular, the potential for indirect effects via a deterioration in water quality, and from disturbance to /displacement to fauna (notably Otter).

Thus, the respective elements were brought forward for further critical examination in the Natura Impact Statement Report to inform the Appropriate Assessment process.

Following examination and analysis, the potential for adverse effects was identified in respect of the following pathways:

- disturbance and displacement of Whooper Swan, Little Grebe, Tufted Duck, Mallard, Coot and SCI water bird species: and for mortality to Little Grebe and Tufted Duck for which Lough Ree SPA is designated

¹ Jennings O 'Donovan Ltd (2021) Cutaway Bog Decommissioning and Rehabilitation Plan Natura Impact Statement
Edera Bog,Co. Longford

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- degradation of natural lake habitat of Lough Ree SAC; and
 - disturbance and/or displacement of the otter population of Lough Ree SAC

Mitigation was detailed in respect of the above and it was concluded that following the implementation of same in line with the protocols set out in the NIS, there were no significant effects identified which would adversely affect the special conservation interests or conservation objectives of the Lough Ree SPA with regard to the densities, range or conservation status of the waterbird species and their supporting wetland habitats.

Similarly, there were no significant effects identified which would adversely affect the natural eutrophic lake habitat or otter population of the Lower River Shannon SAC under consideration with regard to the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which this SAC has been selected.

The implementation of the PCAS scheme at Edera Bog will not give rise to adverse effects on the integrity of any of the identified European sites evaluated in the NIS.

3. APPROPRIATE ASSESSMENT MITIGATION

The following sub-sections re-produce from the NIS the range of mitigation measures that will be implemented during the PCAS and form part of the PCAS design.

3.1 Description of the Measure

3.1.2 Best Practice Environmental Control Measures to be applied to Decommissioning and Rehabilitation Works.

The following Best Practice Environmental Control measures are to be applied as standard to ensure compliance with IPC license Conditions:

- Bog restoration/rehabilitation works will be restricted to within the footprint of the proposed rehabilitation works area.
 - The proposed rehabilitation works will have due regard to noise limits and hours of operation (i.e. dusk and dawn) to minimise any potential disturbance on resident and local fauna that utilise the site and immediate environs.
 - All plant and equipment for use will comply with the Construction Plant and Equipment Permissible Noise Levels Regulations (SI 359/1996).
 - The proposed works will be restricted to daylight hours and there will be no requirement for artificial lighting.
 - Silt ponds will be inspected and maintained as per the IPC Licence.
 - During periods of heavy precipitation and run-off, works will be halted.
 - Works will be carried out using a suitably sized machine and, in all circumstances, excavation depths and volumes will be minimised where possible.
 - All machines will be regularly checked and maintained prior to arrival at the site to prevent hydrocarbon leakage.
 - Hoses and valves will be checked regularly for signs of wear and will be closed and securely locked when not in use.
 - Fuelling and lubrication of equipment shall only be carried out in designated areas away from surface water drainage features and ecologically sensitive areas.
 - Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the site for disposal or re-cycling.
 - All waste will be sorted by the works crews, managed within the site in designated waste disposal facilities, and removed to a licenced waste facility, in line with BnM Standard operating practice.
 - Vehicles will never be left unattended during refuelling.
 - No direct discharges to waters will be made. No washings from vehicles, plant or equipment will be carried out on site.
 - All plant refuelling will take place using mobile fuel bowzers. Only dedicated trained and competent personnel will carry out refuelling operations.
 - All fuels required for machinery and equipment will be stored in a designated location, away from main traffic activity, at the nearest BnM Compound. All fuel will be stored in bunded, locked storage containers. Diesel or petrol fuel and mechanical oils will also be used by site vehicles.
 - Mobile storage such as fuel bowzers will be bunded to 110% capacity to prevent spills. Tanks for bowzers and generators shall be double skinned. When not in use, all valves and fuel trigger guns
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from fuel storage containers will be locked. All pumps using fuel or containing oil will be locally and securely banded where there is the possibility of discharge to waters.

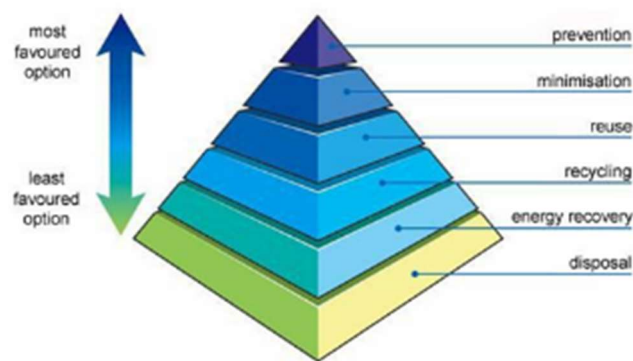
- Potential impacts caused by spillages etc. during rehabilitation works will be reduced by keeping spill kits and other appropriate equipment on-site.
- Site works will be carried out in accordance with 'best practice'. In order to ensure compliance and implementation of 'best practice', these measures will be communicated to relevant Bord na Móna staff and updated as required.
- All waste water will be removed by a licenced waste contractor to a licenced waste water treatment facility.
- Any fertiliser used will be Rock Phosphate and will not be applied in the following conditions:
 1. The land is waterlogged
 2. The land is flooded, or it is likely to flood
 3. The land is frozen, or covered with snow
 4. Heavy rain is forecast within 48 hours (forecasts will be checked from Met Éireann)
 5. The ground slopes steeply and there is a risk of water pollution, when factors such as surface run-off pathways, the presence of land drains, the absence of hedgerows to mitigate surface flow, soil condition and ground cover are taken into account.
- No fertiliser will be spread on land within 2 metres of a surface watercourse.
- Buffer zones in respect of waterbodies, as specified on <https://www.epa.ie/about/faq/name,57156,en.html>, will be adhered to at all times with regard to fertiliser application.

3.1.2 Best Practice Measures around the treatment of Waste

Condition 7 of the IPC licence for Peat Extraction at Edera Bog requires waste items to be disposed of or recovered as follows:

- 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 this licence 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 Agency.
 - Waste sent off-site for recovery or disposal shall only be conveyed to a waste contractor, as agreed by the Agency, 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 Agency at all times, shall be kept by the licensee on matters relating to the waste management operations and practices at this site. 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.
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- Details of any rejected consignments.
- A copy of this Waste Management record shall be submitted to the Agency as part of the AER for the site.
- As required by the licence, these waste items will be removed for recycling or disposal, using external contractors with the required waste collection permits, as agreed by the EPA, with waste records maintained as required for inspection by authorized persons of the EPA at all times.
- Where possible, Bord na Móna will utilize the appropriate waste hierarchy to identify waste that can be 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 licence.

3.1.3 Best Practice & Biosecurity

While it is noted that no non-native invasive species have been recorded at Edera Bog during baseline surveys the following measures will be implemented as standard best practice approach to rehab works. The potential for importation or introduction of non-native plant species (such as Japanese Knotweed, Himalayan Balsam, etc.) has been identified. Section 49 of the European Communities (Birds and Natural Habitats) Regulations 2011 prohibits the introduction and dispersal of invasive alien species (particularly plant species) listed on Part 1 (third column) of the 'Third Schedule'.

Rehabilitation and decommissioning in the bog will have due regard to the relevant biosecurity measures outlined below:

- Records of problematic invasive species within the various bog units will be marked out with signs to highlight areas of infestation to personnel.
- All plant machinery will be restricted from disturbing known colonies of invasive species.
- All plant machinery will avoid unnecessary crossings to adjoining lands.
- Good site hygiene will be employed to prevent the introduction and spread of problematic invasive alien plant species (i.e. Japanese Knotweed (*Fallopia japonica*), Himalayan Balsam (*Impatiens glandulifera*), Himalayan Knotweed (*Persicaria wallichii*), etc.) by thoroughly inspecting and washing vehicles prior to entering the works area.

The biosecurity measures outlined above are in line with best practice guidelines issued by the National Roads Authority (NRA, 2010) – The Management of Noxious Weeds and Non-native Invasive Plant Species on National Roads and broadly based on the Environment Agency's (2013) – The Knotweed Code of Practice: Managing

Japanese Knotweed on Development Sites (Version 3, amended in 2013, accessed on the Environment Agency's website on the 11th of July 2016).

In addition to the above, Best Practise measures around the prevention and spread of Crayfish plague will be adhered with throughout all rehabilitation works and activities.

- All water quality monitoring equipment which has been used in water will be treated with a disinfectant or a strong saline solution and then thoroughly dried (ideally over 24 hours) BEFORE being used in water again.
- Check, Clean, Dry protocol will be adhered with before and after visiting a river or lake for monitoring, in line with Best Practice² or for activities such as Sphagnum inoculation.
- Virkon Aquatic will be available as required.

3.1.4 Silt Ponds

Silt Ponds – 6 no. Silt ponds with a total volume of 9.1m³ are in place at Edera Bog and connected to the existing drainage network. These silt ponds, already stipulated and in use as mitigation measures in respect of Peat Extraction under IPC license, will continue to function as the primary intervention in terms of sediment release to receiving waterbodies. Regular cleaning and reporting on same, already forms part of annual (AER) reporting submitted to EPA. All Silt Ponds at Edera Bog are currently compliant with EPA requirements. Table 1 below and Figure 1 overleaf summarise and illustrate the onsite Silt Pond locations, the latter also illustrates the current flow regime within the main drainage network (into which any other drains also feed). Continued maintenance and reporting on same will be reported on annually, until IPC license Surrender.

Table 1 Silt Ponds in use at Edera Bog

Bog Name	IPC License Reference	Pond No.	Area (m ²)	Volume (m ³)
Edera Bog	504	ED105	1525	2287.0
Edera Bog	504	ED109	1343	2013.7
Edera Bog	504	ED110	387	580.2
Edera Bog	504	ED106	1068	1601.3
Edera Bog	504	ED107	962	1441.6
Edera Bog	504	ED108	811	1216.6
		Total	6096	9,140.4

² <https://www.biodiversityireland.ie/projects/invasive-species/crayfish-plague/>

3.1.5 Measures to avoid runoff when carrying out rewetting of peat

- All Silt ponds will be cleaned prior to the commencement of upstream drain blocking.
- When blocking drains or carrying out any activities which involve the potential movement of peat, terminal blocks i.e. the blocks at the extremity of the drain and closest to any hydrologically connected watercourses, will be blocked first with AT MINIMUM 2 IN SERIES STANDARD BLOCKS, to prevent sediment release from subsequent block insertion.
- Blocks will be inspected during periods of dry weather to ensure no ‘cracking’ of peat has occurred which might allow for discharge.
- Discharge from all rehabilitated areas will be directed into silt ponds.
- Outfalls and overflow pipes from e.g. bunded cells will be directed into silt ponds.
- An Emergency Response Plan has been prepared to set in place an effect approach to respond to any inadvertent release of a large volume of sediment.
- The above will be overseen by a suitably qualified Ecologist

Implementation of the mitigation measures for the Decommissioning and Rehabilitation activities will be the responsibility of Bord na Móna Operations and supervision of the works will be carried out by this Bord na Móna Department incorporating Area leaders, Operations Managers and Project Supervisor Construction Stage (PSCS).

In addition, implementation of the mitigation measures will be monitored and inspected by Bord na Móna Environmental, Ecology and Engineering Departments, who are independent of Bord Na Móna Operations. Project Ecologists, Engineers and Environmental Compliance Officers will be appointed for each bog and they will ensure that measures are carried out in accordance with a Site-Specific Environmental Management Plan which sets out the required mitigation measures for each bog. The Ecologist, Environmental Compliance Officer, Engineer, H & S Manager, Site Supervisor and PSCS will have a ‘stop works’ authority.

3.1.6 Bespoke Measures to Further Manage and Treat Surface Water

In addition to the utilisation of the existing silt ponds and surface water management infrastructure at Edera Bog, further bespoke surface water management and treatment will be provided as part of the PCAS design through the provision of wetland areas and the removal of an outfall to the Bilberry River.

The provision of the wetland areas will act as a silt control measure and thus will perform the same functional requirement as the original silt ponds, thereby introducing an additional treatment and settlement stage for surface water generated at the bog. The wetlands upstream of the outfalls will also act as a large silt sinks between high fields and thus increased sediment/silt control will be introduced to the bog by default as part of the rehabilitation measures.

The wetland areas will be inoculated with reeds (*Phragmites australis*) and other rhizomes of hydrophilous vegetation. The growth of wetland vegetation within the wetland area will function as a reedbed treatment pond that will treat surface water by removing nutrients such as ammonia and TP.

The existing outfall to the Bilberry River that does not currently flow through a silt pond will be removed and water from the existing drain feeding this outfall will be directed to the silt pond.

3.1.7 Measures to avoid changes to hydrological regime

- Peripheral drains will be subject to activities to retain their hydraulic function and where required, additional drains will be provided, to create hydraulic barriers.
- Specified internal drains will be maintained to avoid flooding where required to maintain existing drainage of adjacent lands. In some instances, this may include re-grading or widening of specific existing drains which currently act as preferential flow paths through the bog.
- Monitoring of adjacent lands will be undertaken during the operation phase of the PCAS.

3.1.8 Measure to avoid polluted runoff in the event new drains are required or existing drains require upgrade.

- Where existing drains require upgrading, barriers to control the flow of sediment downstream along the drain will be installed prior to the commencement of upgrade works.
- The barrier will comprise in the installation of a minimum 2 in series standard blocks at the downstream end of the stretch of drainage channel to be upgraded. The 2 standard blocks will be installed upstream of the receiving drainage network downstream of the channel that is to be upgraded.
- The two standard blocks will be installed during low, ebb flows in the drain prior to the commencement of upgrade works.
- The 2 drain blocks may need to be installed well in advance of the drainage channel upgrade works during ebb flows.
- The build-up of silt material upstream of the 2 standard blocks will be monitored during upgrade works and the silt material will be removed from the drainage channel during works as it builds up. The material will be compacted into the adjacent field, a minimum of 10m from the nearest drain.
- Blocks will be inspected during periods of dry weather to ensure no ‘cracking’ of peat has occurred which might allow for discharge.
- Upon completion of the upgrade works all silt will be removed from the drainage channel immediately upstream of the 2 standard drain blocks prior their removal. The 2 standard drain blocks will only be removed once all upgrade works are completed.
- Where a new drain is required, it will be formed and established prior to connecting the drainage channel to wider drainage network. Only once it has formed and become established, with the bed and banks stabilised will it be connected to the wider drainage network. This approach will minimise to a negligible level the potential for suspended solids to be generated in waters within the new drainage channel and conveyed downstream to the Lough Ree SAC and SPA.
- An Emergency Response Plan will be available in the event of any inadvertent release of a large volume of sediment.
- The above will be overseen by a suitably qualified Ecologist

Implementation of the mitigation measures for the Decommissioning and Rehabilitation activities will be the responsibility of Bord na Móna Operations and supervision of the works will be carried out by this Bord na Móna Department incorporating Area leaders, Operations Managers and Project Supervisor Construction Stage (PSCS).

In addition, implementation of the mitigation measures will be monitored and inspected by Bord na Móna Environmental, Ecology and Engineering Departments, who are independent of Bord Na Móna Operations. Project Ecologists, Engineers and Environmental Compliance Officers will be appointed for PCAS at Edera bog and they will ensure that measures are carried out in accordance with an Site-Specific Environmental Management Plan which sets out the required mitigation measures for each bog. The Ecologist, Environmental Compliance Officer, Engineer, H & S Manager, Site Supervisor and PSCS will have a 'stop works' authority.

3.1.9 Measures to Avoid Berm Failure

The possible failure of berms and drain blocks has been identified as a risk to waterbodies within and downstream of Edera Bog such as the Bilberry River and Lough Ree. An engineering specification for berms and drain blocks has been prepared for the Edera Rehabilitation Plan is provided as Appendix E to this Natura Impact Statement.

As shown on Figure 7 above a 1m high berm will be provided to protect marginal lands in WLT-3. The risk of berm failure was identified during the screening of the Edera Bog PCAS. Mitigation measures through design and through maintenance and avoidance will be implemented in order to ensure berm failure is avoided at Edera Bog.

The following measures will be implemented as part of the mitigation through design:

- It is recognized that consistency of peat and or sub-soil and its compaction in layers is important, resulting in a robust trench and berm mitigating water seepage. It should be firm enough to be shaped and compacted. Adequate compaction of the peat will be ensured.
- Prior to infilling, any loose or dried out peat in the base or sides of the drain should be removed to ensure a tight seal mitigating water seepage.
- Peat Berms are constructed circa 1000mm higher than the adjacent ground level to protect marginal lands. They are not designed to hold significant volumes of deep water and water levels will be managed at an appropriate level using pipes. They are designed to a width of 5m to be robust strong structures.
- The berm installation process includes a key formation in the drains. A 500mm deep key is formed by taking a strip of peat from the field and pushing it in to the drain where it is compacted by the bulldozer ensuring a tight seal. The excavator trims and shapes the completed berm avoiding presence of loose material exposed to wind erosion.
- Provision will be made for additional silt protection at terminal dams if deemed necessary.
- Operators assigned to this work element are familiar with the technique and process and provide effective robust berms. The operators are experienced and capable of adapting to the particular conditions encountered within the bog.
- Qualified, experienced Engineers overseeing the works during the installation phase ensure that quality procedures of the various elements are implemented and effectively meet the standards for quality service and performance.

The following measures will be implemented through maintenance and avoidance:

- A post construction lidar and imagery survey will capture the impact of the completed rehabilitation measures indicating if any appropriate remedial action is required or deemed necessary.
- As peat berms are designed to retain a shallow level of water on the cutover there will be a reduction in discharge into the boundary drains preventing any negative impacts on adjacent agricultural land. (See below ‘Emergency Failure Response’ outlining mitigation measures to be put in place should any risks of undesirable hydrological impacts occur).

3.1.10 Emergency Response Plan

The Emergency Response Procedure is included in Appendix H and outlines the procedures to be implemented in the event of a Peat Spillage as follows:

- Isolate the source of peat spillage the source of which could include a silt pond failed berm or failed drain block.
- Assess the extent of the peat spill and follow to bog outfall.
- Switch off any associate bog pumps.
- Construct dry peat berms around extent of peat flow and monitor.
- If the peat spillage is assessed to have the potential to extend to a receiving water deploy a silt curtain on the receiving water.
- Continue clean as instructed by/under direction of Local Authority/ Inland Fisheries Ireland / EPA.

3.1.11 Mortality or disturbance to Otter

As noted above no otter resting places such as holts or couches occur within Edera Bog, therefore no specific mitigation is required in respect of Mortality or Disturbance based on the information presented herein. While no risk of otter mortality has been identified in this Natura Impact Statement the following measures will still be put in place during rehabilitation works.

- Confirmatory surveys for active Otter holts and breeding activity will be carried out along the section of the Bilberry River and at each of the six silt ponds and surrounding habitats occurring within Edera Bog.
- Should it be confirmed all works within 150m of an active otter holt, will be carried out during daylight hours and outside of 2 hours after sunrise or before sunset during summer and outside of 1 hours after sunrise or before sunset during winter.
- No wheeled or tracked vehicles (of any kind) will be used within 20m of active, but non-breeding otter Holts, and light work will not take place within 15m of such holts, except under license.
- The prohibited area associated with otter holts, should they be located in confirmatory surveys, will, where appropriate, be protected from any inadvertent disturbance from any works or personnel occurring nearby such as at a silt pond and declared as ‘Ecology Restriction Zone’ with no mention of otters to any onsite staff.
- Appropriate awareness of the purpose of the excluded area will be conveyed through toolbox talks with site staff and sufficient signage will be placed on each possible access point. All contractors or operators on site will be made fully aware of the procedures pertaining to Ecology Restriction Zones

and subject to audits and non-conformance records in the event of non-compliance, to be included in reports submitted to Local Authorities and relevant Statutory Consultees.

- All construction works will be carried out during daylight hours.

In addition to these measures all measures detailed in the SOP for otters, as outlined in Appendix G to the Natura Impact Statement and included in the EMP will be implemented in full.

Note: The SOP for the protection of Otter is also included in Appendix 1 of this document.

3.1.12 Measures to avoid disturbance or displacement to SCI bird species

Birds

- Breeding surveys of silt ponds suitable to support breeding Little Grebe and Tufted Duck will be completed in advance of any maintenance works of silt ponds that are scheduled to overlap with the breeding bird season. Where nests are identified maintenance works will be postponed until the nest becomes inactive and there is no risk of disturbance to a breeding pair or mortality of eggs or non-fledged chicks.
- A 150m Ecological Restriction Zone (ERZ) will be in place surrounding the locations where wintering special conservation interest bird species of the Lough Ree SPA were identified during baseline surveys in 2021. Following the 2021 winter bird surveys at Edera Bog the area along the Bilberry River as shown on Figure 12 below was identified as the principal area of the bog being relied upon by waterbirds. The area identified as “Winter Waterbird Habitat” on Figure 2 is based on the results of the winter bird surveys. A 150m ERZ has been applied to this area that supports waterbirds during the winter season. The application of the 150m ERZ will also ensure that sufficient undisturbed habitat is available at the bog for roosting whooper swans and mute swans that were also recorded in the vicinity of this winter waterbird area.
- The location and extent of these ERZs are shown on Figure 2 below.
- No works will take place within these ERZs during the period:
Mid-September – mid-May inclusive
- Conformance will be audited through compliance checks by the Project Ecologist (with ‘stop-works’ authority).

Should no suitable habitat be present on confirmatory survey of the previously identified suitable habitat, further surveys will take place on a twice per month basis prior to the commencement of the next successive seasonal period, and on a weekly basis for any bogs where birds are likely to be present during migration only.

Once an Ecological Restriction Zone is operational, no PCAS scheme activities will take place within the prescribed zone. General usage will be restricted to use of existing rail and travel passes. All will be overseen by the Project Ecologist.



Figure 2: Ecological Restriction Zone in respect of Birds

3.2 Effectiveness of these Measures

The Mitigation Measures (Project Design Measures, Management Plans, Environmental Emergency Response Measures and Best Practice Measures), listed above, have been developed by the hydrological/drainage and ecological expert members of the Decommissioning and Rehabilitation project team in Bord na Móna and use best practice water quality protection techniques which are tried and tested regularly across the country. Furthermore, Project Ecologists, Engineers and Environmental Compliance Officers will be appointed for PCAS at Edera bog and they will monitor the effectiveness of these measures throughout the implementation of the PCAS at Edera bog.

The watercourse crossing, drainage and water quality measures have been developed using relevant legislation, guidance and literature including:

3.2.1 Guidance

- Inland Fisheries Ireland (2016) Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters.
- NRA (2008) Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes; and,
- OPW (2013) Construction, Replacement or Alteration of Bridges and Culverts.
- Brew, T. & Gilligan, N. (2019). Environmental Guidance: Drainage Maintenance and Construction
- EPA Ireland; Managing the Impact of Fine Sediment on River Ecosystems

Pollution Prevention Guidance Notes (PPGs) & Guidance for Pollution Prevention (GPP)³

- PPG 1: Understanding your environmental responsibilities - good environmental practices
- GPP 2: Above ground oil storage tanks
- PPG 3: Use and design of oil separators in surface water drainage systems
- GPP 4: Treatment and disposal of wastewater where there is no connection to the public foul sewer
- GPP 5: Works and maintenance in or near water
- PPG 6: Working at construction and demolition sites
- PPG 7: Safe storage - The safe operation of refuelling facilities
- GPP 8: Safe storage and disposal of used oils
- GPP 8: Safe storage and disposal of used oils
- GPP 8: Safe storage and disposal of used oils
- GPP 19: Vehicles: Service and Repair
- GPP 21: Pollution incident response planning
- GPP 22: Dealing with spills
- GPP 26 Safe storage - drums and intermediate bulk containers
- PPG 27: Installation, decommissioning and removal of underground storage tanks

Construction Industry Research and Information Association (CIRIA)⁴

- CIRIA Report C502 Environmental Good Practice on Site.
- CIRIA Report C532 Control of Water Pollution from Construction Sites: Guidance for consultants and contractors.
- CIRIA Report C648 Control of Pollution from Linear Construction Project; Technical Guidance.
- CIRIA Handbook C650 Environmental good practice on site.
- CIRIA Handbook C651 Environmental good practice on site checklist.
- CIRIA Report C609 - SuDS – hydraulic, structural & water quality advice; and,
- CIRIA Report C697 – The SuDS Manual.

³<https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/>

⁴ Available from <https://www.ciria.org/>

Invasive Species Guidance

- Managing Japanese knotweed on development sites - The Knotweed Code of Practice produced by the Environmental Agency (2013)⁵;
- NRA Guidelines on The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads (2010)⁶;
- Managing Invasive Non-native Plants in or near Freshwater, Environment Agency (2010)⁷;
- Best Practice Management Guidelines Japanese knotweed *Fallopia japonica*, Invasive Species Ireland (2015).
- IFI Biosecurity Protocol for Field Survey Work, Inland Fisheries Ireland (2010⁸).

Guidance relating to Bird Disturbance

- Livesey et al., (2016) Database of bird flight initiation distances to assist in estimating effects from human disturbance and delineating buffer areas. Journal of Fish and Wildlife Management 7: 181–191.
- Scottish National Heritage (2009) Monitoring the impact of onshore wind farms on birds - January 2009. Guidance Note.
- Scottish National Heritage (2016) Dealing with Construction and birds. Guidance Version 3.
- Scottish National Heritage (2017) Survey Methods for Use in Assessing the Impacts of Onshore Windfarms on Bird Communities. Version 2. <https://www.nature.scot/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms>

Guidance relating to Mammal Disturbance

- OPW (2013) Construction, Replacement or Alteration of Bridges and Culverts⁹.
- Brew, T. & Gilligan, N. (2019). Environmental Guidance: Drainage Maintenance and Construction
- National Roads Authority. Guidelines for the treatment of Otters prior to the construction of National Road Schemes. <https://www.tii.ie/tii-library/environment/construction-guidelines/Guidelines-for-the-Treatment-of-Otters-prior-to-the-Construction-of-National-Road-Schemes.pdf>

3.3 Implementation of Mitigation Measures

The Mitigation Measures (Project Design measures, Management Plans, Environmental Emergency Procedures and Best Practice Measures) will be implemented by the Project Manager/PSCS and BnM Project Staff during the Decommissioning and Rehabilitation stage. Implementation of the Mitigation Measures will be implemented under an Environmental Management Plan for Edera Bog Decommissioning and Rehabilitation.

⁵ <http://cfinns.scrt.co.uk/wp-content/uploads/2014/06/2013-code-of-practice.pdf>

⁶ <https://www.tii.ie/technical-services/environment/construction/Management-of-Noxious-Weeds-and-Non-Native-Invasive-Plant-Species-on-National-Road-Schemes.pdf>

⁷ <https://www.midsussex.gov.uk/media/1725/managing-invasive-non-native-plants.pdf>

⁸ <https://www.fisheriesireland.ie/Biosecurity/biosecurity-protocol-for-field-survey-work.html>

⁹ <https://www.gov.ie/en/publication/957aa7-consent-requirements-constructionalteration-of-watercourse-infrastru/>

Project Ecologists, Engineers and Environmental Compliance Officers will be appointed for PCAS at Edera bog and they will monitor the compliance with all mitigation measures through liaising with the Construction Site Manager/PSCS and the Project Manager, monitoring construction works on a regular basis and by carrying out regular audits on compliance with mitigation measures.

3.4 Degree of confidence in the likely success of the mitigation measure.

All protection measures have been designed in line with Best Practice and constitute the Best Available techniques following scientific literature and field baseline verification. The measures that are to be implemented are similar to those that have been implemented for other industrial peat bogs that have been subject to rehabilitation (e.g. Corlea Bog). Furthermore, the bespoke mitigation measures to be implemented at Edera Bog, such as the creation of specific wetland areas, will exceed those implemented for Corlea Bog. Following the implementation of rehabilitation measures at Corlea Bog a downward trajectory in water quality parameters such ammonia to below site-specific conservation objective limits has been recorded. In light of this and the aforementioned best practice and BAT, it is considered that with the implementation of all mitigation measures detailed in this Natura Impact Statement there is a very high degree of confidence in their likely success to ensure that significant adverse effects to the conservation objectives of the Lough Ree SAC and the Lough Ree SPA are avoided.

3.5 Monitoring of the Implementation and Effectiveness of the Mitigation Measures

A degree of Monitoring is required under Condition 10.1 of the IPC license under which Peat Extraction and now Decommissioning and Rehabilitation is to take place. This environmental monitoring carried out during the aftercare and maintenance period of Decommissioning and Rehabilitation, has to ensure no Environmental Pollution has been caused, and is subject to an Independent Closure Audit (ICA) followed by an EPA Exit Audit (EA) in order to facilitate IPC License surrender.

This programme for monitoring, aftercare and maintenance has been designed to meet the Conditions of the IPC Licence and is defined as:

- There will be **initial quarterly monitoring assessments** of the site to determine the general status of the site, the condition of the silt-ponds, assess the condition of the rehabilitation work, monitoring of any potential impacts on neighbours land, general land security, boundary management, dumping and littering.
- The number of these site visits will reduce after 2 years to bi-annually and then after 5 years to annual visits.
- These monitoring visits will also consider any requirements, if required, for further practical rehabilitation measures.
- The **baseline condition of the site will be established** post-rehabilitation implementation by using an aerial drone survey to take an up-to-date aerial photo, when rehabilitation is completed. The extent of bare peat will be assessed using this baseline data, and habitat maps will be updated, if required.
- A **water quality monitoring programme** at the bog will be established. The main objective of this water quality monitoring programme will be to establish a baseline and then monitor the impact of

peatland rehabilitation on water quality from the bog. Monitoring of key environmental variables will include: Ammonia, Phosphorous, Suspended solids (silt), pH and conductivity. Water quality samples will be collected from the main drainage system from the bog at a designated point, before water leaves the site. Water quality samples will be collected at monthly intervals during rehabilitation and for 2 years thereafter. Results will be reviewed for potential exceedances of SSCO thresholds likely to result in negative quality effects on downstream European Site targets.

- If, after three years, key criteria for successful rehabilitation are being achieved and critical success factors are being met, then the water quality monitoring programme will be reviewed, with consideration of potential ongoing research on site. The water quality data, the drone surveys and the habitat mapping will be collated and will be submitted to the EPA as part of the final validation report.
- If, after three years, key criteria for successful rehabilitation have **not** been achieved and critical success factors have **not** been met, then the rehabilitation measures and status of the site will be evaluated and enhanced, where required. This evaluation may indicate no requirement for additional enhancement of rehabilitation measures but may demonstrate that more time is required before key criteria for rehabilitation has been achieved. Monitoring of water quality will then also continue for another period to be defined.
- Where other uses are proposed for the site, these will be assessed by Bord na Móna in consultation with interested parties. Other after-uses can be proposed for licensed areas and must go through the appropriate assessment process and planning procedures.

3.6 How any mitigation failure will be addressed

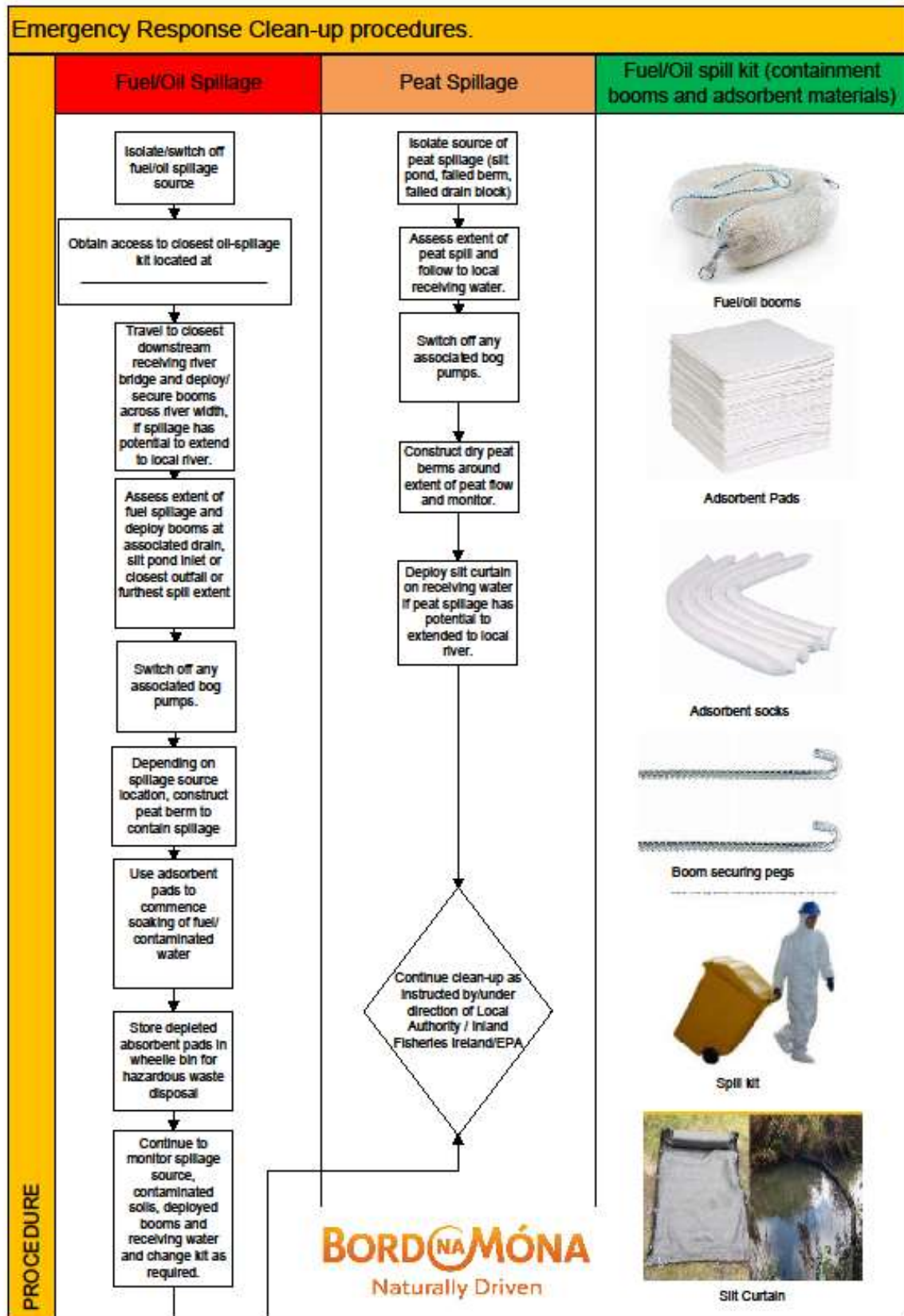
The Mitigation measures prepared specifically for this project have been designed in line with Best Practice and constitute the Best Available techniques following scientific literature and Best Practice. The Mitigation Measures are considered to be robust and proven measures which will avoid adverse effects to European Sites.

An Emergency Response Plan has been prepared (Appendix 1) so that an effective response to unforeseen events such as a berm failure can be put in place. The implementation of emergence response measures will ensure that such events are contained and do not result in significant adverse effects to Lough Ree SAC or SPA.

On this basis, it can be confidently concluded that failures in the mitigation measures and their prescribed outcomes will be avoided.

Nonetheless contingency measures will be in place for unforeseen events such as oil/fuel spillages, water pollution or any inadvertent release of sediment. This will ensure any unforeseen potentially adverse effects are identified in a timely manner and appropriate remedial action taken immediately. The Project Ecologists, Engineers and Environmental Compliance Officers will have a 'stop-works' authority to temporarily stop works over part of the site to avoid an infringement of the Environmental Commitments or an unforeseen environmental event. Works will not be allowed to re-commence until the issue is resolved.

Appendix 1



EP 5.0 General Emergency Response (IPC Licence Condition 13)

Condition 13 Emergency Response

13.1 The licensee shall, within six months of date of grant of this licence, ensure that a documented Emergency Response Procedure is in place which shall address any emergency situation which may originate on-site. This Procedure shall include provision for minimising the effects of any emergency on the environment.

(xii) Effective spill/leak management of mobile fuelling units.

Refer to:
ERP Fuel/Oil spill clean-up
ERP Peat spill clean-up



9.1.1 No potentially polluting substance or matter shall be permitted to discharge to off-site surface waters, off site storm drains or groundwaters.

9.1.13 The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage.



Yes

Notify Compliance Department



Assess Scale of Incident

Inform Emergency Services

Direct clean-up crew

In absence of Compliance Officer – Operations Manager shall assume this role

Compliance Officer records details of Incident as required on Aider

Reportable Environmental Incident?

Yes

Report to EPA via EDEN and Phone Call (056 7796700)

Out of Hours Emergency?

Yes

Contact Designated On-Call Person (056 7796700)

Complete EPA Incident Notification Form on Eden <https://www.edenireland.ie/>

The licensee shall notify the Agency by both telephone and facsimile, if available, to the Agency's Headquarters in Wexford, or to such other Agency office as may be specified by the Agency, as soon as practicable after the occurrence of any of the following:

4.1.1 Any release to atmosphere resulting in significant impairment of, or significant interference with amenities or the environment.

4.1.2 Any emission which does not comply with the requirements of this licence.

4.1.3 Any incident with the potential for environmental contamination of surface water or groundwater, or posing an environmental threat to air or land, or requiring an emergency response by a Local Authority.

The licensee shall include as part of the notification, date and time of the incident, details of the occurrence, and the steps taken to minimise the emissions and avoid recurrence.

4.2 The licensee shall make a record of any incident as set out in Condition 4.1 above. The notification given to the Agency shall include details of the circumstances giving rise to the incident and all actions taken to minimise the effect on the environment and minimise wastes generated.

4.3 A summary report of reported incidents shall be submitted to the Agency as part of the AER. The information contained in this report shall be prepared in accordance with any relevant guidelines issued by the Agency.

4.4 In the case of any incident as set out in Condition 4.1 above which relates to discharges to water, the licensee shall notify the appropriate Regional Fisheries Board, as soon as practicable after such an incident.

4.5 In the event of any incident, as set out in Condition 4.1.3 having taken place, the licensee shall notify the appropriate Local Authority as soon as practicable, after such an incident.

4.6 In the case of any incident, as set out in Condition 4.1.3, which has the potential to impact the conservation objectives of the Special Areas of Conservation and Natural Heritage Areas identified in Attachment 10.1 of the IPC application having taken place, the licensee shall notify Dúchas of the Department of Arts, Heritage, Gaeltacht and the Islands as soon as practicable after such an incident.