

Remedial Natura Impact Statement (rNIS)

Peat Extraction at
Ballydermot, Co. Kildare
and Co. Offaly



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1. INTRODUCTION

1.1 Background

MKO has been appointed to prepare a remedial Natura Impact Statement (rNIS) to allow the competent authority to conduct an Appropriate Assessment under Part XAB of the Planning and Development Acts 2000 (as amended) as part of an application for substitute consent for peat extraction and ancillary activities that took place at Ballydermot within the Allen Bog Group (Ticknevin, Glashabaun North, Glashabaun South, Codd 1, Codd 2, Ballydermot North, Ballydermot South, Blackriver, Lullymore, Lullybeg, Barnaran, Killina, Derrybrennan and Lodge Bogs) (which are hereafter referred to as 'the Application Site'), located in Co. Kildare and Co. Offaly.

This report also assesses the potential for significant effects on European Sites of the implementation of the rehabilitation plans for the Application Site, required under Condition 10 of its EPA Licence P0503-01, following the cessation of peat extraction and ancillary activities in June 2020.

Henceforth, the works as described above will be referred to as the Project, for the purposes of this remedial Natura Impact Statement (rNIS).

Section 177G of the Planning and Development Act 2000 (as amended) sets out that the rNIS shall contain:

- A statement of the significant effects, if any, on the relevant European site which have occurred, or which are occurring or which can reasonably be expected to occur because the development that is the subject of the application for substitute consent was carried out;
- Details of any appropriate remedial or mitigation measures undertaken or proposed to be undertaken by the applicant to remedy or mitigate any significant effects on the environment or on the European site;
- Details of the period of time within which any such proposed remedial or mitigation measures shall be or have been carried out by or on behalf of the applicant.

A remedial Appropriate Assessment Screening Report (rAASR) has been prepared and is provided in Appendix 1. The rAASR identified the European Sites with potential to have been, and to be, significantly affected by peat extraction and ancillary activities from 1994. This is the date when the Habitats Directive came into force, although it was not transposed into Irish law until 1997, through the European Communities (Natural Habitats) Regulations 1997 (S.I. No. 94 of 1997), and Appropriate Assessment (AA) became a legal requirement, onwards. The European Sites with potential to be significantly affected by the implementation of the Rehabilitation Plans for the Application Site were also identified. The potential for impacts on European Sites was assessed under three separate phases:

- **Peat Extraction Phase** - includes all works undertaken from 1994 to the cessation of peat extraction in June 2020. 1994 is when The Habitats Directive came into force, though it was not transposed into Irish law until 1997 through the European Communities (Natural Habitats) Regulations 1997 and when Appropriate Assessment (AA) became a legal requirement.
- **Current Phase** - the management of the Application Site since June 2020 (June 2020 to present).
- **Remedial Phase** - implementation of the Rehabilitation Plans for the Application Site, required under Condition 10 of its EPA Licence P0503-01, following the cessation of peat extraction in June 2020.

Peat extraction and ancillary activities undertaken at the Application Site, which comprise the Project for which substitute consent is being sought, and for which this rNIS is prepared, consists of the following:

- i. *Industrial scale peat extraction (milled peat, sod peat, sod moss and bin sod) at the Application Site from 1988 to June 2020;*
- ii. *Installation, use and maintenance of surface water drainage infrastructure (drains, silt ponds, pumps) at the Application Site to facilitate peat extraction activity from 1988 to present day;*
- iii. *Vegetation clearance to facilitate peat extraction activity from 1988 to June 2020;*
- iv. *Provision of 1 no. welfare facility, 1 no. handwashing facility, a toilet cubicle building and an associated septic tank, 19 no. storage containers and 2 no. storage sheds, , 8 no. vehicular bridges and 7 no. rail bridges;*
- v. *Use and maintenance of pre-existing ancillary supporting infrastructure and services to facilitate peat extraction (e.g., railway infrastructure), from 1988 to present day;*
- vi. *Control Measures associated with the above, inclusive of the IPC Licence measures (Ref. P0503-01) which commenced from 2000 onwards to the present day; and,*
- vii. *All associated site development and ancillary works.*

The rAASR identified the European Sites upon which significant effects could not be excluded. Those sites will be assessed in this rNIS.

This report has been prepared in compliance with Part XAB of the Planning and Development Act 2000 (as amended), the Planning and Development Regulations 2001 (as amended) and relevant jurisprudence of the European and Irish Courts. It was also prepared in accordance with all relevant guidance including the following:

- Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission (EC), 2021);
- Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018);
- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (Department of the Environment, December 2009, amended 11 February 2010); and
- Appropriate Assessment Screening for Development Management (Office of the Planning Regulator (OPR), 2021).

The purpose of the rNIS is to assess the implications of the Project, either alone or in-combination with other projects or plans, on the integrity of European sites in view of the sites' conservation objectives.

1.2 Statement of Authority

This report has been prepared by Sorchá Shanley (B.A., M.Sc.) and has been reviewed by Rachel Walsh (B.Sc. Env., MCIEEM).

Sorchá is a Project Ecologist at MKO and holds a BA (Hons) in Zoology and an M.Sc. in Marine Biology. Sorchá has over four years' experience working in ecological consultancy with experience in undertaking habitat and species surveys and working on Ecological Impact Assessment and Appropriate Assessment for a wide range of projects.

Rachel is a Senior Ecologist at MKO with six years' experience in ecological consultancy and holds full membership with the Chartered Institute of Ecology and Environmental Management (MCIEEM). Rachel has worked on a wide range of ecological impact assessments for projects such as renewable energy infrastructure projects, wastewater infrastructure projects, extractive industry and residential projects.

The baseline terrestrial ecological surveys were conducted by MKO ecologists Amy McDermott (B.Sc.), Bea Jackson (B.A., M.Sc.), Brídín Foster (B.Sc.), Caití Farren (B.A.), Caoimhe Myles (B.Sc., M.Sc.), Chandra Walter, Ciara Lynn Sheehan (B.Sc.), Cuan Feely (B.Sc.), Deepali Mooloo (B.Sc., M.Sc.), Inga

Reich (M.Sc., Ph.D.), Kate Johnson (B.Sc.), Kate Leahy (B.Sc.), Kate O'Donnell (B.Sc., ACIEEM), Katy Beckett, Kevin McElduff (B.Sc.), Julie O'Sullivan (B.Sc., M.Sc.), Mairead Kavanagh (B.Sc.), Niamh Leahy (B.Sc.), Ellen Tuck (B.Sc.), Pdraig Desmond (B.Sc.), Rachel Walsh (B.Sc., MCIEEM), Rudraksh Gupta (B.Sc., M.Sc., ACIEEM) and Sarah Mullen. All surveyors have relevant academic qualifications and are competent in undertaking habitat and ecological assessments.

MKO's Ecology team includes a dedicated bat unit with expertise in scoping, conducting, and reporting bat surveys, as well as preparing impact assessments. All ecologists hold relevant academic qualifications, licences, and training to meet required survey standards. Bat survey scope development and project management was overseen by Aoife Joyce (B.Sc., M.Sc., MCIEEM). Bat surveys were carried out by Ryan Connors (B.Sc., M.Sc.), Fred Mosley (B.A., M.Sc.), Kate Greaney (B.Sc., M.Sc.), Charlie Meehan (B.A., M.Sc.) and Laura McEntegart (B.Sc.). The Bat Report (included as Appendix 6-2) was prepared by Fred Mosley, Ryan Connors, Tim Murphy (B.Sc.) and Molly O'Hare (B.Sc., M.Sc.) and was reviewed and approved by Aoife Joyce. Staff's roles and relevant training are presented in Table 1-2 of the Bat Report in Appendix 6-2.

The Bird Survey Report was prepared by Kathryn Sheridan (M.Sc.), Senior Ornithologist of MKO, and reviewed by Patrick Manley (B.Sc., MCIEEM), Project Director. Both are suitably qualified ornithologists with experience in conducting ornithological assessments and competent for the purposes of the preparation of this report. Field surveys were undertaken by Alan Lauder (B.Sc.), Bernard Burke (B.A.), Conor Berney (M.Sc.), Cian Cahalin (B.Sc.), Cora Twomey (B.Sc.), Declan Manley, Donnacha Woods (M.Sc.), Eamonn O'Brien (B.Sc.), Ellen Tuck (B.Sc.), Franck Le Moënnier, Fionn O'Donoghue (B.A.), Hannah Keogh, Hannah O'Donoghue (B.Sc.), Ian Hynes (B.Sc.), James Corcoran Hodgins (M.Sc.), Jonah Gaine (B.Sc.), Kate Bismilla (B.Sc.), Kathryn Sheridan (M.Sc.), Katy Beckett (M.Sc.), Laura Gránicz (M.Sc.), Laura McEntegart (B.Sc.), Louis de Vries (M.Sc.), Matthew Kieran (B.Sc.), Neil Bourke, Neil Campbell (M.Sc.), Niall Murray (B.Sc.), Niall McHugh (B.Sc.), Oisín Casasin (B.Sc.), Pdraig Cregg (M.Sc.), Pdraig Webb (B.Sc.), Patrick Manley (B.Sc., MCIEEM), Sheriene Acun (B.Sc.), Susan Doyle (M.Sc., Ph.D.), Shawn Dowdall (M.Sc.), Shay Fennelly (B.Sc.), Tom Ryan (M.Sc.) and Zuzana Erosova (B.Sc.). Surveyors are all experienced and competent field ornithologists.

All surveyors have relevant academic qualifications and licences, and are competent in undertaking the ecological surveys in which they were involved.

1.3 References to Project

For the purposes of this rNIS:

- Ballydermot within the Allen Bog Group (Ticknevin, Glashabaun North, Glashabaun South, Codd 1, Codd 2, Ballydermot North, Ballydermot South, Blackriver, Lullymore, Lullybeg, Barnaran, Killina, Derrybrennan and Lodge Bogs) is referred to as 'the Application Site' as shown in Figure 3-1.
- The Project refers to all 'Phases' which are fully detailed in Chapter 4 of the remedial EIAR (rEIAR) and in Appendix A of the rAASR in Appendix 1 of this report.

1.4 Methodology

1.4.1 Appropriate Assessment Process

1.4.1.1 Stage 1 Screening for Appropriate Assessment

Screening is the process of determining whether an Appropriate Assessment is required for a plan or project. Under Part XAB of the Planning and Development Act, 2000, as amended, screening must be carried out by the Competent Authority. As per Section 177U of the Planning and Development Act, 2000, as amended 'A screening for appropriate assessment shall be carried out by the competent

authority to assess, in view of best scientific knowledge, if that land use plan or proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site. The Competent Authority's determination as to whether an Appropriate Assessment is required must be made on the basis of objective information and should be recorded. The Competent Authority may request information to be supplied to enable it to carry out screening.

Consultants or project proponents may provide for the competent authority, the information necessary for them to determine whether an Appropriate Assessment is required and provide advice to assist them in the Article 6(3) Appropriate Assessment Screening decision.

As per the European Commission's *Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC (2021)*, a Stage 1 Screening comprises four steps:

1. Ascertain whether the plan or project is directly connected with, or necessary to, the management of a Natura 2000 site;
2. Description of the plan or project and its impact factors (described in Section 2 below);
3. Identify which Natura 2000 sites may be affected by the plan or project (described in Section 3 below); and
4. Assess whether likely significant effects can be ruled out in view of the site's conservation objectives (described in Section 3 below).

In relation to Step 1 above, the Project is/was not directly connected with, or necessary for, the management of any European Site consequently the Project has been subject to a remedial Appropriate Assessment Screening process.

1.4.1.2 Stage 2 Appropriate Assessment

Where it cannot be excluded beyond reasonable scientific doubt at the Screening stage, that a 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 is required, or in this case a remedial Appropriate Assessment.

Where an Appropriate Assessment is required, the Competent Authority may require the applicant to prepare a Natura Impact Statement.

The term Natura Impact Statement (NIS) is defined in legislation¹. 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.

Section 177G of the Planning & Development Act 2000 (as amended) sets out that the rNIS shall contain:

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

- A statement of the significant effects, if any, on the relevant European site which have occurred or which are occurring or which can reasonably be expected to occur because the development the subject of the application for substitute consent was carried out;
- Details of any appropriate remedial or mitigation measures undertaken or proposed to be undertaken by the applicant to remedy or mitigate any significant effects on the environment or on the European site;
- Details of the period of time within which any such proposed remedial or mitigation measures shall be or have been carried out by or on behalf of the applicant.

This Article 6(3) rNIS has been prepared in compliance with the provisions of section 177U of the Planning and Development Act 2000 (as amended).

1.4.2 Scoping and Consultation

MKO undertook a scoping exercise for the substitute consent application. Scoping responses relevant to European Sites and Appropriate Assessment are summarised in Table 1-1 below.

Table 1-1 Scoping Responses

No.	Consultee	Response
1	An Taisce	None to date
3	Bird Watch Ireland	None to date
4	Butterfly Conservation Ireland (BCI)	BCI highlights the damage to priority habitats and protected species as a result of peat extraction, and that multiple remedial EIARs may be required due to the varied extraction timelines. The letter stresses the legal obligations for thorough environmental assessment and the need for meaningful restoration, including full re-wetting and rehabilitation under PCAS.
7	Department of Agriculture, Food and the Marine	Provided information on the felling and reforestation policy and information on obtaining a Felling License prior to trees being removed.
8	Department of Climate, Energy and the Environment	None to date
10	Department of Housing, Local Government and Heritage	Noted the Department is not in a position to make specific comment on this particular referral at this time but may submit observations/recommendations at a later stage in the process.
15	Environmental Protection Agency	Referred to their scoping response issued on 16th March 2022. Noted the presence of the IPC licence at the site and provided an opinion on the level of detail to be included in the rEIAR.
23	Inland Fisheries Ireland	IFI highlights extensive historical peatland drainage, river modification, and habitat loss in the Figile, Slate, and wider Black River system have severely damaged critical salmon spawning and nursery habitats, contributing to the Barrow River's low salmon populations. IFI emphasises that these tributaries, though not SAC-designated, are essential to the Barrow SAC's salmon stock and offer major restoration potential. They ask that large-scale river and habitat restoration be made a central requirement of future development.
24	Irish Peatland Conservation Council	The IPCC highlights concern for BnM's legacy of peat extraction conflicting with today's requirements for ecological restoration under the Nature Restoration Law. IPCC emphasises that standard rehabilitation cannot prevent long-term carbon emissions, whereas enhanced, ecological and hydrologically focused rehabilitation is essential for sustainability. IPCC highlight historical

		lapses in site protection and encourage any future consent to include stringent, transparent, and legally binding conservation obligations.
27	Irish Raptor Study Group	None to date
28	Irish Wildlife Trust	Noted that they had no capacity to provide a response at this time.
30	Kildare County Council – Environmental Department	KCC highlighted concern for water quality impacts from peat extraction, especially sediment release, acidification, and elevated ammonium as they pose significant risks to adjacent rivers and streams. KCC ask for the report to have a thorough assessment of water quality impacts for the period after 1988 and future effects including extensive historical monitoring data and consideration for the connectivity between bogs. KCC ask for the inclusion of KCC's CDP 2023-2029 Volume 1 Chapter 6 Infrastructure & Environmental Services and the current River Basin Management Plans in the assessment. KCC suggests including a separate Chapter within the report which deals with Water Quality impacts (past and future) and current or future risks to Water Quality.
35	Offaly County Council - Environment Department	None to date
38	Office of Public Works	None to date

1.4.3 Desk Study Methodology

The desk study undertaken for this assessment included a thorough review of available data pertaining to the Application Site and surrounding area, as well as information pertaining to the Screened-in European Sites identified in Table 3-1 of the rAASR and in Section 2 below. Sources of information included the following:

- Bord na Móna Habitat Mapping for the Application Site
- The Application Site was subject to detailed habitat surveys by BnM ecologists in 2010 and 2011 (with follow-up site visits in subsequent years for specific bogs) and detailed habitat maps were prepared.
- Draft and Final Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plans (included in Appendix 2 of the rNIS):
 - Ballydermot Bog Draft Cutaway Bog Decommissioning and Rehabilitation Plan (2026);
 - Barnaran Draft Cutaway Bog Decommissioning and Rehabilitation Plan (2026);
 - Blackriver Bog Draft Cutaway Bog Decommissioning and Rehabilitation Plan (2026);
 - Codd Bog Draft Cutaway Bog Decommissioning and Rehabilitation Plan (2026);
 - Derrybrennan Bog Draft Cutaway Bog Decommissioning and Rehabilitation Plan (2026);
 - Glashabaun Bog Draft Cutaway Bog Decommissioning and Rehabilitation Plan (2026);
 - Killinagh Bog Draft Cutaway Bog Decommissioning and Rehabilitation Plan (2026);
 - Lullybeg Bog Draft Cutaway Bog Decommissioning and Rehabilitation Plan (2026);
 - Lullymore Bog Draft Cutaway Bog Decommissioning and Rehabilitation Plan (2026);
 - Ticknevin Bog Draft Cutaway Bog Decommissioning and Rehabilitation Plan (2026); and,
 - Lodge Bog Cutaway Bog Decommissioning and Rehabilitation Plan (2022).
- Roughan & O'Donovan Consulting Engineers (2022) Lodge Bog Decommissioning and Rehabilitation Plan Appropriate Assessment Screening Report
- Aerial imagery for the years 1973, 1988, 1995, 2004 and 2020.
- Integrated Pollution Control Licence (IPC) Licence Allen Bog Group (Ref. P0503-01) Environmental Protection Agency.
- Review of NPWS Site Synopses and Conservation Objectives for the European Sites.
- Review of EU Habitats Directive (Article 17) Reports (2007, 2013, 2019, and 2025).

- Review of online web-mappers: National Parks and Wildlife Service (NPWS), Environmental Protection Agency (EPA), EPA (Envision) and Water Framework Directive (WFD).
- Review of OS maps and aerial photographs of the site of the Project.
- Review of relevant available plans, including the Offaly County Development Plan 2021-2027, Kildare County Development Plan 2023-2029, and partial versions of Historic County Development Plans for Offaly (including 2014-2020, 2009-2015, 2003-2009, 1995, 1987) and Kildare (including 2017-2023, 2011-2017, 2005-2011, 1999-2005, 1985-1991, 1984 (Draft), 1977-1984, 1972-1977, and 1967-1972) where accessible. The National Biodiversity Plan 2002–2006, National Biodiversity Action Plan 2011–2016, National Biodiversity Action Plan 2017–2021 and Ireland’s 4th National Biodiversity Action plan 2023-2030 were also reviewed.
- MKO field assessments and surveys carried out between 2020 and 2026 and as provided in full in Section 4 of the rNIS.
- Sharrock, J.T.R. (1976) The atlas of breeding birds in Britain and Ireland.
- Lack, P.C. (1986) The atlas of wintering birds in Britain and Ireland.
- Gibbons, D.W., Reid, J.B. & Chapman, R.A. (1993) The new atlas of breeding birds in Britain and Ireland: 1988-1991.
- Balmer, D., Gillings, S., Caffrey, B., Swann, B., Downie, I., & Fuller, R. (2013). Bird Atlas 2007–11: The Breeding and Wintering Birds of Britain and Ireland.
- Bord na Móna Breeding and Wintering Bird Survey Reports (2018-2020) undertaken by Inis Environmental Consultants Ltd.
- Aquatic Report (2026) and Fisheries Report (2026) for Peat Extraction at Ballydermot Co. Kildare and Co. Offaly prepared by Triturus Environmental Ltd (Appendix 3 of the accompanying rNIS).
- Bird Report (2026) for Peat Extraction at Ballydermot, Co. Kildare and Co. Offaly, prepared by MKO (Appendix 4 of the accompanying rNIS).

1.4.4

Field Survey Methodologies

In addition to the desk study described above, a comprehensive survey of the biodiversity of the Application Site was undertaken on various dates between 2020 and 2026, set out below in Table 1-2.

Whilst a number of the surveys described below were undertaken to inform the EIAR and NIS for the proposed Ballydermot Wind Farm, the study area for both the proposed Ballydermot Wind Farm and the Application Site boundary for this rNIS overlap. These surveys provide the information necessary to undertake a robust assessment of the potential impacts of the Project on European Sites.

Table 1- 2 Summary of surveys undertaken to inform the rNIS

Survey	Dates
Multidisciplinary Walkover Surveys (Including Habitats and Mammals)	11 th of September 2025
	18 th of September 2025
	16 th of July 2024
	18 th of July 2024
	23 rd of July 2024
	25 th of July 2024
	29 th of July 2024
	13 th of August 2024
	22 nd of March 2023
	23 rd of March 2023
	18 th of April 2023
	5 th of May 2022

Survey	Dates
	6 th of May 2022 26 th of May 2022 1 st of June 2022 8 th of June 2022 14 th of June 2022 22 nd of June 2022 22 nd of July 2022 19 th of July 2022 16 th of June 2021 24 th of June 2021 11 th of August 2021 12 th of August 2021 Trail cameras deployed between 20 th of June and 19 th of July 2022
Detailed Habitat and Vegetation Composition Surveys	16 th of July 2024 18 th of July 2024 23 rd of July 2024 25 th of July 2024 29 th of July 2024 13 th of August 2024
Aquatic Surveys (Including Otter)	31 st of July 2024 1 st of August 2024 2 nd of August 2024 3 rd of August 2024 1 st of July 2021 2 nd of July 2021 3 rd of July 2021
Bird Surveys	Dates between April 2020– March 2026 (full date details available in Appendix 4)-

The results of the surveys were used to inform this rNIS. The following sections fully describe the ecological surveys that have been undertaken and provide details of the methodologies, dates of survey and guidance followed.

1.4.4.1 Ecological Multidisciplinary Walkover Surveys

Multidisciplinary walkover surveys were undertaken within the Application Site. Surveys were undertaken within the recognised optimum period for vegetation surveys/habitat mapping, i.e. April to September (Smith *et al.*, 2011). These surveys were carried out in accordance with TII Guidelines on Ecological Surveying Techniques for Protected Flora and Fauna on National Road Schemes (TII, 2008).

The walkover surveys were designed to detect the presence, or likely presence, of a range of protected species. The survey included a search for mammal signs (bats, badger, red squirrel etc.) and areas of

suitable habitat to support these species, potential features likely to be of significance to bats and additional habitat features for the full range of other protected species that are likely to occur in the vicinity of the Application Site (e.g. otter etc.).

During the multidisciplinary surveys, a search for Invasive Alien Species (IAS) listed under the First Schedule of the European Union (Invasive Alien Species) Regulations 2024 (S.I. 374 of 2024) and Third Schedule of the European Communities (Birds and Natural Habitats) Regulations (S.I. 477 of 2011) was conducted.

Other targeted survey methodologies undertaken at the Application Site are described in the following subsections.

1.4.4.2 Dedicated Habitat and Vegetation Composition

Detailed botanical surveys/relevé assessments of the Application Site were undertaken throughout multidisciplinary walkover surveys carried out between 2021 and 2025. All habitats recorded on site and described in this rELAR chapter have been classified in accordance with Fossitt (2000).

The habitat assessment surveys described in this report have been undertaken with reference to the following guidelines and interpretation documents:

- Commission of the European Communities (2013) *Interpretation manual of European Union habitats*. Eur 27. European Commission DG Environment.
- NPWS (2025). *The Status of EU Protected Habitats and Species in Ireland*. Volume 2: *Habitat Assessments*. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
- Martin, J.R., O'Neill, F.H. & Daly, O.H. (2018), *The monitoring and assessment of three EU Habitats Directive Annex I grassland habitats*. Irish Wildlife Manuals, No. 102. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.
- O'Neill, F.H., Martin, J.R., Devaney, F.M. & Perrin, P.M. (2013), *The Irish semi-natural grasslands survey 2007-2012*. Irish Wildlife Manuals, No. 78. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland.
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- Fernandez, F., Connolly K., Crowley W., Denyer J., Duff K. & Smith G. (2014) *Raised Bog Monitoring and Assessment Survey 2013*. Irish Wildlife Manuals, No. 81. National Parks and Wildlife Service, Department of Arts, Heritage and Gaeltacht, Dublin, Ireland.
- Daly, O.H., O'Neill, F.H., & Barron, S.J. (2023). The monitoring and assessment of four EU Habitats Directive Annex I woodland habitats. Irish Wildlife Manuals, No. 146. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.
- Cross, J. & Lynn, D. (2013) Results of a monitoring survey of bog woodland. Irish Wildlife Manuals, No. 69. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

Habitats were identified and classified, with emphasis on those of ecological significance, particularly those with the potential to correspond to Annex I of the EU Habitats Directive (92/43/EEC).

Plant nomenclature for vascular plants follows 'New Flora of the British Isles' (Stace, 2010), while mosses and liverworts nomenclature follows 'Mosses and Liverworts of Britain and Ireland - a field guide' (British Bryological Society, 2010).

1.4.4.3 Otter Surveys

Following a review of the previously completed ecological surveys, areas identified as providing potential habitat for otter were subject to additional surveys during multidisciplinary surveys of the Application Site. Additional otter surveys were conducted by Triturus Environmental Ltd. (Appendix 3) as part of the aquatic baseline surveys of watercourses within and downstream of the Application Site.

The otter survey was conducted as per TII (2008) guidelines (Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes). This involved a search for all otter signs e.g. spraints, scat, prints, slides, trails, couches and holts. In addition to the width of the rivers/watercourses, a 10m riparian buffer (both banks) was considered to comprise part of the otter habitat (NPWS, 2009). The dedicated otter survey also followed the guidance as set out in TII (2006) *'Guidelines for the Treatment of Otters Prior to the Construction of National Roads Schemes'* and following CIEEM best practice competencies for species surveys (CIEEM, 2013).

1.4.4.4 Aquatic surveys

Dedicated aquatic baseline surveys were undertaken by Triturus Environmental Ltd. Aquatic surveys were conducted on the 31st of July and between the 1st-3rd of August 2024. Surveys were also undertaken in 2021, the results of which were updated in 2024 and considered within the 2026 Aquatic Baseline Report. The surveys assessed watercourses and ponds within and downstream of the Application Site to evaluate fisheries potential, biological water quality, and the presence of aquatic species and habitats of conservation interest. A total of 31 sites were surveyed. The survey site locations are shown in Figure 2-1 of the Aquatic Report in Appendix 3.

The surveys included electro-fishing, fisheries habitat appraisal, biological water quality (Q-sampling), macrophyte and aquatic bryophyte surveys, white-clawed crayfish surveys and otter surveys. In addition, environmental DNA (eDNA) sampling was undertaken at selected locations to assist in the detection of potential cryptically low populations of protected and rare aquatic species.

The surveys covered all watercourses draining the Application Site and the survey effort was considered sufficient to provide comprehensive information on the nature of the watercourses within and draining the Application Site. A full description of the survey methodologies is provided in the Aquatic Report in Appendix 3.

1.4.4.5 Bird Surveys

Bird surveys were undertaken during the period April 2020 to March 2026, consisting of six breeding seasons (April – September) and six non-breeding seasons (October – March) as described in the Bird Survey Report in Appendix 4. These field surveys were undertaken in compliance with NatureScot guidance (SNH (2017), which was revised in NatureScot (2025)).

Field survey methodologies were devised to survey for the bird species composition and assemblages that occur within the study area. The study area surveyed for each type of survey is discussed in the methodology section below. The survey radii described in the below sections were devised in relation to the Application Site boundary, as provided to MKO by BnM during initial survey design for the proposed Ballydermot Wind Farm. The bird surveys described below were undertaken to inform the EIAR and NIS for the proposed Ballydermot Wind Farm, however the study area for the proposed Ballydermot Wind Farm and the Application Site boundary for this rNIS overlap. These surveys provide information on the bird species utilising the Application Site and inform the assessment of the potential impacts of the Project on SCI species.

Initial Site Assessment

Based on the results of the desk study, consultation and reconnaissance site visits undertaken in April 2020, the likely importance of the study area for bird species was ascertained. A list of “target species” likely to occur at the Application Site was compiled. Bird surveys conducted at the Application Site were then specifically designed to survey for these target species, in accordance with NatureScot guidance (SNH [2017], which was revised in NatureScot [2025]). The target species list was drawn from:

- Species listed on Annex I of the EU Birds Directive.
- Special Conservation Interests (SCI) of Special Protection Areas (SPA) within the zone of likely significant effects.
- Red listed Birds of Conservation Concern in Ireland (BoCCI).
- Other raptor species not included in the above.

Based on the collated information available from the above preliminary assessment and adopting a precautionary approach, a site-specific scope for the ornithological surveys was developed. The various survey types undertaken are described below.

Vantage Point Surveys

Vantage point surveys were undertaken at the Application Site from April 2020 to March 2026. Surveys were conducted monthly throughout the survey period from 16 no. fixed point vantage points, allowing comprehensive coverage of the Application Site.

Data Recording and Digitisation

Survey methodology followed SNH (2017) and NatureScot (2025). The surveyor collected data on bird observations and flight activity from the scanning arc of 180° to a 2km radius at the fixed vantage point locations for two 3 hour watches separated by a minimum 30 minute break (i.e. 6 hours total) per month. Surveys were conducted from April 2020 to March 2026 inclusive, and were scheduled to provide a minimum of 36 hours per winter or breeding season and spread over the full daylight period, including dawn and dusk watches, to coincide with the highest periods of bird activity (Table 1-3).

Table 1-3 Vantage point survey effort

Survey Season and Number of Vantage Points (VPs)	Effort per Vantage Point (VP)
Breeding Season 2020 (16 VPs)	36 hours per VP
Winter Season 2020/2021 (16 VPs)	36 hours per VP
Breeding Season 2021 (16 VPs)	36 hours per VP
Winter Season 2021/2022 (16 VPs)	36 hours per VP
Breeding Season 2022 (16 VPs)	36 hours per VP
Winter Season 2022/2023 (16 VPs)	36 hours per VP
Breeding Season 2023 (16 VPs)	36 hours per VP
Winter Season 2023/2024 (16 VPs)	36 hours per VP
Breeding Season 2024 (16 VPs)	36 hours per VP
Winter Season 2024/2025 (16 VPs)	36 hours per VP
Breeding Season 2025 (16 VPs)	36 hours per VP
Winter Season 2025/2026 (16 VPs)	36 hours per VP

Each flight observation was assigned a unique identifier when mapped in the field and subsequently digitised using GIS software. Survey effort is presented in Appendix B of the Bird Survey Report (Appendix 4), including full details of dates, times and weather conditions for each survey. Figure 2-1 of the Bird Survey Report (Appendix 4) shows the Vantage Point Survey Locations.

Breeding Walkover Surveys

Breeding walkover surveys were undertaken to determine the presence of bird species of high conservation concern and identify areas of possible, probable or confirmed breeding for bird species observed within the Application Site, and to a 500m radius of the Application Site. The methodology was based on Brown and Shepherd (1993) and Calladine *et al.* (2009), combined with Common Bird Census methods (British Trust for Ornithology, 2021) for dense habitat. Transect routes were walked across different habitat complexes within the survey area where access allowed. Using binoculars, the surveyor regularly scanned the surroundings of each transect for target species. All target species were mapped and breeding status was assigned following British Trust for Ornithology (BTO) breeding status codes². In addition, the presence of any non-target species was recorded to inform the evaluation of supporting habitat.

Breeding walkover surveys were carried out during daylight hours over four visits during the core breeding season months April to July (2020, 2021, 2022, 2023, 2024 & 2025), with the Application Site being visited seven consecutive days per month (insofar as possible) on each occasion. Following all survey visits, the field maps were analysed to determine the number and location of breeding territories. All non-breeding individuals and species encountered were also recorded.

Survey effort is presented in Appendix B of the Bird Survey report in Appendix 4, including full details of dates, times and weather conditions for each survey. Figure 2-2 of the Bird Survey Report (Appendix 4) shows the breeding walkover transect routes.

Breeding Raptor Surveys

Raptors include all harrier, falcon, buzzard, eagle, hawk, owl, kite and osprey species. Breeding raptor surveys were undertaken within the Application Site, and to a 2km radius of the Application Site, to identify occupied territories and monitor their breeding success near or within the Application Site. Survey methodology followed Hardey *et al.* (2013). Breeding raptor watches of 3 hours (supplemented by transects if necessary) were conducted during daylight at a total of 11 no. breeding raptor locations over the six breeding seasons. All raptor species observed were recorded and mapped and breeding status was assigned following BTO breeding status codes. Surveyors did not approach nest sites to avoid disturbance.

Each breeding raptor location was surveyed once per month during the core breeding season between April and July. Survey effort is presented in Appendix B of the Bird Survey Report (Appendix 4), including full details of dates, times and weather conditions. Figure 2-3 of the Bird Survey Report (Appendix 4) shows the breeding raptor survey locations.

Winter Walkover Surveys

Winter walkover surveys were undertaken to record the presence of bird species within the Application Site to a 500m radius of the Application Site, including areas between vantage point locations. The methodology was adapted from the walkover methodology outlined in Bibby *et al.* (2000) and adapted Brown and Shepherd surveys', combined with Common Bird Census methods (British Trust for Ornithology, 2021). Transect routes were walked across different habitat complexes within the survey area where access allowed. All target species were recorded and mapped. In addition, the presence of any non-target species was recorded to inform the evaluation of supporting habitat.

Winter walkover surveys were conducted in daylight hours over four visits between October and March (i.e. four visits in winter 2020/2021, four visits in winter 2021/2022, four visits in winter 2022/2023, four visits in winter 2023/2024, four visits in winter 2024/2025 and four visits in winter 2025/2026).

² <https://www.bto.org/our-science/projects/birdatlas/methods/breeding-evidence>

Survey effort is presented in Appendix B of the Bird Survey Report (Appendix 4), including full details of dates, times and weather conditions for each survey. Figure 2-5 of the Bird Survey Report (Appendix 4) shows the winter walkover survey radius.

Hen Harrier Roost Surveys

Hen harrier roost surveys were undertaken in areas of suitable habitat within a 2km radius of the Application Site. These surveys aimed to identify active winter hen harrier roosts near or within the Application Site. Survey methodology followed Gilbert *et al.* (1998) and O'Donoghue (2019). Roost watches of 2-3 hours were conducted at a total of 18 hen harrier vantage point locations over the six winter seasons surveyed. Surveys were carried out from dusk until last visible light during which all hen harrier observations were recorded and mapped.

Each hen harrier vantage point was surveyed once per month during the winter season between October and March inclusive (in winters 2020/2021, 2021/2022, 2022/2023, 2023/2024, 2024/2025 & 2025/2026). Survey effort is presented in Appendix B of the Bird Survey Report (Appendix 4), including full details of dates, times and weather conditions. Figure 2-6 of the Bird Survey Report (Appendix 4) shows the hen harrier roost survey locations.

1.4.4.6 Invasive Species Survey

During the multidisciplinary walkover surveys and botanical surveys, a search for non-native invasive species was also undertaken. The survey focused on the identification of invasive species listed under the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (As Amended) (S.I. 477 of 2015 and the First Schedule of the European Union (Invasive Alien Species) Regulations 2024 (S.I. 374 of 2024).

2.

SUMMARY OF REMEDIAL AASR AND ASSESSMENT OF QUALIFYING FEATURES LIKELY TO BE SIGNIFICANTLY AFFECTED

The remedial Appropriate Assessment Screening report (rAASR) that is provided as Appendix 1 to this remedial Natura Impact Statement (rNIS), concluded that there was potential for the following European Sites to have been, and to be, significantly affected by peat extraction and ancillary activities:

- The Long Derries, Edenderry Special Area of Conservation (SAC); and
- River Barrow and River Nore Special Area of Conservation (SAC).

The Qualifying Interests (QIs) and Special Conservation Interests (SCIs) with the potential to be affected and the pathways by which any such effects may have occurred are set out below for each site. The location of the Application Site and connectivity with these EU designated sites is provided as Figure 2-1.

2.1

The Long Derries, Edenderry SAC

The Project is located within the boundary of this SAC. There is hydrological connectivity between the Application Site and this SAC.

A potential pathway for direct effects on the qualifying interest habitat of this SAC as a result of peat extraction and ancillary activities during the Peat Extraction Phase and Current Phase was identified, given that the Application Site is located within the SAC boundary. The SAC is designated for Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (important orchid sites) [6210]. The potential pathway for direct effects is habitat loss and habitat degradation through encroachment of machinery or infrastructure, spread of invasive or negative indicator species from disturbed areas, and dust or particulate deposition from peat extraction and ancillary activities.

Rehabilitation works during the Remedial Phase will be confined to the cutover bog areas of the Application Site and will not involve works within or adjacent to the qualifying interest habitat of the SAC. No potential pathway for direct or indirect effects on the qualifying interest of this SAC during the Remedial Phase was identified.

While there is hydrological connectivity between the Application Site and the SAC, the SAC is designated for terrestrial habitats only and there is therefore no hydrological pathway for indirect effects on the qualifying interest.

2.1.1

Identification of Individual Qualifying Features with the Potential to be Affected

The potential for impacts on this SAC as identified in the rAASR are outlined above in Section 2.1. Table 2-1 below lists the qualifying features of this European Site and determines, in the light of their conservation objectives, whether there is any complete source-pathway-receptor chain, by which adverse effects may occur.

Table 2- 1 Assessment of Individual QIs with the Potential to be Affected

Qualifying Interest	Conservation Objective (NPWS, Version 1, November 2021 ³),	Rationale	Potential for Adverse Effects
[6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites)	To restore the favourable conservation condition of Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites) in The Long Derries, Edenderry SAC	The Application Site is located within the boundary of this SAC and therefore a potential pathway for direct effects on the qualifying interest habitat exists. This is a terrestrial habitat therefore there is no potential for indirect effects on the qualifying interest as a result of deterioration in water quality. Given the overlap between the Application Site and the SAC boundary, a complete source-pathway-receptor chain exists for direct effects and the potential for adverse effects on the qualifying interest habitat cannot be ruled out. This QI is assessed further in this NIS.	Yes

2.2

River Barrow and River Nore SAC

There is hydrological connectivity between the Application Site and this SAC via watercourses within the Application Site which discharge to the River Barrow which is designated as part of the SAC.

Potential indirect effects on the aquatic QIs of this SAC as a result of peat extraction and ancillary activities during the Peat Extraction Phase and the Current Phase was identified. During these phases there was potential for deterioration in surface and ground water quality due to runoff of pollutants, including silts and hydrocarbons, to watercourses within and downstream of the site.

During the implementation of the Rehabilitation Plans for the Application Site in the Remedial Phase there will be a requirement for small volumes of machinery and personnel on site for drain blocking works. Taking a precautionary approach, a potential pathway for indirect effects on the SAC during the Remedial Phase as a result of deterioration of water quality due to runoff of pollutants during such works was identified.

Following application of the precautionary principle, a potential pathway for indirect effects on otter where they occur outside the SAC, as a result of disturbance was identified. Disturbance could potentially have occurred during drain maintenance works where any otter resting or breeding sites were present on the Application Site during the Peat Extraction Phase and Current Phase and could potentially occur during the Remedial Phase.

2.2.1

Identification of Individual Qualifying Features with the Potential to be Affected

The potential for impacts on this SAC as identified in the rAASR are outlined above in Section 2.2. Table 2-2 below lists the qualifying features of this European Site and determines, in the light of their conservation objectives, whether there is any complete source-pathway-receptor chain, by which adverse effects may occur.

³ NPWS (2021) Conservation Objectives: The Long Derries, Edenderry SAC 000925. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

Table 2-2 Assessment of Individual QIs with the Potential to be Affected

Qualifying feature	Conservation Objective (NPWS, Version 2, June 2025 ⁴),	Rationale	Potential for Adverse Effects Y/N
[1016] Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>)	To maintain the Favourable conservation condition of Desmoulin's whorl snail in the River Barrow and River Nore SAC	This is a QI species associated with wetland habitats. According to the site-specific conservation objectives, there are two known sites (Borris Bridge, Co. Carlow and Boston Bridge, Kilmaseer, Co. Laois) and these are located a significant distance downstream of the Application Site (>90km). There is no connectivity between the Application Site and these habitat areas supporting this QI species. However, this species may be present at other locations of suitable habitat within the SAC beyond these two known sites. Given the hydrological connectivity with potential suitable habitat, a complete source-pathway-receptor chain exists and the potential for adverse effects cannot be ruled out. This QI is assessed further in this NIS.	Yes
[1029] Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>)	To restore the Favourable conservation condition of the Freshwater pearl mussel (<i>Margaritifera margaritifera</i>) in River Barrow and River Nore SAC	This is an aquatic QI of the River Barrow and River Nore SAC. According to the site-specific conservation objectives, the conservation objectives apply to the Ballymurphy, Mountain and Nore freshwater pearl mussel populations, which are listed on the European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009 (Statutory Instrument No. 296 of 2009). The conservation objectives include mapped areas of the three relevant catchments (Ballymurphy, Mountain and Nore) as well as suitable habitat and distribution within these systems. These areas are not located downstream of the Application Site and are a significant distance away. In addition, it is not considered that there is any pathway by which effects on salmonid populations could result in an effect on host fish availability for the Ballymurphy, Mountain or Nore freshwater pearl mussel populations, which are separate, distant tributary systems. Given the significant distance between the Application Site and these areas of the SAC and lack of connectivity, no complete source-pathway-receptor chain exists and there is no potential for adverse effects on this QI. No further assessment is required.	No
[1092] White-clawed Crayfish (<i>Austropotamobius pallipes</i>)	To maintain the Favourable conservation condition of White-clawed crayfish in the River Barrow and River Nore SAC	This is an aquatic QI of the River Barrow and River Nore SAC. A hydrological connection has been established between the Application Site and the SAC via downstream watercourses. The site-specific conservation objectives state that the species is present almost throughout this SAC. Given the hydrological connectivity, a complete source-pathway-receptor chain exists and the potential for	Yes

⁴ NPWS (2025) Conservation Objectives: River Barrow and River Nore SAC 002162. Version 2. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage

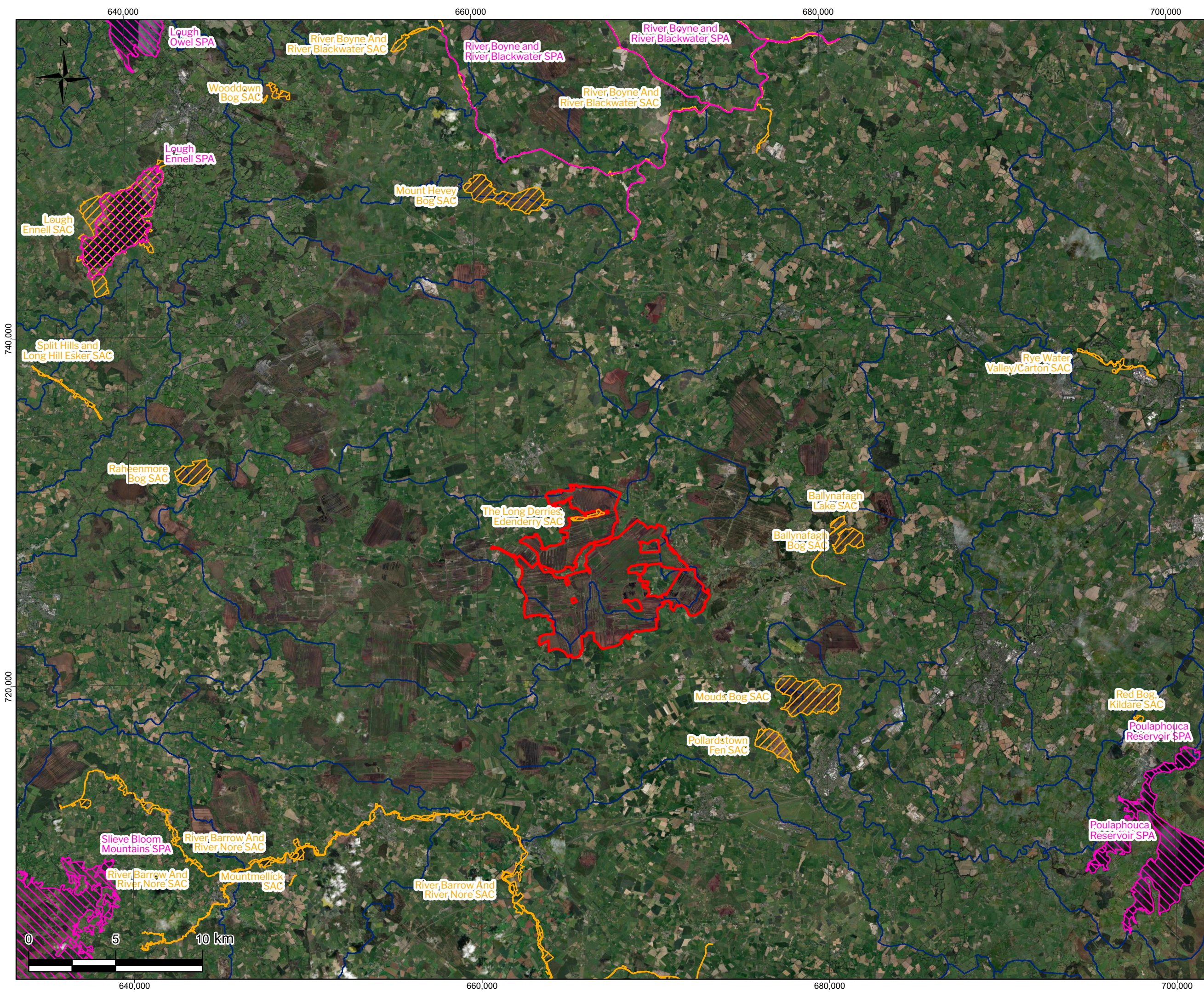
Qualifying feature	Conservation Objective (NPWS, Version 2, June 2025 ⁴),	Rationale	Potential for Adverse Effects Y/N
		adverse effects cannot be ruled out. This QI is assessed further in this NIS.	
[1095] Sea Lamprey (<i>Petromyzon marinus</i>)	To restore the Favourable conservation condition of Sea lamprey in the River Barrow and River Nore SAC	This is an aquatic QI of the River Barrow and River Nore SAC. A hydrological connection has been established between the Application Site and the SAC via downstream watercourses. Given the hydrological connectivity, a complete source-pathway-receptor chain exists and the potential for adverse effects cannot be ruled out. This QI is assessed further in this NIS.	Yes
1096] Brook Lamprey (<i>Lampetra planeri</i>)	To restore the favourable conservation condition of Brook lamprey in the River Barrow and River Nore SAC	This is an aquatic QI of the River Barrow and River Nore SAC. A hydrological connection has been established between the Application Site and the SAC via downstream watercourses. Given the hydrological connectivity, a complete source-pathway-receptor chain exists and the potential for adverse effects cannot be ruled out. This QI is assessed further in this NIS.	Yes
[1099] River Lamprey (<i>Lampetra fluviatilis</i>)	To restore the Favourable conservation condition of River lamprey in the River Barrow and River Nore SAC	This is an aquatic QI of the River Barrow and River Nore SAC. A hydrological connection has been established between the Application Site and the SAC via downstream watercourses. Given the hydrological connectivity, a complete source-pathway-receptor chain exists and the potential for adverse effects cannot be ruled out. This QI is assessed further in this NIS.	Yes
[1103] Twaite Shad (<i>Alosa fallax fallax</i>)	To restore the favourable conservation condition of Twaite shad in the River Barrow and River Nore SAC	This is an aquatic QI of the River Barrow and River Nore SAC. A hydrological connection has been established between the Application Site and the SAC via downstream watercourses. Given the hydrological connectivity, a complete source-pathway-receptor chain exists and the potential for adverse effects cannot be ruled out. This QI is assessed further in this NIS.	Yes
[1106] Salmon (<i>Salmo salar</i>)	To restore the favourable conservation condition of Salmon in the River Barrow and River Nore SAC	This is an aquatic QI of the River Barrow and River Nore SAC. A hydrological connection has been established between the Application Site and the SAC via downstream watercourses. Given the hydrological connectivity, a complete source-pathway-receptor chain exists and the potential for adverse effects cannot be ruled out. This QI is assessed further in this NIS.	Yes
[1355] Otter (<i>Lutra lutra</i>)	To restore the favourable conservation condition of Otter in the River	This is an aquatic QI of the River Barrow and River Nore SAC. A hydrological connection has been established between the Application Site and the SAC via downstream watercourses. Therefore, a complete source-pathway-receptor chain exists, and the potential for adverse effects on otter as a result of deterioration in water quality cannot be ruled out.	Yes

Qualifying feature	Conservation Objective (NPWS, Version 2, June 2025 ⁴),	Rationale	Potential for Adverse Effects Y/N
	Barrow and River Nore SAC	On a precautionary basis, it is also considered that otters potentially using watercourses within or downstream of the Application Site may be functionally linked to the SAC and could be subject to disturbance impacts. As such, this QI is assessed further in this rNIS.	
[1130] Estuaries	To maintain the favourable conservation condition of Estuaries in the River Barrow and River Nore SAC	This is an aquatic QI habitat of the River Barrow and River Nore SAC. While a hydrological connection exists between the Application Site and the SAC via downstream watercourses, the mapped areas of this habitat within the SAC are located in the lower estuarine reaches of the River Barrow and River Nore, a significant distance downstream of the Application Site (>110km). Given the significant distance between the Application Site and the areas of the SAC where this habitat is mapped, and the degree of dilution and attenuation that would occur over this distance, no complete source-pathway-receptor chain exists and there is no potential for adverse effects on this QI. No further assessment is required.	No
[1140] Mudflats and sandflats not covered by seawater at low tide	To maintain the Favourable conservation condition of the Mudflats and sandflats not covered by seawater at low tide in the River Barrow and River Nore SAC	This is an aquatic QI habitat of the River Barrow and River Nore SAC. While a hydrological connection exists between the Application Site and the SAC via downstream watercourses, the mapped areas of this habitat within the SAC are located in the lower estuarine reaches of the River Barrow, a significant distance downstream of the Application Site (>130km). Given the significant distance between the Application Site and the areas of the SAC where this habitat is mapped, and the degree of dilution and attenuation that would occur over this distance, no complete source-pathway-receptor chain exists and there is no potential for adverse effects on this QI. No further assessment is required.	No
[1170] Reefs	To maintain the Favourable conservation condition of Reefs in River Barrow and River Nore SAC	This is an aquatic QI habitat of the River Barrow and River Nore SAC. While a hydrological connection exists between the Application Site and the SAC via downstream watercourses, the mapped areas of this habitat within the SAC are located in the lower edge of the Barrow Suit Nore Estuary, close to Waterford Harbour, a significant distance downstream of the Application Site (>150km). Given the significant distance between the Application Site and the areas of the SAC where this habitat is mapped, and the degree of dilution and attenuation that would occur over this distance, no complete source-pathway-receptor chain exists and there is no potential for adverse effects on this QI. No further assessment is required.	No

Qualifying feature	Conservation Objective (NPWS, Version 2, June 2025 ⁴),	Rationale	Potential for Adverse Effects Y/N
[1310] Salicornia and other annuals colonising mud and sand	To maintain the favourable conservation condition of Salicornia and other annuals colonising mud and sand in the River Barrow and River Nore SAC	This is an aquatic QI habitat of the River Barrow and River Nore SAC. While a hydrological connection exists between the Application Site and the SAC via downstream watercourses, the mapped areas of this habitat within the SAC are located in the lower estuarine reaches of the River Barrow, a significant distance downstream of the Application Site (>140km). Given the significant distance between the Application Site and the areas of the SAC where this habitat is mapped, and the degree of dilution and attenuation that would occur over this distance, no complete source-pathway-receptor chain exists and there is no potential for adverse effects on this QI. No further assessment is required.	No
[1330] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>)	To restore the Favourable conservation condition of Atlantic salt meadows in the River Barrow and River Nore SAC	This is an aquatic QI habitat of the River Barrow and River Nore SAC. While a hydrological connection exists between the Application Site and the SAC via downstream watercourses, the mapped areas of this habitat within the SAC are located in the lower estuarine reaches of the River Barrow, a significant distance downstream of the Application Site (>130km). Given the significant distance between the Application Site and the areas of the SAC where this habitat is mapped, and the degree of dilution and attenuation that would occur over this distance, no complete source-pathway-receptor chain exists and there is no potential for adverse effects on this QI. No further assessment is required.	No
[1410] Mediterranean salt meadows (<i>Juncetalia maritimi</i>)	To restore the favourable conservation condition of Mediterranean salt meadows in the River Barrow and River Nore SAC	This is an aquatic QI habitat of the River Barrow and River Nore SAC. While a hydrological connection exists between the Application Site and the SAC via downstream watercourses, the mapped areas of this habitat within the SAC are located in the lower estuarine reaches of the River Barrow, a significant distance downstream of the Application Site (>140km). Given the significant distance between the Application Site and the areas of the SAC where this habitat is mapped, and the degree of dilution and attenuation that would occur over this distance, no complete source-pathway-receptor chain exists and there is no potential for adverse effects on this QI. No further assessment is required.	No
[1421] Killarney Fern (<i>Trichomanes speciosum</i>)	To maintain the Favourable conservation condition of Killarney Fern in the River Barrow and River Nore SAC	This is a terrestrial QI species of the River Barrow and River Nore SAC. According to the site-specific conservation objectives, three locations within the SAC are known, with three colonies of gametophyte and one sporophyte colony. These locations are a significant distance from the Application Site, and there is no connectivity between the Application Site and the habitats where this species occurs. There is no suitable habitat for this species within the	No

Qualifying feature	Conservation Objective (NPWS, Version 2, June 2025 ⁴),	Rationale	Potential for Adverse Effects Y/N
		Application Site. No complete source-pathway-receptor chain exists and there is no potential for adverse effects. No further assessment is required	
[3260] Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation	To maintain the Favourable conservation condition of Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation in the River Barrow and River Nore SAC	This is an aquatic QI habitat of the River Barrow and River Nore SAC. A hydrological connection has been established between the Application Site and the SAC via downstream watercourses. Given the hydrological connectivity, a complete source-pathway-receptor chain exists and the potential for adverse effects cannot be ruled out. This QI is assessed further in this NIS.	Yes
[4030] European dry heaths	To maintain the favourable conservation condition of European dry heaths in the River Barrow and River Nore SAC	This is a terrestrial QI habitat with no hydrological or functional connectivity to the Application Site. No further assessment is required.	No
[6430] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	To maintain the favourable conservation condition of Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels in the River Barrow and River Nore SAC	This is a riparian QI habitat of the River Barrow and River Nore SAC. According to the site-specific conservation objectives the distribution of this habitat in this SAC is currently unknown and it is considered to occur in association with some riverside woodlands, unmanaged river islands and in narrow bands along the floodplain of slowflowing stretches of river. A hydrological connection has been established between the Application Site and the SAC via downstream watercourses. On a precautionary basis, a complete source-pathway-receptor chain exists and the potential for adverse effects cannot be ruled out. This QI is assessed further in this NIS.	Yes
[7220] Petrifying springs with tufa formation (Cratoneurion)*	To maintain the Favourable conservation condition of Petrifying springs with tufa formation (Cratoneurion) in the River Barrow and River Nore SAC	This is a groundwater-dependent QI habitat of the River Barrow and River Nore SAC. While a hydrological connection exists between the Application Site and the SAC via downstream watercourses, the mapped areas of this habitat within the SAC are located in the River Nore and are not downstream of the Application Site. No groundwater connectivity has been established between the Application Site and areas where this habitat occurs within the SAC. Given the nature of the local hydrogeological regime with very limited groundwater recharge rates (Appendix 5), it is not considered that there is a pathway to any potential	No

Qualifying feature	Conservation Objective (NPWS, Version 2, June 2025 ⁴),	Rationale	Potential for Adverse Effects Y/N
		unmapped springs. Therefore, no complete source-pathway-receptor chain exists and there is no potential for adverse effects on this QI. No further assessment is required.	
[91A0] Old sessile oak woods with Ilex and Blechnum in the British Isles	To restore the favourable conservation condition of Old oak woodland with Ilex and Blechnum in the River Barrow and River Nore SAC	This is a terrestrial QI habitat with no hydrological or functional connectivity to the Application Site. No further assessment is required.	No
[91E0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)*	To restore the Favourable conservation condition of Alluvial forests with Alnus glutinosa and Fraxinus excelsior (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) in the River Barrow and River Nore SAC	This is a riparian QI habitat of the River Barrow and River Nore SAC. A hydrological connection has been established between the Application Site and the SAC via downstream watercourses. While mapped areas of this habitat do not occur in close proximity to the Application Site (closest mapped >40km downstream), according to the site-specific conservation objectives, further unsurveyed areas maybe present within the SAC. On a precautionary basis, a complete source-pathway-receptor chain exists and the potential for adverse effects cannot be ruled out. This QI is assessed further in this NIS.	Yes



Map Legend

- Application Site Boundary
- Special Protection Areas (SPA)
- Special Area of Conservation (SAC)
- WFD Sub-Catchments

Spatial Reference
Name: IRENET95 Irish Transverse Mercator
Datum: IRENET95
Projection: Transverse Mercator

SITE LOCATION - NOT TO SCALE

European Designated Sites

Project Title
Peat Extraction at Ballydermot, Co. Kildare and Co. Offaly

Project No. 250709	Drawing No. 2-1	Scale 1:200,000
Drawn By TS	Checked By JB	Date 31/07/2026

Email: info@mkofireland.ie / Website: www.mkofireland.ie

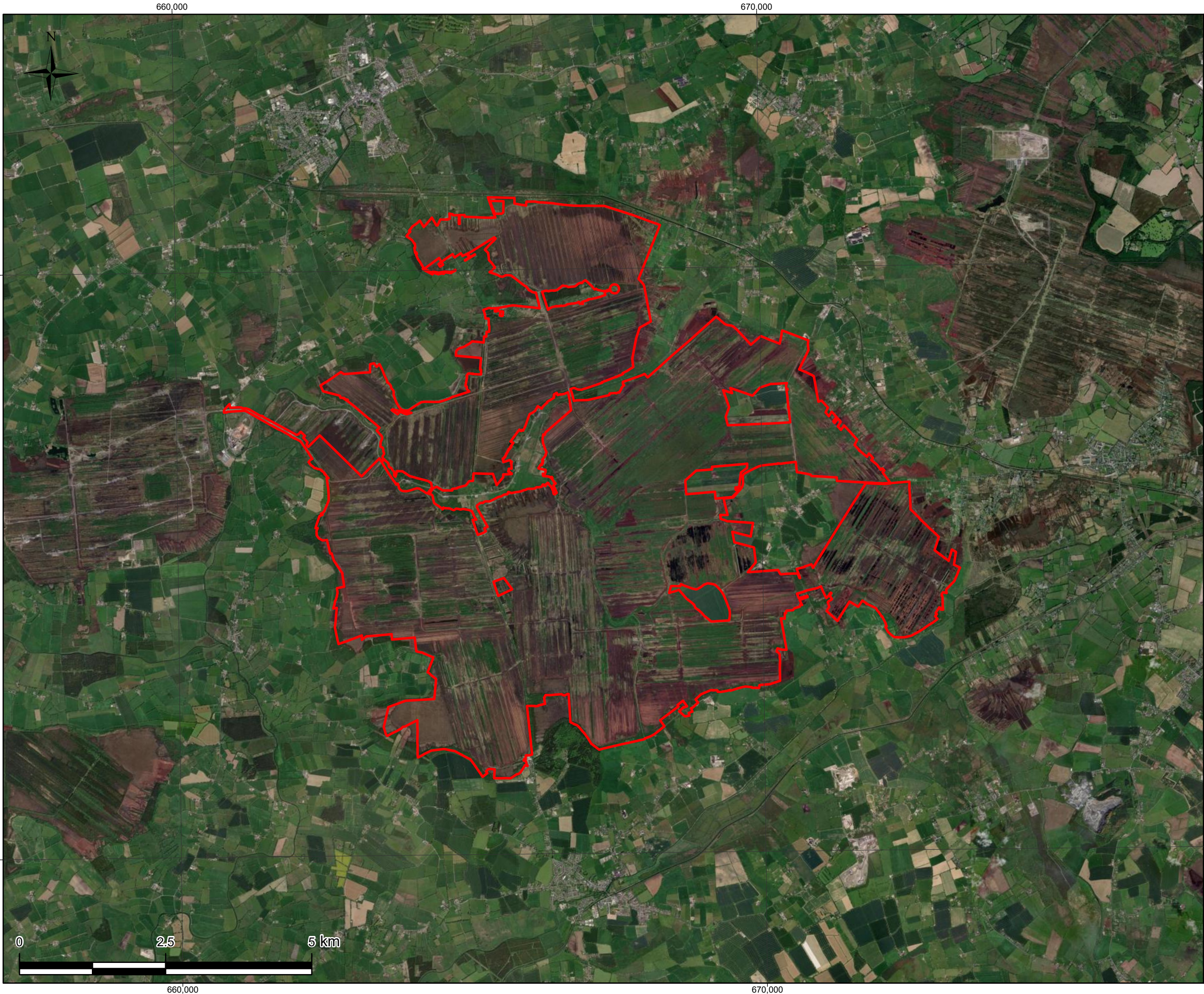
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3. DESCRIPTION OF THE PROJECT

3.1 Site Location

The Application Site is located 2.2km southeast of Edenderry, 3.3km west of Allenwood, 2.4km north of Rathangan and 1.7km east of Clonbullogue Village. The Application Site comprises 14. No. bogs located on the Offaly-Kildare County border. The bogs include: Ticknevin, Glashabaun North, Glashabaun South, Codd 1, Codd 2, Ballydermot North, Ballydermot South, Blackriver, Lullymore, Lullybeg, Barnaran, Killina, Derrybrennan and Lodge. The Application Site comprises an area of 5,448 hectares (ha).

The Application Site is located in a low-lying landscape rural in character. The topography today ranges between 84 m above ordnance datum (AOD) at its highest point to approximately 68 m AOD at its lowest point. The site measures approximately 10 km in length from north to south, and approximately 10.7 km from east to west, at its widest point. The Grid Reference co-ordinates for the approximate centre of the Bog Group are E 266159, N 225145. The boundaries of the individual bogs are mainly defined by hedgerows, watercourses and laneways. Under the Water Framework Directive (WFD; Directive 2000/60/EC), the Application Site is located primarily within the Figile_SC_010, Figile_SC_020, Figile_SC_030, Slate_SC_050 and Slate_SC_010 sub catchments with a small section of the site on the north boundary in Boyne_SC_010 sub catchment, and within the Barrow (Catchment ID 14). The Application Site is generally accessible via the local road network branching from the R402 to the north, R403 to the east, the R401 to the west and the R414 to the south, with the latter cutting through the southeast of the site.



Map Legend

Application Site Boundary

Spatial Reference
Name: IREN95 Irish Transverse Mercator
Datum: IREN95
Projection: Transverse Mercator

SITE LOCATION - NOT TO SCALE

Application Site Location

Project Title
**Peat Extraction at Ballydermot,
Co. Kildare and Co. Offaly**

Project No. 250709	Drawing No. 3-1	Scale 1:60,000
Drawn By TS	Checked By JB	Date 30/07/2026

Email: info@mkofireland.ie/ Website: www.mkofireland.ie

3.2

Project Details

Chapter 4: Project Description in the rEIAR, which is included as Appendix A of the rAASR in Appendix 1 of this rNIS, provides a description of the activities at the Application Site from 1935. It details activities at the onset of site preparation up to July 1988, a description of the rEIAR baseline as of July 1988, a description of activities from 1988 to the cessation of peat extraction in June of 2020, the management of the Application Site since June 2020 and the activities intended to be carried out at the Application Site into the future, including rehabilitations plans required under Condition 10.2 of the IPC Licence.

Peat extraction and all ancillary activities undertaken at the Application Site, which comprise the Project for which substitute consent is being sought, and for which this rNIS is prepared, consists of the following:

- i. Industrial scale peat extraction (milled peat, sod peat, sod moss and bin sod) at the Application Site from 1988 to June 2020;*
- ii. Installation, use and maintenance of surface water drainage infrastructure (drains, silt ponds, pumps) at the Application Site to facilitate peat extraction activity from 1988 to present day;*
- iii. Vegetation clearance to facilitate peat extraction activity from 1988 to June 2020;*
- iv. 1 no. welfare facility, 1 no. welfare facility, 1 no. handwashing facility, a toilet cubical building and an associated septic tank, 19 no. storage containers, 2 no. storage sheds, 8 no. vehicular bridges and 7 no. rail bridges;*
- v. Use and maintenance of pre-existing ancillary supporting infrastructure and services to facilitate peat extraction (e.g., railway infrastructure), from 1988 to present day;*
- vi. Control Measures associated with the above, inclusive of the IPC Licence measures (Ref. P0503-01) which commenced from 2000 onwards to the present day; and,*
- vii. All associated site development and ancillary works.*

The Cutaway Bog Decommissioning and Rehabilitation Plans for the Application Site, required under Condition 10 of the IPC Licence (Ref. P0503-01), provide a description of the bogs and their ecology, and outline the works that will be undertaken to achieve the aims of successful rehabilitation, the criteria for which are defined in the plans, along with a timescale for implementation. The remedial measures to be undertaken will follow proven and standard procedures that have been successfully applied by BnM, including drain blocking and modification of outfalls and overflow pipes to control water levels over time. A programme of monitoring, aftercare and maintenance will be implemented to validate the efficacy of the rehabilitation measures in achieving environmental stabilisation. These measures are described in full in Section 4.9 of Chapter 4 of the rEIAR (Appendix A of the rAASR).

Whilst Chapter 4: Project Description includes extensive information on activities within the Application Site from 1935 onwards, this rNIS assesses activities within the Application Site detailed in Appendix A of the rAASR from 1994 onwards. As previously stated, 1994 is when The Habitats Directive came into force, though it was not transposed into Irish law until 1997 through the European Communities (Natural Habitats) Regulations 1997 and when Appropriate Assessment (AA) became a legal requirement.

3.2.1

Description of the Application Site in 1988 and 1994

The paragraphs below are taken from Appendix A of the rAASR and describe the bogs within the Application Site at the rEIAR 1988 baseline. Whilst the rAASR and rNIS only assess activity within the Application Site from 1994, the information provided below would still have been applicable as the activities described were ongoing and had not materially changed by 1994 with peat extraction continuing until June 2020.

By 1988, the land use at the Application Site was well established as industrial peat extraction. The Application Site was drained with milled, sod moss and sod peat extraction were taking place across most of the Application Site in 1988. Railway infrastructure was also established throughout the Application Site by 1988. The main entrance points to the Application Site were at the Ballydermot Works entrance on the L-3001 road in the southwest of the Application Site, and from a local road (L-2506-3) which crosses the Grand Canal, passing the Lullymore Briquette Factory before cutting through Killina Bog in the northeast. Other access points include entrances off the L3001 Rathangan to Edenderry Road which cuts through the Application Site in a north to west direction and off the Allenwood to Rathangan Road (designated R414 in 1993) which cuts through the southeast of the Application Site. Ballydermot Works, which comprised welfare facilities, storage sheds, offices, maintenance buildings, staff carparks, HGVs storage area, a tiphead and a refuelling area is still in situ at present day. The following ancillary infrastructure was established at the site by July 1988:

1. *Railway infrastructure;*
2. *Internal machine passes/tracks;*
3. *Silt ponds and drains;*
4. *Welfare facilities;*
5. *Local holding areas;*
6. *Tiphead; and*
7. *Pumping stations.*

3.2.1.1 Ballydermot North Bog

Aerial imagery indicates that by July 1988, approximately 456.4ha of the Application Site was subject to milled peat extraction. Thus, the main landcover type at this time was cutover peat. Drainage was already installed, predominantly in a east-west orientation. Railway infrastructure was established in the bog at this time. 2 no. storage containers are located in the middle of the bog, 1 no was installed between 1995 and 1996 and remaining storage container was installed between 2001 and 2005. There were no silt ponds, pumps or surface water emission points located on Ballydermot North which remains the same today. The bog was accessed from several locations leading from the L3001 Edenderry to Rathangan Road along the eastern boundary. The topography of the Application Site is estimated to have been approximately 72 – 86mOD by 1988.

3.2.1.2 Ballydermot South Bog

Aerial imagery from 1988 indicates that drainage was in place and extraction of milled peat was underway on approx. 357.7ha in the majority of Ballydermot South Bog. A total of 74.8ha were not drained nor subject to peat extraction in the west and southeast of the bog. Ballydermot South bog was linked via railway infrastructure to Ballydermot Works in the southeast, to Ballydermot North to the north-west and Blackriver to the east of the bog. There were no silt ponds, pumps or surface water emission points located on Ballydermot South by 1988. The main access point to Ballydermot South Bog was to the south of the Application Site via the west of the L3001 from Ballydermot Works, which remains the main access point today. The topography of this bog is estimated to have been approx. 73 - 80mOD by July 1988.

3.2.1.3 Blackriver Bog

By July 1988, peat extraction was underway across the majority of Blackriver Bog, (approx. 707.6ha). Areas of drained bog not yet subject to peat extraction were located in the northwest of the bog (approx. 20.1ha). Drainage for milled peat was already installed, and railway infrastructure, which was laid throughout the 1950s and 1960s, connected Blackriver Bog to Glashabaun South Bog (to the north) and Barnaran Bog (to the east). There were no silt ponds, pumps or surface water emission points located on Ballydermot South by 1988. The main access point to Blackriver Bog was off the L3001 Edenderry to Rathangan Road at the western boundary of the bog. The topography of Blackriver Bog is estimated to have been approx. 72 - 81mOD by July 1988.

3.2.1.4 Lullybeg Bog

By July 1988 Lullybeg Bog had been drained and sod moss extraction was underway across the entirety of the bog, 266.9ha. Railway infrastructure established on the eastern boundary of the bog, connecting Lullybeg Bog to Killina Bog to the northeast and Blackriver Bog to the south. Access to the Lullybeg Bog in 1988 was via the L81371 Killyguire local road, and this remains the main access point at present day. There were no silt ponds, pumps or surface water emission points located on Lullybeg by 1988. The topography of Lullybeg Bog is estimated to have been approx. 72 - 78mOD by July 1988.

3.2.1.5 Lullymore Bog

Drainage infrastructure was fully established for sod moss in 146.17ha of Lullymore Bog by 1988, as deduced from available aerial imagery. An area of 28.6ha of Lullymore Bog was drainage but not yet subject to peat extraction. There were no silt ponds, pumps or surface water emission points located on Lullymore Bog by 1988. Access to Lullymore Bog was and remains via a local road which runs from the R414 and through the Lullymore Heritage & Discovery Park which opened in 1993. The topography of the bog is estimated to have been approx. 73 - 84mOD by July 1988. The Lullybeg stream runs alongside the western boundary of the bog.

3.2.1.6 Lodge Bog

Satellite imagery and annual reports indicate that by July 1988, approx. 379.4ha of Lodge Bog were undergoing sod moss peat extraction. Thus, the main landcover type at this time was cutover peat. A small area measuring approx. 28.9ha of remnant uncut raised bog was located in the southwest of the bog. Drainage was already installed, predominantly in a northeast-southwest orientation. Railway infrastructure was laid in the bog, connecting the bog to Barnaran Bog in the west and Allenwood Power Station in the northeast. There were no silt ponds, pumps or surface water emission points located on Lodge Bog by 1988. The main access point to Lodge Bog was off the Rathangan to Allenwood (R414) road. The topography of Ballivor Bog is estimated to have been approx. 78 - 85mOD by July 1988.

3.2.1.7 Killina Bog

Aerial imagery from 1988 indicates that drainage was fully established across Killina Bog. A total of 28.9ha were drained but not subject to peat extraction in 1988. Sod moss extraction was ongoing in 1988 across 171.89ha of Killina bog. The bog was linked via railway infrastructure to Lullymore Briquette Factory to the north and Allenwood Power Station to the southeast. There were 2 no. silt ponds on Killina Bog, both were installed between 1988 and 1995. There are 2 no. surface water emission points which were installed around 1988 and no pumps on the bog. The silt ponds and surface water emission points remain in situ today. The main access point to Killina Bog was to the north of the Rathangan to Allenwood (R414) road, which remains the main access point today. The topography of this bog is estimated to have been approx. 78 - 88mOD by July 1988.

3.2.1.8 Barnaran Bog

By July 1988, sod moss extraction was underway across all of Barnaran Bog, (approx. 494.3ha). Railway infrastructure connected Barnaran Bog to Blackriver Bog to the west and Lodge Bog to the east. There are 3 no. silt ponds located in Barnaran Bog; all of which were installed by 1988. There are 2 no. surface water emission points which were installed at the same time as the silt ponds. There are no pumps on Barnaran Bog. The main access to the eastern part of the site was from the R414 road or through the Lullymore Heritage Park. Access to the western part was available from a track which runs along the western margin. The topography of Barnaran Bog is estimated to have been approx. 75 - 84mOD by July 1988.

3.2.1.9 Derrybrennan Bog

By July 1988 Derrybrennan Bog had been drained and milled peat extraction was continuing across 199.7ha of the bog. Railway infrastructure was also in situ, connecting Derrybrennan Bog to Lullymore Briquette Factory to the east. Access to Derrybrennan Bog in 1988 was via a fourth-class road which runs northeast from the grand canal into the bog, and this remains the main access point at present day. There are 2 no. silt ponds, 2 no. surface water emission points and no pumps located on Derrybrennan Bog. Both of the silt ponds were installed between 1988 and 1995. The topography of Derrybrennan Bog is estimated to have been approx. 75 -86mOD by July 1988.

3.2.1.10 Glashabaun North Bog

Satellite imagery and annual reports indicate that by July 1988, the majority of Glashabaun North was subject to milled peat extraction, approx. 406.7ha. Thus, the main landcover type at this time was cutover peat. Several small areas measuring approx. 86.3ha of remnant uncut raised bog were located predominantly in the north at the edges of the bog. Drainage was already installed, predominantly in a west-east orientation. Railway infrastructure was laid in the bog connecting Glashabaun North to Glashabaun Works in the northwest and Glashabaun South in the south. There were 2 no. silt ponds located in Glashabaun North Bog, 2 no. of which was installed by 1988. There are 2 no. pumps located on the south of the bog one submersible pump and one screw pump; the installation date of the pumps is unknown. There were no surface water emission points located on the bog. Access was available from the L1001 Edenderry to Rathangan or from the Glashabaun works entrance to the north. The topography of Glashabaun North Bog is estimated to have been approx. 72 - 83mOD by July 1988.

3.2.1.11 Glashabaun South Bog

Aerial imagery from 1988 indicates that drainage was in place and extraction of milled peat was underway on approx. 447.5ha in the northern portion of Glashabaun South Bog. A total of 121.5ha were drained but not subject to peat extraction. Glashabaun South bog was linked via railway infrastructure to Glashabaun North Bog in the north, Killina Bog to the east and Blackriver Bog to the west. There are 11 no. silt ponds in Glashabaun South and 6 no. surface water emission points. Of the 11 no. silt ponds installed at Glashabaun South, 6 no. were installed between 1988 and 1995. No pumps were installed on Glashabaun South Bog by 1988. The Cushaling River runs along the northern boundary of Glashabaun South Bog. The main access point to the bog was from the existing L81371 Cushaling to Killyguire Road which runs along the southwest margin of the bog site or from an existing track which runs along the extreme northeast margin, which remains the main access point today. The topography of this bog is estimated to have been approx. 73 - 81mOD by July 1988.

3.2.1.12 Ticknevin Bog

By 1988 sod moss extraction was underway across 357.6ha of Ticknevin bog. A total of 30.6ha were drained but not subject to peat extraction. Approximately 28.25ha was neither drained nor subject to peat extraction. Access to the bog was possible via the L1001 Edenderry to Rathangan Road which runs northwest to southeast through the bog and is still the main access point today. There are 6 no. silt ponds, 1 no. of which was installed between 1988 and 1995 which remain in situ today. There are 2 no. submersible pumps on Ticknevin Bog; the installation date of these pumps is unknown. The topography of the bog today ranges from approx. 77 - 81mOD by July 1988.

3.2.1.13 Codd 1 Bog

Drainage infrastructure was fully established for milled peat extraction in 247ha of Codd 1 Bog by 1988, as deduced from available aerial imagery. There were 4 no. silt ponds installed by 1988 and 3 no. surface water emission points installed at the same time as the silt ponds, 2 no. pumps were located on Lullybeg by 1988. Access to the bog remains available from a drivable track off of the L3001

Rathangan to Edenderry Road which runs along the eastern boundary. The topography of the bog is estimated to have been approx. 72 - 79mOD by July 1988.

3.2.1.14 Codd 2 Bog

Drainage infrastructure was established for milled peat extraction in 291ha of Codd 2 Bog by 1988, as deduced from available aerial imagery. A total of 1.9ha were drained but not subject to peat extraction. Approximately 10.54 ha was neither drained nor subject to peat extraction. There was 1 no. surface water emission point in place, all of which remain in situ today. 4 no. silt ponds were installed by 1988 and there are no pumps located on Codd 2. Access is available from the public road L1001 along the eastern boundary and from an existing track which runs off of the L1001 close to the southern and western boundaries. The topography of the bog is estimated to have been approx. 72 - 80mOD by July 1988.

3.3 Overview of Peat Extraction at the Application Site

Peat extraction and ancillary activities, as detailed in Section 4.2.2 of Appendix A of the rAASR, continued at the Application Site until June 2020 when peat extraction ceased across the Application Site. Section 4.5 of Appendix A of the rAASR details the continued peat extraction and ancillary activities within the Application Site from the rEIAR baseline of 1988 until June 2020, which includes the period of assessment for this rNIS (1994 -2020). Section 3.3.1 below is a modified version of Section 4.6.1 of Appendix A of the AASR to cover the peat extraction assessment period of this rNIS only.

3.3.1 Peat Extraction Volumes July 1994-June 2020

The volumes of peat removed from the Application Site varied from year to year and were influenced by weather conditions. The tonnages of peat extracted are outlined in Plate 3-1 and in Table 3-1 below.

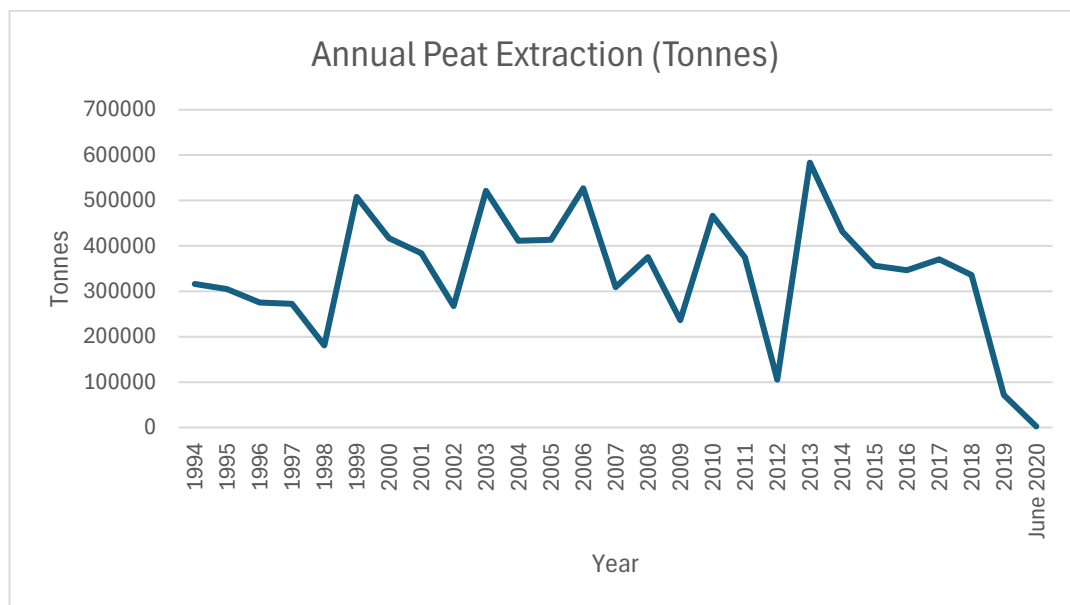


Plate 3-1 Annual Peat Extraction Volumes 1994-2020

There are no detailed records for peat extraction volumes from 1996 to 1997, therefore data for the 10-year periods from 1994 to 2004 and 1998 to 2008 was selected as a representative sample from which an average value has been calculated to represent peat extraction volumes in the 1996 to 1997 periods.

Between 1994 and June 2020, an average of 330,506 tonnes of peat were extracted each year, with a total of approximately 8,923,660 tonnes extracted between 1994 and the cessation of peat extraction in June 2020. There was a closing stock of horticultural peat (sod moss and bin sod combined) recorded for the 2020 season of 2,321 tonnes at the point of the cessation of peat extraction.

During the Peat Extraction Phase, BnM implemented a stockpiling system whereby the aim was to have three years supply stockpiled at any time to ensure there was a supply available to the power stations in years of poor harvest due to weather conditions. Although peat extraction ceased in June 2020, the removal of stockpiled peat continued beyond this date and was completed in October 2021.

From the recorded volumes in Table 3-1, the most productive extraction year was 2013 with 583,428 tonnes extracted this season. The least productive extraction year was 2019 with 71,352 tonnes. The year of 2020 doesn't represent a full year as peat extraction ceased after 3 weeks in June 2020.

Full details of peat extraction and ancillary activities within the Application Site during the assessment period are detailed in Appendix A of the rAASR.

Table 3-1 Peat Extraction 1994-2020 (Tonnes)

Year	Tonnes	Year	Tonnes
1994	316,235	2008	375,433
1995	304,810	2009	236,762
1996	275,297*	2010	466,231
1997	272,497*	2011	374,627
1998	180,800	2012	105,369
1999	507,659	2013	583,428
2000	416,772	2014	431,814
2001	383,787	2015	356,030
2002	26,481	2016	346,540
2003	521,327	2017	370,754
2004	411,387	2018	336,175
2005	413,319	2019	71,352
2006	527,185	June 2020**	2321
2007	309,268		
Total Volume Extracted (tonnes)	8,923,660		

*Based on average peat extraction volumes at the Application Site in the 10-year period between 1998 and 2008 in the absence of accurate data.

**Peat extraction at the Application Site was ongoing for 3 weeks in June in this year leading to a lower annual extraction volume compared to previous years

4. CHARACTERISTICS OF THE RECEIVING ENVIRONMENT

4.1 Desk Study Results

The results of a review of the NPWS site-specific conservation objectives documents, site synopsis documents and Natura 2000 standard data forms for the Screened-in European Sites identified in Section 2 above are presented below.

4.1.1 The Long Derries, Edenderry SAC

The Long Derries, Edenderry was proposed as a Site of Community Importance (SCI) in 1997 under the EU Habitats Directive. It was subsequently designated as a Special Area of Conservation (SAC) in Irish law in 2016 through S.I. No. 528/2016.

The QI for which the site is designated, and the associated conservation objectives (NPWS, 2021) are presented in Table 4-1.

Table 4-1 The Long Derries, Edenderry SAC QIs and Conservation Objectives

Qualifying Interest	Conservation Objective
[6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites)	To restore the favourable conservation condition of Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites) in The Long Derries, Edenderry SAC

4.1.1.1 Main pressures and threats to the SAC

The NPWS Natura 2000 – Standard Data Form for the SAC (available on www.natura2000.eea.europa.eu) was reviewed. The data form contains a description of the SAC as well as ecological information on the SAC and identifies the main threats and pressures to the SAC.

The threats, pressures and activities identified in the Natura 2000 standard data form for The Long Derries, Edenderry SAC are listed in Table 4-2.

Table 4-2 The Long Derries, Edenderry SAC site-specific threats, pressures and activities

Negative Impacts			
Rank	Threats and Pressures		Inside/Outside
High	A04.03	Abandonment of pastoral systems, lack of grazing	Inside
High	D01	Roads, paths and railroads	Inside
High	G01.03.02	Off-road motorized driving	Inside
High	K01.01	Erosion	Inside
High	K02.01	Species composition change (succession)	Inside
Medium	E05	Storage of materials	Inside

4.1.1.2 **Qualifying Interests**

Information on the QI for which the site is designated is provided below.

4.1.1.2.1 **Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210]**

According to the site-specific conservation objectives document for the SAC the current total area of the qualifying habitat in the SAC is unknown. As part of the Grassland Monitoring Project 2006, Dwyer *et al.* (2007) visited The Long Derries, Edenderry SAC and stated that elements of 6210 habitat were found in the western section of the SAC, in and associated with the gravel pits, and that the habitat had become rank at the eastern part of the SAC, where there is also much scrub.

4.1.2

River Barrow and River Nore SAC

The River Barrow and River Nore SAC was proposed as a Site of Community Importance (SCI) in 2002 under the EU Habitats Directive. It was subsequently designated as a Special Area of Conservation (SAC) in Irish law in 2024 through S.I. No. 648/2024.

The QIs for which the site is designated, and their associated conservation objectives (NPWS, 2025) are presented in Table 4-3.

Table 4-3 River Barrow and River Nore SAC QIs and Conservation Objectives

Qualifying Interest	Conservation Objective
[1016] Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>)	To maintain the Favourable conservation condition of Desmoulin's whorl snail in the River Barrow and River Nore SAC
[1029] Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>)	To restore the Favourable conservation condition of the Freshwater pearl mussel (<i>Margaritifera margaritifera</i>) in River Barrow and River Nore SAC
[1092] White-clawed Crayfish (<i>Austropotamobius pallipes</i>)	To maintain the Favourable conservation condition of White-clawed crayfish in the River Barrow and River Nore SAC
[1095] Sea Lamprey (<i>Petromyzon marinus</i>)	To restore the Favourable conservation condition of Sea lamprey in the River Barrow and River Nore SAC
[1096] Brook Lamprey (<i>Lampetra planeri</i>)	To restore the favourable conservation condition of Brook lamprey in the River Barrow and River Nore SAC
[1099] River Lamprey (<i>Lampetra fluviatilis</i>)	To restore the Favourable conservation condition of River lamprey in the River Barrow and River Nore SAC
[1103] Twaite Shad (<i>Alosa fallax fallax</i>)	To restore the favourable conservation condition of Twaite shad in the River Barrow and River Nore SAC
[1106] Salmon (<i>Salmo salar</i>)	To restore the favourable conservation condition of Salmon in the River Barrow and River Nore SAC
[1355] Otter (<i>Lutra lutra</i>)	To restore the favourable conservation condition of Otter in the River Barrow and River Nore SAC
[1130] Estuaries	To maintain the favourable conservation condition of Estuaries in the River Barrow and River Nore SAC
[1140] Mudflats and sandflats not covered by seawater at low tide	To maintain the Favourable conservation condition of the Mudflats and sandflats not covered by seawater at low tide in the River Barrow and River Nore SAC
[1170] Reefs	To maintain the Favourable conservation condition of Reefs in River Barrow and River Nore SAC
[1310] Salicornia and other annuals colonising mud and sand	To maintain the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in the River Barrow and River Nore SAC

Qualifying Interest	Conservation Objective
[1330] Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>)	To restore the Favourable conservation condition of Atlantic salt meadows in the River Barrow and River Nore SAC
[1410] Mediterranean salt meadows (<i>Juncetalia maritimi</i>)	To restore the favourable conservation condition of Mediterranean salt meadows in the River Barrow and River Nore SAC
[1421] Killarney Fern (<i>Trichomanes speciosum</i>)	To maintain the Favourable conservation condition of Killarney Fern in the River Barrow and River Nore SAC
[3260] Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation	To maintain the Favourable conservation condition of Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation in the River Barrow and River Nore SAC
[4030] European dry heaths	To maintain the favourable conservation condition of European dry heaths in the River Barrow and River Nore SAC
[6430] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	To maintain the favourable conservation condition of Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels in the River Barrow and River Nore SAC
[7220] Petrifying springs with tufa formation (Cratoneurion)*	To maintain the Favourable conservation condition of Petrifying springs with tufa formation (Cratoneurion) in the River Barrow and River Nore SAC
[91A0] Old sessile oak woods with Ilex and Blechnum in the British Isles	To restore the favourable conservation condition of Old oak woodland with Ilex and Blechnum in the River Barrow and River Nore SAC
[91E0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)*	To restore the Favourable conservation condition of Alluvial forests with Alnus glutinosa and Fraxinus excelsior (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) in the River Barrow and River Nore SAC

4.1.2.1 Main pressures and threats to the SAC

The NPWS Natura 2000 – Standard Data Form for the SAC (available on <https://natura2000.eea.europa.eu/Natura2000/sdf/#/sdf?site=IE0002162&release=62>) was reviewed. The data form contains a description of the SAC as well as ecological information on the SAC and identifies the main threats and pressures to the SAC.

The threats, pressures and activities identified in the Natura 2000 standard data form for the River Barrow and River Nore SAC listed in Table 4-4.

Table 4-4 River Barrow and River Nore SAC site-specific threats, pressures and activities

Negative Impacts			
Rank	Threats and Pressures		Inside/Outside
High	A02.01	Agricultural intensification	Both

Negative Impacts			
Rank	Threats and Pressures		Inside/Outside
High	H01	Pollution to surface waters (limnic, terrestrial, marine & brackish)	Both
High	J02.05.02	Modifying structures of inland water courses	Inside
High	J02.12.02	Dykes and flooding defence in inland water systems	Inside
High	K01.01	Erosion	Inside
Medium	M01	Changes in abiotic conditions	Inside
Medium	J02.02.01	Dredging/ removal of limnic sediment	Inside
Medium	F02	Fishing and harvesting aquatic resources	Outside
Medium	B02	Forest and Plantation management & use	Both
Medium	B07	Forestry activities not referred to above	Both
Medium	J02	Human induced changes in hydraulic conditions	Both
Medium	A04.01.01	Intensive cattle grazing	Inside
Medium	I01	Invasive non-native species	Inside
Medium	C01.03	Peat extraction	Outside
Medium	J03.02.01	Reduction in migration/ migration barriers	Inside
Medium	B05	Use of fertilizers (forestry)	Both
Medium	J02.06	Water abstractions from surface waters	Inside
Low	A10.01	Removal of hedges and copses or scrub	Inside
Low	C01.01.01	Sand and gravel quarries	Both
Low	D03.01	Port areas	Inside
Low	E02	Industrial or commercial areas	Outside
Low	F01.01	Intensive fish farming, intensification	Inside
Low	F02.01.02	Netting	Inside
Low	F02.03	Leisure fishing	Inside

4.1.2.2 Qualifying Interests

Information on the QIs for which the site is designated are provided below.

4.1.2.2.1 **Desmoulin's Whorl Snail (*Vertigo moulinsiana*) [1016]**

According to the site-specific conservation objectives document for the SAC, there are two known sites where this species is present within the SAC: Borris Bridge, Co. Carlow and Boston Bridge, Kilmaseer, Co. Laois.

4.1.2.2.2 **Freshwater Pearl Mussel (*Margaritifera margaritifera*) [1029]**

According to the site-specific conservation objectives document for the SAC, the conservation objectives apply to the Ballymurphy, Mountain and Nore freshwater pearl mussel populations, which are listed on the European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009 (Statutory Instrument No. 296 of 2009). The target is for the species to be sufficiently widespread to maintain itself on a long-term basis as a viable component of the Ballymurphy, Mountain and Nore systems.

The Ballymurphy population is confined to the Ballymurphy (or Ballyroughan Little) River, a tributary of the Barrow River. The population is distributed from above Earl's Bridge down to the bridge at Clashganna. Given the severe decline since 2004 and the scattered distribution it is highly likely the species range has contracted.

The Mountain population is confined to the Mountain River, a tributary of the Barrow River. The population is distributed from just upstream of its confluence with the Kiledmond River down to where the Mountain joins the main channel of the Barrow River. The best habitat for the species is upstream of Borris. Given the continuing decline in mussel numbers it is highly likely that there has been an upstream contraction.

The Nore population stretches from Poorman's Bridge to Lismaine Bridge, with most of the population found between Poorman's Bridge and the just upstream of the bridge at Ballyragget. However, given the severe decline upstream of New Bridge, it is more likely that the range has contracted.

4.1.2.2.3 **White-clawed Crayfish (*Austropotamobius pallipes*) [1092]**

According to the site-specific conservation objectives document, the white-clawed crayfish is present almost throughout this SAC. The records extend as far downstream as Thomastown on the Nore and Graiguenamanagh on the Barrow.

4.1.2.2.4 **Sea Lamprey (*Petromyzon marinus*) [1095]**

According to the site-specific conservation objectives document for this site, the attributes and targets are based on spawning bed mapping by Inland Fisheries Ireland (IFI). Studies of the Barrow catchment have found a very limited distribution and small population size of sea lamprey, with a low level of occurrence, low density and fragmented population structure of juveniles. This is considered to reflect the paucity of areas of fine sediment limiting the potential development of sizeable juvenile populations, and the presence of weirs and dams on the Barrow main stem, which frequently serve to restrict sea lamprey upstream migration.

4.1.2.2.5 **Brook Lamprey (*Lampetra planeri*) [1096]**

According to the site-specific conservation objectives document for this site, the attributes and targets are based on spawning bed mapping by Inland Fisheries Ireland (IFI). As ammocoetes of river and brook lamprey cannot be reliably distinguished in the field, it is not possible to determine the relative contribution of each species to the ammocoete populations recorded in the Barrow catchment. Studies have found a non-uniform distribution of lamprey ammocoetes within the catchment, with the paucity of areas of fine sediment deposits considered a major factor impacting on their distribution and status.

4.1.2.2.6 **River Lamprey (*Lampetra fluviatilis*) [1099]**

According to the site-specific conservation objectives document for this site, the attributes and targets are based on spawning bed mapping by Inland Fisheries Ireland (IFI). As ammocoetes of river and brook lamprey cannot be reliably distinguished in the field, it is not possible to ascertain, through ammocoetes, the extent of anadromy of river lamprey in the Barrow catchment. River lamprey are known to occur in the upper tidal Barrow in spring, however, the degree of upriver penetration and the size of population involved is not known.

4.1.2.2.7 **Twaite Shad (*Alosa fallax fallax*) [1103]**

According to the site-specific conservation objectives document for this SAC, this is one of only a handful of spawning grounds in the country for twaite shad. Regular breeding has been confirmed in the River Barrow in recent years, but not in the River Nore.

4.1.2.2.8 **Salmon (*Salmo salar*) [1106]**

According to the site-specific conservation objectives document, the freshwater stretches of the River Nore main channel is a designated salmonid river. The upper stretches of the Barrow and Nore, particularly the Owenass River, are very important for spawning.

4.1.2.2.9 **Otter (*Lutra lutra*) [1355]**

According to the site-specific conservation objectives document for the SAC, the extent of terrestrial habitat is calculated as 122.8ha above high water mark and 1,136.0ha along river banks and around ponds. The extent of marine habitat is calculated as 857.7ha. The extent of freshwater river habitat is calculated as 616.6km. The extent of freshwater lake habitat is calculated as 2.6ha. According to the site-specific conservation objectives, otters need lying up areas throughout their territory where they are secure from disturbance.

4.1.2.2.10 **Estuaries [1130]**

According to the site-specific conservation objectives document, the habitat area was estimated using OSI data and the defined Transitional Water Body area under the Water Framework Directive as 3856ha. Based on site-specific surveys undertaken, most of the suitable habitat was colonised overlying the rocky substrate and there was a high percentage of clearly defined and intact honeycomb reef structures.

4.1.2.2.11 **Mudflats and sandflats not covered by seawater at low tide [1140]**

According to the site-specific conservation objectives document, the habitat area was estimated using OSI data as 926ha. Good quality intertidal sand and mudflats have developed on a linear shelf on the western side of Waterford Harbour, extending for over 6 km from north to south between Passage East and Creadaun Head, and in places are over 1 km wide. The sediments are mostly firm sands, though grade into muddy sands towards the upper shore. They have a typical macro-invertebrate fauna, characterised by polychaetes and bivalves.

4.1.2.2.12 **Reefs [1170]**

According to the site-specific conservation objectives document, the habitat area is estimated as 17.20ha based on information from a site-specific survey and orthophotography. An extensive area of honeycomb worm biogenic reef occurs adjacent to Duncannon, Co. Wexford on the eastern shore of the estuary. It is formed by the polychaete worm *Sabellaria alveolata*. This intertidal *Sabellaria alveolata* reef is formed as a sheet of interlocking tubes over a considerable area of exposed bedrock. This polychaete species constructs tubes, composed of aggregated sand grains, in tightly packed masses with

a distinctive honeycomb-like appearance. These can be up to 25cm proud of the substrate and form hummocks, sheets or more massive formations. A range of species are reported from these reefs including: *Enteromorpha* sp.; *Ulva* sp.; *Fucus vesiculosus*; *Fucus serratus*; *Polysiphonia* sp.; *Chondrus crispus*; *Palmaria palmate*; *Coralinus officinalis*; *Nemertea* sp.; *Actinia equine*; *Patella vulgate*; *Littorina littorea*; *Littorina obtusata* and *Mytilus edulis*.

4.1.2.2.13 **Salicornia and other annuals colonising mud and sand [1310]**

According to the site-specific conservation objectives document, the habitat area was based on data from the Saltmarsh Monitoring Project. The Ringville subsite was mapped and no additional areas of potential *Salicornia* mudflat were identified from an examination of aerial photographs, giving a total estimated area of 0.03ha. Further unsurveyed areas maybe present within the site.

4.1.2.2.14 **Atlantic salt meadows (*Glauco-Puccinellietalia maritima*) [1330]**

According to the site-specific conservation objectives document, the habitat area was based on data from the Saltmarsh Monitoring Project. Four sub-sites were mapped and additional areas of potential saltmarsh were identified from an examination of aerial photographs, giving a total estimated area of Atlantic salt meadow of 35.07ha. Further unsurveyed areas maybe present within the site.

4.1.2.2.15 **Mediterranean salt meadows (*Juncetalia maritimi*) [1410]**

According to the site-specific conservation objectives document, the habitat area was based on data from the Saltmarsh Monitoring Project. Three sub-sites were mapped and no additional areas of potential saltmarsh were identified from an examination of aerial photographs, giving a total estimated area of Mediterranean salt meadow of 6.82ha. Further unsurveyed areas maybe present within the site.

4.1.2.2.16 **Killarney Fern (*Trichomanes speciosum*) [1421]**

According to the site-specific conservation objectives document, three locations known, with three colonies of gametophyte and one sporophyte colony. At least one of the locations to have a population structure comprising sporophyte, unfurling fronds, 'juvenile' sporophyte and gametophyte generations.

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

According to the site-specific conservation objectives document, the full distribution of this habitat and its sub-types in this site is currently unknown. The basis of the selection of the SAC for the habitat is the presence of an excellent example of the vegetation community (nutrient-rich type) associated with extensive tufa deposits on the riverbed in the Kings tributary of the Nore. Other examples of this or other sub-types may be present within the SAC.

4.1.2.2.18 **European dry heaths [4030]**

According to the site-specific conservation objectives document, the spatial extent of this habitat is currently unmapped but indicated as occurring on the steep, free-draining, river valley sides especially the Barrow and tributaries in the foothills of the Blackstairs Mountains. Dry heath in this SAC occurs on free-draining nutrient poor soils and is often characterised by gorse and open acid grassland areas. A characteristic coastal dry heath of the southeast also occurs.

4.1.2.2.19 **Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]**

According to the site-specific conservation objectives document, the distribution of this habitat in this site is currently unknown. It is considered to occur in association with some riverside woodlands,

unmanaged river islands and in narrow bands along the floodplain of slowflowing stretches of river. This habitat requires winter inundation, which results in deposition of naturally nutrient-rich sediment.

4.1.2.2.20 **Petrifying springs with tufa formation (Cratoneurion)* [7220]**

According to the site-specific conservation objectives document, a good example of petrifying springs with tufa formations occurs at Dysart Wood along the Nore. This is a rare habitat in Ireland and one listed with priority status on Annex I of the E.U. Habitats Directive. These hard water springs are characterised by lime encrustations, often associated with small waterfalls. A rich bryophyte flora is typical of the habitat and two diagnostic species, *Palustriella commutata* and *Eucladium verticillatum*, have been recorded. Full distribution of this habitat in this site is currently unknown. It has been described in woodlands at Dysart, between Thomastown and Inistioige.

4.1.2.2.21 **Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]**

According to the site-specific conservation objectives document, this habitat covers an area of at least 85.08ha. The best examples of old oak woodlands are seen in the ancient Park Hill woodland in the estate at Abbeyleix; at Kyleadahir, on the Delour, Forest Wood House, Kylecorragh and Brownstown Woods on the Nore; and at Cloghristic Wood, Drummond Wood and Borris Demesne on the Barrow, though other patches occur throughout the site.

4.1.2.2.22 **Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, *Alnion incanae*, *Salicion albae*) * [91E0]**

According to the site-specific conservation objectives document, this habitat covers an area of at least 181.54ha. Good examples of alluvial forest (a priority habitat on Annex I of the E.U. Habitats Directive) are seen at Rathsnagadan, Murphy's of the River, in Abbeyleix estate and along other shorter stretches of both the tidal and freshwater elements of the site.

4.1.3 **EPA River Catchments and Watercourses**

A full hydrological assessment of the Application Site was undertaken for the accompanying rEIAR (Chapter 8) and is included in Appendix 5 of this rNIS. Information from this chapter was used to inform the assessment presented in this rNIS.

Regionally the vast majority of the Application Site is located in the River Barrow surface water catchment within Hydrometric Area 14 of the South Eastern River Basin District. A small area in the north of the Ticknevin Bog located in the River Boyne surface water catchment within Hydrometric Area 07 of the Eastern River Basin District.

Regionally, within the River Barrow surface water catchment, the Application Site is located in 3 no. river sub-catchments. The majority of the Application Site is located within the Figile_SC_010 river sub-catchment, the southwest of the Application Site is located within the Figile_SC_020 river sub-catchment and the south and southeast are located within the Slate_SC_010 river sub-catchment.

Within the Figile_SC_010 river sub-catchment, the Application Site is mapped in 3 no. WFD river sub-basins: the Abbeylough_010, Figile_020 and Figile_030 WFD river sub-basins.

- Within the Abbeylough_010 WFD river sub-basin, the Abbeylough Stream (EPA Code: 14A01) flows to the west along the northern boundary of Derrybrennan Bog where it discharges into the Figile River (EPA Code: 14F01).
- Within the Figile_020 WFD river sub-basin, the Figile River flows to the west, between Glashabaun South and Glashabaun North bogs. A tributary of the Figile River, referred to by the EPA as the Lullymore East Stream (EPA Code: 14L11) is mapped to flow to the west from the western boundary of Lodge Bog. This stream dissects the northern sections of Lullymore

and Lullybeg bogs and forms the boundary between Blackriver Bog to the west and Glashabaun South Bog to the east before it discharges into the Figile River. A smaller stream, referred to by the EPA as the Lullybeg Stream (EPA Code: 14L13), flows around the eastern, southern and western perimeter of Lullybeg Bog before it discharges into the Lullymore East Stream. Another stream, assigned the same name (Lullybeg) on the EPA database, flows from south to north through the western section of Blackriver Bog before it discharges into the Figile River.

- Within the Figile_030 WFD river sub-basin, the Figile River flows to the northwest, separating Codd 1 in the south from Codd 2 in the north. A small tributary of the Figile River, the Clonbrown Stream (EPA Code: 14C32) is mapped to flow to the north along the eastern boundary of Ballydermot North Bog before it discharges into the Figile River close to the east of Codd 1 Bog. The EPA also map a stream referred to as the Cloncant Stream (EPA Code: 14C41) to flow to the southwest, dissecting Codd 2 Bog before discharging into the Figile River. Further north, Ticknevin Bog is drained by 2 unnamed no. streams which merge at its southern boundary to form the Codd Stream (EPA Code: 14C44). The Codd Stream flows to the south, along the northwestern boundary of Glashabaun North before it flows to the west and discharges into the Ballyleakin Stream (EPA Code: 14B22). This stream discharges into the Figile River to the northwest of Codd 1 Bog.

Within the Figile_SC_020 river sub-catchment, the Application Site is mapped within the Figile_050 WFD river sub-basin. Within this WFD river sub-basin Figile River is mapped to flow to the south ~1.6km west of the Application Site. Several streams are mapped to originate at the western boundary of the Application Site. The Clonbulloge Stream (EPA Code: 14C53) to the west of Ballydermot North Bog and the Ballygarrett Stream (EPA Code: 14B30) to the west of Ballydermot South Bog. These streams merge just upstream of their confluence with the Figile River.

Within the Slate_SC_010 river sub-catchment, the Application Site is mapped within the Slate_050 and Slate_060 WFD river sub-basins. Within the Slate_050 WFD river sub-basin, the Killinagh Upper Stream (EPA Code: 14K17) is mapped to flow along the southeastern boundary of Lodge Bog before it discharges into the Slate River (EPA Code: 14S01). A second tributary of the Slate River is mapped to originate at the western boundary of Lodge Bog, referred to by the EPA as the Drumsru Stream (EPA Code: 14D19). The Slate River flows to the southwest, ~80m from the south of Lodge Bog. Within the Slate_060 WFD river sub-basin, the Slate River is located ~1km south of Barnaran Bog. There are no watercourses mapped in the immediate vicinity of the Application Site within this WFD river sub-basin.

Further downstream, the Slate River flows through Rathangan and conflues with the Figile River ~6.6km southwest of the Application Site. The Figile River continues to flow to the south before it discharges into the River Barrow to the north of Monasterevin.

Within the River Boyne surface water catchment, the Application Site is located within the Boyne_SC_010 river sub-catchment and the Boyne_010 WFD river sub-basin. The Clonkeen Stream (EPA Code: 07C36) is mapped to flow along the northern boundary of Ticknevin Bog before it flows to the northwest and discharges into the River Boyne (EPA Code: 07B04) ~2km north of the Application Site. The River Boyne continues to flow to the northwest before it veers to the northeast close to its confluence with the Yellow River (~7km northwest of the Application Site).

Table 4-5 summarises the location of Application Site with respect to WFD surface water catchments, sub-catchments and WFD river sub-basins.

The hydrological environment described above for the present day would have been the same as the July 1988 baseline hydrological environment. However, the nomenclature of the WFD classification (i.e. WFD catchments, sub-catchments and river sub-basins) has only existed since 2000. Meanwhile, the rivers have existed in their current form since post glacial times.

For the purposes of this rNIS, the names of rivers and streams correspond to those assigned in the EPA database. It is noted that some watercourses are identified by different names on local basemaps and

OSI Discovery Series mapping. For example, the Figle River is referred to as the Cushaling River along the section flowing between Glashabaun North and Glashabaun South bogs. Similarly, the Lullybeg Stream which flows around the perimeter of Lullybeg Bog, is also known as the Crabtree River, while the Lullybeg Stream within Blackriver Bog is referred to as the Black River. The EPA nomenclature is used throughout this chapter as it represents the most up to date and authoritative hydrological database available within Ireland.

Table 4-5 Catchments, sub-catchments and river-basins and receiving waterbodies

Bog	Catchment	Sub-Catchment	WFD River Sub-basin
Ballydermot North	River Barrow	Figle_SC_010	Figle_030
		Figle_SC_020	Figle_050
Ballydermot South	River Barrow	Figle_SC_010	Figle_020
			Figle_030
		Figle_SC_020	Figle_050
		Slate_SC_010	Slate_060
Blackriver	River Barrow	Figle_SC_010	Figle_020
			Figle_030
		Slate_SC_010	Slate_060
Barnaran	River Barrow	Figle_SC_010	Figle_020
		Slate_SC_010	Slate_050
			Slate_060
Lullybeg	River Barrow	Figle_SC_010	Figle_020
Lullymore	River Barrow	Figle_SC_010	Figle_020
Lodge	River Barrow	Figle_SC_010	Figle_020
		Slate_SC_010	Slate_050
Killina	River Barrow	Figle_SC_010	Abbeylough_010
			Figle_020
		Slate_SC_010	Slate_050
Derrybrennan	River Barrow	Figle_SC_010	Abbeylough_010
			Figle_020
Glashabaun North	River Barrow	Figle_SC_010	Figle_020
			Figle_030

Bog	Catchment	Sub-Catchment	WFD River Sub-basin
Glashabaun South	River Barrow	Figile_SC_010	Abbeylough_010
			Figile_020
Ticknevin	River Boyne	Boyne_SC_010	Boyne_010
	River Barrow	Figile_SC_010	Figile_030
Codd 1	River Barrow	Figile_SC_010	Figile_020
			Figile_030
Codd 2	River Barrow	Figile_SC_010	Figile_030

4.1.3.1 Water Framework Directive Status

The EU Water Framework Directive (2000/60/EC), as amended by Directives 2008/105/EC, 2013/39/EU and 2014/101/EU (“WFD”), was established to ensure the protection of the water environment. The Directive was transposed in Ireland by the European Communities (Water Policy) Regulations 2003 (S.I. No. 722/2003).

Given the timelines for the establishment and its transposition into Irish law, there is no WFD Information for Surface Water Bodies for 1994. As such the 2010-2015 WFD Status Reports have been used to infer the baseline, and the subsequent WFD reporting periods are included to provide context.

Groundwater Body Status

Local GWB status and risk results are available from (www.catchments.ie) and are summarised in Table 4-6 below. This status is defined based on the quantitative status and chemical status of each GWB.

All GWBs underlying the Application Site achieved ‘Good’ status in all WFD cycles (2010-2015, 2013-2018, 2016-2021 and 2019-2024). These GWBs have been deemed to be “not at risk” of failing to meet their respective WFD objectives except for Trim GWB which is “at risk”. No significant pressures have been identified to be impacting upon the Cushina, Bagenalstown or Kildare GWBs. The Trim GWB is listed to be under significant pressure from agriculture, anthropogenic and domestic wastewater.

Table 4-6 WFD Groundwater Body Status

Groundwater body	Status 2010-2015	Status 2013-2018	Status 2016-2021	Status 2019-2024	3 rd Cycle Risk Status	WFD Pressures
Cushina	Good	Good	Good	Good	Not at risk	None
Bagenalstown Upper	Good	Good	Good	Good	Not at risk	None
Kildare	Good	Good	Good	Good	Not at risk	None
Trim	Good	Good	Good	Good	At risk	Agriculture, Anthropogenic and Domestic Waste water

Surface Water Body Status

A summary of the WFD status and risk result of Surface Water Bodies (SWBs) in the vicinity and downstream of the Application Site are shown in Table 4-7 below. Note that the first management cycle (Cycle 1) began in 2010, for the period 2010-2015, which established baseline status.

Within the Figile_SC_010 river sub-catchment, the status of the Abbeylough_010 SWB improved from “Poor” (2013-2018) to “Moderate” (2016-2021 and 2019-2024) while the status of the Figile_010 SWB was “Poor” in all WFD cycles. The Figile_020 and Figile_030 SWBs have remained at “Moderate” across all WFD cycles. These SWBs are ‘at risk’ of failing to achieve their respective WFD objectives. Peat drainage and extraction is identified as significant pressure on the Abbeylough_010, Figile_020 and Figile_030 SWBs. Hydromorphology, industry, urban wastewater and peat drainage and extraction are identified significant pressures on the Figile_010 SWB.

Within the Figile_SC_020 river sub-catchment, the status of Figile_040 SWB declined from “Moderate” (2013-2018 and 2016-2021) to “Poor” (2019-2024) status. The Figile_050 SWB declined from “Good” (2013-2018) to “Poor” (2016-2021 and 2019-2024) status whilst the status of the Figile_060 SWB was “Good” in all WFD cycles. The Figile_040 and the Figile_050 SWBs are ‘at risk’ of failing their WFD objectives while the Figile_060 SWB is ‘not at risk’. Peat drainage and extraction is identified significant pressure on Figile_040 SWB while agriculture and peat drainage and extraction are identified significant pressures on the Figile_050 SWB.

Within the Slate_SC_010 river sub-catchment, the Slate_050 to 070 SWBs achieved “Moderate” status in the 3 no. latest WFD cycles and are ‘at risk’ of failing to achieve their WFD objectives. Hydromorphology and peat drainage and extraction are identified as the significant pressures on the Slate_050 SWB, urban run-off is the identified significant pressure on the Slate_060 SWB and agriculture, hydromorphology, urban wastewater and peat drainage and extraction are the identified significant pressures on the Slate_070 SWB.

Within the Boyne_SC_010 river sub-catchment, the status of the Boyne_010 SWB declined from “Moderate” to “Poor” status in the latest cycle. The status of the Boyne_020 SWB declined from “Moderate” (2013-2018) to “Poor” (2016-2021) before it improved to “Moderate” (2019-2024). The status of the Boyne_030 SWB improved from “Moderate” (2013-2018) to “Good” (2016-2021 and 2019-2024). The Boyne_010 and Boyne_020 SWBs are ‘at risk’ of failing to achieve their WFD objectives while the Boyne_030 SWB is ‘not at risk’. Domestic wastewater, hydromorphology and peat drainage and extraction are identified significant pressures on the Boyne_010 SWB. Agriculture, hydromorphology and urban run-off are identified significant pressures on the Boyne_020 SWB.

Table 4-7 Summary WFD Information for Surface Water Bodies

River Waterbody	Status 2010-2015	Status 2013-2018	Status 2016-2021	Status 2019-2024	3 rd Cycle Risk Status	WFD Pressures
Figile_SC_010 river sub-catchment						
Abbeylough_010	Unassigned	Poor	Moderate	Moderate	At Risk	Peat Drainage and Extraction
Figile_010	Poor	Poor	Poor	Poor	At Risk	Hydromorphology, Industry, Urban Wastewater and Peat Drainage and Extraction
Figile_020	Moderate	Moderate	Moderate	Moderate	At Risk	Peat Drainage and Extraction

River Waterbody	Status 2010-2015	Status 2013-2018	Status 2016-2021	Status 2019-2024	3 rd Cycle Risk Status	WFD Pressures
Figile_030	Moderate	Moderate	Moderate	Moderate	At Risk	Peat Drainage and Extraction
Figile_SC_020 river sub-catchment						
Figile_040	Moderate	Moderate	Moderate	Poor	At Risk	Peat Drainage and Extraction
Figile_050	Good	Good	Poor	Poor	At Risk	Agriculture and Peat Drainage and Extraction
Figile_060	Good	Good	Good	Good	Not at Risk	None
Slate_SC_010 river sub-catchment						
Slate_050	Moderate	Moderate	Moderate	Moderate	At Risk	Hydromorphology and Peat Drainage and Extraction
Slate_060	Moderate	Moderate	Moderate	Moderate	At Risk	Urban run-off
Slate_070	Good	Moderate	Moderate	Moderate	At Risk	Agriculture, Hydromorphology, Urban Wastewater and Peat Drainage and Extraction
Boyne_SC_010 river sub-catchment						
Boyne_010	Moderate	Moderate	Moderate	Poor	At Risk	Domestic Wastewater, Hydromorphology and Peat Drainage and Extraction
Boyne_020	Moderate	Moderate	Poor	Moderate	At Risk	Agriculture, Hydromorphology and Urban Run-off
Boyne_030	Good	Moderate	Good	Good	Not at Risk	None

4.1.3.2 EPA Biological Q-Rating Monitoring

The Biological Q-Rating is a water quality rating system based on both the habitat and the invertebrate community assessment and is divided into status categories ranging from 0-1 (Poor) to 4-5 (Good/High). EPA Q-rating monitoring (i.e. biological monitoring data) of river waterbodies began in the early 1970s and continues to the present day. The result of this monitoring provides an indication of water quality trends in the streams and rivers downstream of the Application Site.

EPA Q-rating monitoring has been completed at several dates and at multiple locations on the Figile, Slate and Boyne rivers in the vicinity and downstream of the Application Site during the Peat Extraction Phase (July 1988 to June 2020). The Q-values over this period are summarised in Table 4-8.

Within the Figile_SC_010 river sub-catchment, the Figile River upstream of the Application Site at a bridge southwest of Killeaskin (Station ID: RS14F010010) achieved a Q-Rating of Q2-3 to Q3 (Poor Q-status) in 1989, 1993 and 2019. The Q-status of the Figile River at a bridge south of Ticknevin Bridge (Station ID: RS14F010050), also upstream of the Application Site, ranged between Q1 (Bad Q-Status) to Q3 (Poor Q-Status) during the Peat Extraction Phase. This data indicates that the water quality upstream of the Application Site was poor. In the vicinity of the Application site, the status of the Figile River at Cushaling Bridge (Station ID: RS14F010100) ranged between Q2 (Bad Q-status) and Q3-4 (Moderate Q-status). At Kilcumber Bridge (Station ID: RS14F010200) the status ranged between Q3 (Poor Q-status) and Q3-4 (Moderate Q-status).

Within the Figile_SC_020 river sub-catchment, the status of the Figile River at Clonbulloge (Station ID: RS14F010300) ranged from Q3-4 (Moderate Q-status) to Q4-5 (High Q-status). The status of the Figile River at Derrygarran Bridge (Station ID: RS14F010400) ranged from Q3 (Poor Q-status) to Q4 (Good Q-status) whilst at Ardra Bridge (Station ID: RS14F010500) the Q-rating ranged from Q3-4 (Moderate Q-status) to Q4 (Good Q-status).

Within the Slate_SC_010 river sub-catchment, the Q-rating of the Slate River upstream of the Application Site at Quigley's Bridge (Station ID: RS14S010020) ranged between Q2 (Bad Q-status) and Q3 (Poor Q-status), whilst at Ford Bridge (Station ID: RS14S010050) the Q-rating ranged from Q2-3 and Q3 (Poor Q-status). Downstream of the Application Site, the Q-rating of the Slate River at Agar Bridge (Station ID: RS14S010100) ranged between Q3 (Poor Q-status) and Q3-4 (Moderate Q-status). Further downstream, the Q-rating ranged from Q-Rating of Q3-4 (Moderate Q-status) to Q4 (Good Q-status) 100m upstream of Spencer Bridge (Station ID: RS14S010200). At River Bridge (Stations ID: RS14F010500) the Q-status ranged between Q3-4 (Moderate Q-status) and Q4 (Good Q-status).

Within the Boyne_SC_010 river sub-catchment, the Q-rating of the River Boyne upstream of the Application Site ranged between Q3 (Poor Q-Status) and Q4 (Good Q-status). Downstream of the Application Site (Station ID: RS07B040200) the status of the River Boyne ranged between Q2-3 (Poor Q-status) and Q4 (Good Q-Status). At Kinnafad Bridge (Station ID: RS07B040300) the Q-status ranged between Q1 (Bad Q-status) and Q3 (Poor Q-status). During the Peat Extraction Phase there was no discharge to the River Boyne or any of its tributaries.

Table 4-8 Summary of Q-Ratings During the Peat Extraction Phase (July 1988 – June 2020)

River	Station ID	Location	EPA Q-Rating (Years)	Q-Value Status Range	
Figure_SC_010 river sub-catchment					
Figure River	RS14F010010	Figure - Bridge SW of Killeaskin	2.5 – 3 (1989 – 2019)	Poor	
Figure River	RS14F010050	Bridge S of Ticknevin Bridge	1 – 3 (1989 – 2020)	Bad	Poor
Figure River	RS14F010100	Cushaling Bridge	2 – 3.5 (1989 – 2020)	Bad	Moderate
Figure River	RS14F010200	Kilcumber Bridge	3 – 3.5 (1989 – 2020)	Poor	Moderate
Figure_SC_020 river sub-catchment					
Figure River	RS14F010300	Figure - Bridge in Clonbulloge	3.5 – 4.5 (1989 – 2020)	Moderate	High
Figure River	RS14F010400	Derrygarran Bridge	3 – 4 (1989 – 2020)	Poor	Good
Figure River	RS14F010500	Ardra Bridge	3.5 – 4 (1989 – 2020)	Moderate	Good
Slate_SC_010 river sub-catchment					
Slate River	RS14S010020	Quigley's Bridge	2 – 3 (1989 – 2020)	Bad	Poor

River	Station ID	Location	EPA Q-Rating (Years)	Q-Value Status Range	
Slate River	RS14S010050	Ford Bridge	2.5 – 3 (1989 – 2020)	Poor	
Slate River	RS14S010100	Agar Bridge	3 – 3.5 (1989 – 2020)	Poor	Moderate
Slate River	RS14S010150	E Bridge Rathangan (Opp Church)	3.5 – 4 (1997 – 2020)	Moderate	Good
Slate River	RS14S010200	Slate - 100 m u/s Bridge near Spencer Br	3.5 – 4 (1989 – 1993)	Moderate	Good
Slate River	RS14S010210	Slate - 100 m d/s Bridge near Spencer Br	3 – 3.5 (1989 – 2020)	Poor	Moderate
Slate River	RS14S010300	River Bridge	3.5 – 4 (1989 – 2020)	Moderate	Good
Boyne_SC_010 river sub-catchment					
Boyne River	RS07B040100	River Bridge	3 – 4 (1990 – 2003)	Poor	Good
Boyne River	RS07B040200	Boyne Bridge	2.5 – 4 (1990 – 2020)	Poor	Good
Boyne River	RS07B040300	Kinnafad Bridge	1.5 – 3.5 (1994 – 2020)	Bad	Moderate

The most recent Q-rating data for EPA monitoring points on the Figile, Slate and Boyne rivers are shown in Table 4-9 below.

Within the Figile_SC_010 river sub-catchment, the Figile River achieved a Q2-3 rating (Poor Q-status) upstream of the Application Site at Ticknevin Bridge (Station Code: RS14F010050) and a Q3-4 rating (Moderate Q-status) downstream at Cushaling Bridge (Station Code: RS14F010100) and at Kilcumber Bridge (Station ID: RS14F010200) of the Application Site in 2023.

Within the Figile_SC_020 river sub-catchment, the Figile River achieved a Q3 rating (Poor Q-status) downstream of the Application Site in Clonbulloge (Station Code: RS14F010300) in 2024 and at also at Derrygarran Bridge (Station ID: RS14F010400) in 2023.

Within the Slate_SC_010 river sub-catchment, the Slate River achieved a Q3 rating (Poor Q-status) upstream of the Application Site at Quigley's Bridge (Station Code: RS14S010020) and at Ford Bridge (Station ID: RS14S010050). Downstream of the Application Site the Slate River achieved a Q3-4 rating (Moderate Q-status) at Agar Bridge (Station Code: RS14S010100), at a bridge opposite the church in Rathangan (Station ID: RS14S010150), 100m downstream of Spencer Bridge (Station ID: RS14S010210) and upstream of its confluence with the Figile River (Station ID: RS14S010300) in 2023.

Within the Boyne_SC_010 river sub-catchment, the River Boyne achieved a Q3-4 rating (Moderate Q-status) downstream of the Application Site at Boyne Bridge (Station Code: RS07B040200) and at Kinnafad Bridge (Station ID: RS07B040300) in 2024. During the Current Phase there was no discharge to the River Boyne or any of its tributaries.

Table 4-9 Most Recent (2021-2024) Q-ratings downstream of the Application Site

River	Station ID	Location	EPA Q-Rating (Year)	Q-Value Status
Figile_SC_010 river sub-catchment				
Figile River	RS14F010050	Bridge S of Ticknevin Bridge	2023	Q2-3 (Poor)
Figile River	RS14F010100	Cushaling Bridge	2023	Q3-4 (Moderate)
Figile River	RS14F010200	Kilcumber Bridge	2023	Q3-4 (Moderate)
Figile_SC_020 river sub-catchment				

River	Station ID	Location	EPA Q-Rating (Year)	Q-Value Status
Figile River	RS14F010300	Figile - Bridge in Clonbulloge	2024	Q3 (Poor)
Figile River	RS14F010400	Derrygarran Bridge	2023	Q3 (Poor)
Slate_SC_010 river sub-catchment				
Slate River	RS14S010020	Quigley's Bridge	2023	Q3 (Poor)
Slate River	RS14S010050	Ford Bridge	2023	Q3 (Poor)
Slate River	RS14S010100	Agar Bridge	2023	Q3-4 (Moderate)
Slate River	RS14S010150	E Bridge Rathangan (Opp Church)	2023	Q3-4 (Moderate)
Slate River	RS14S010210	Slate - 100 m d/s Bridge near Spencer Br	2023	Q3-4 (Moderate)
Slate River	RS14S010300	River Bridge	2023	Q3-4 (Moderate)
Boyne_SC_010 river sub-catchment				
Boyne River	RS07B040200	Boyne Bridge	2024	Q3-4 (Moderate)
Boyne River	RS07B040300	Kinnafad Bridge	2024	Q3-4 (Moderate)

4.2 Ecological Survey Results

4.2.1 Habitat Surveys

Between 2021 and 2025, MKO ecologists visited the site to ground-truth the results of the BnM habitat surveys and mapping and to undertake detailed habitat and botanical surveys. The habitat descriptions in this section are based on the walkover surveys and detailed vegetation surveys undertaken by MKO in 2024, 2025 and 2026. All habitats described below have been classified in accordance with Fossitt (2000).

The Application Site comprises 14 no. large cutover raised bogs classified as **Cutover Bog (PB4)**. Large areas of the cutover bog have been in commercial peat production by BnM until relatively recently (up to 2020) and are characterised by bare peat. Where areas of the cutover bog have been out of industrial peat extraction for a significant period of time, i.e. since the early 90s, these areas have since largely revegetated, primarily by dry heath type vegetation dominated by ling heather (*Calluna vulgaris*), birch (*Betula* spp.) dominated scrub and bog woodland, pioneer poor fen communities characterised by common cottongrass (*Eriophorum angustifolium*) and small areas of grassland which occur mostly along the existing railway tracks traversing the Application Site. The habitats are described in greater details in the sections below.

In addition to the habitats of the cutover bog, there are also a number of small areas of remnant uncut raised bog at various locations throughout the Application Site, predominantly around the margins of the Application Site.

Waterbodies within the Application Site include a network of drainage ditches, small streams/watercourses classified as lowland depositing rivers, small areas of standing open water and artificial silt ponds. The watercourses including streams and drainage ditches provide hydrological connectivity with downstream European sites (River Barrow and River Nore SAC) and are described in more detail below.

4.2.1.1.1 Raised bog (PB1)

There are a number of areas of remnant uncut raised bog habitat within the Application Site. These are classified as **Raised bog (PB1)**. Large sections of this habitat are located within Glashabaun South, Blackriver and Ballydermot South bogs, with smaller remnant areas also present elsewhere in a number of locations along the margins of the Application Site. Large areas are also present beyond the Application Site boundary in Ticknevin and Lodge Bogs.

These habitats are generally bordered by a tall (2-5m), vertical facebanks with man-made drains around the margins (Plate 4-1) and are degraded in nature due to the presence of drainage ditches throughout as well as ongoing turbary in several sections. These drains are generally inserted in parallel channels which result in firm, dry ground conditions in several areas, such as in Glashabaun South Bog and in the marginal areas of the majority of the remnant raised bogs throughout the Application Site. The vegetation communities in these areas are typically characterised by a high cover of ling heather (*Calluna vulgaris*) with cross-leaved heath (*Erica tetralix*), deergrass (*Trichophorum germanicum*), common cottongrass (*Eriophorum angustifolium*) and hare's-tail cottongrass (*Eriophorum vaginatum*) frequently recorded (Plate 4-2). Species occurring in smaller amounts also include round-leaved sundew (*Drosera rotundifolia*), bog asphodel (*Natthecium ossifragum*), bog-rosemary (*Andromeda polifolia*) and white-beak sedge (*Rhynchospora alba*). Cover of *Sphagnum* bog mosses is generally low in these areas, comprising the species *Sphagnum capillifolium*, *S. rubellum*, *S. tenellum* and *S. papillosum* most frequently. Where ground conditions are slightly wetter, including within the man-made drains, the species *S. cuspidatum* is also present. Other bryophytes and lichens recorded include *Hypnum jutlandicum*, *Cladonia portentosa*, *Cladonia uncialis*, *Odontoschisma sphagni* and, where areas of bare eroding peat are present, *Campylopus introflexus*. These dry, degraded sections of raised bog which generally lack any pools or microtopography correlate most closely to the *Marginal* ecotope per

Fernandez *et al.* (2014), grading towards *Facebank* ecotope at the very margins, where erosion channels were also occasionally present.

The wettest areas of remnant raised bog within the Application Site support a greater abundance of bog asphodel (*Narthecium ossifragum*) and white beak sedge (*Rhychospora alba*) in lawns, with a greater abundance, cover and diversity of *Sphagnum* species, including *S. subnitens*, *S. medium* and *S. pulchrum*. However, while in general these wetter areas were softer underfoot, they were not quaking in nature and were not characterised by standing water/pools or associated with lawns of *Sphagnum*. These more central sections of uncut raised bog, such as in the area in Ballydermot South Bog, best align with the *Sub-marginal* ecotope per Fernandez *et al.* (2014), with drainage ditches largely present throughout.

The potential for areas of remnant raised bog to conform to the Annex I habitats Active raised bog [7110] (ARB) and Degraded raised bog still capable of natural regeneration [7120] (DRB) was considered. According to the latest Article 17 report (NPWS, 2025), “ARB is characterised by the presence of an acrotelm, which is defined as the living, actively growing upper layer of a raised bog, the surface of which is composed mainly of living bog bosses (*Sphagnum* spp.)”. In addition, as outlined in Smith and Crowley (2020), previous raised bog research in Ireland indicated that ARB, at least in the midlands, generally supports cover of *Sphagnum* greater than 40% (Fernandez Valverde *et al.* 2005, 2012).

Considering the vegetation communities outlined above, in wetter areas where a high *Sphagnum* cover and a high water table are present, areas of remnant raised bog within the Application Site are considered to have potential to correspond to Annex I ARB [7110], particularly towards the central sections of the large remnant areas, such as in Clonroosk Bog in Ballydermot South.

However, the majority of the remnant areas within the Application Site are dry raised bog of lower ecological value. Some areas, such as in Blackriver and Glashabaun South Bogs, are dry and degraded in nature with altered vegetation and *Sphagnum* compositions which best correspond to the Annex I habitat DRB [7120].



Plate 4-1 A high vertical facebank and drainage ditch at the margins of the remnant Raised bog (PB1) in the north of Blackriver Bog



Plate 4-2 The area of Raised bog (PB1) in the north of Glashabaun South Bog, which is dry and degraded in nature.

4.2.1.1.2 Cutover Bog (PB4)

The vast majority of the Application Site, with the exception of small remnant sections of raised bog, comprises cutover raised bog or cutaway peat classified as **Cutover bog (PB4)**. Where peat cutting has ceased near the end of the Peat Extraction Phase on large areas of the site, e.g. large parts of Ballydermot South Bog, Ticknevin Bog, Barnaran Bog and Codd 2 Bog, these areas are dominated by bare peat with little growth of vegetation (Plate 4-3). Evidence of recent turbary activity was also observed in some areas (Plate 4-4)

Where peat extraction has ceased relatively recently and the cutover bog is in the early stages of recolonisation, areas consist of mosaics of bare peat and pioneer open cutaway communities, including pioneer ling heather (*Calluna vulgaris*) dominated secondary **Dry heath (HH1)** vegetation (Plate 4-5), pioneer **Poor fen (PF2)**, **Scrub (WS1)** and dry grassland habitats.

Where peat production/extraction has ceased for some time, e.g. much of Lullybeg Bog and Glashabaun South Bog, mosaics of well-established secondary dry heath, **Poor fen (PF2)** type communities as well as downy birch (*Betula pubescens*) and grey willow (*Salix cinerea*) dominated **Scrub (WS1)** and dry **Bog woodland (WN7)** are present.

A small number of areas of cutover bog within the site, particularly those in low lying areas, are much wetter in nature with some standing water. These often occur in association with areas **Poor fen and flush (PF2)** communities.

The following sub-sections provide a description of the secondary habitats that have begun to form on the cutover bog following cessation of peat extraction/milling.



Plate 4-3 Cutover bog (PB4) dominated by bare peat in Ballydermot North.



Plate 4-4 Freshly cut peat sods left out for drying in Blackriver Bog



Plate 4-5 Cutover bog dominated by bare peat, in the early stages of recolonisation by ling heather (*Calluna vulgaris*) secondary dry heath community in Ballydermot South Bog.

4.2.1.1.3 Cutover Bog Supporting Secondary Dry heath (HH1) Type Communities

Secondary **Dry heath (HH1)** type communities within the Application Site are largely dominated by ling heather (*Calluna vulgaris*) (Plate 4-6), common cottongrass (*Eriophorum angustifolium*) and purple moor grass (*Molinia caerulea*) on dry, drained peat with a low cover of *Sphagnum* species. The invasive bryophyte heath star moss (*Campylopus introflexus*) was also recorded regularly throughout the Application Site within this habitat.

This habitat regularly occurs alongside and forms mosaics with other habitats including scrub, with immature self-seeded birches (*Betula* spp.) and willows (*Salix* spp.) frequently growing throughout these communities (Plate 4-7). Other encroaching species recorded include sitka spruce (*Picea sitchensis*), rowan (*Sorbus aucuparia*), scot's pine (*Picea abies*) and European gorse (*Ulex europaeus*). This habitat also frequently grades into bare peat, with pockets of bare peat also common within the habitat blocks as secondary heath revegetates more recently cutover areas.

Where ground conditions are wetter, species including cross-leaved heath (*Erica tetralix*), white beak sedge (*Rhynchospora alba*), bog asphodel (*Narthecium ossifragum*), tormentil (*Potentilla erecta*) and *Sphagnum* bog mosses are present in greater abundances (Plate 4-8).

Revegetating cutover bog habitats within the Site do not conform to Annex I or non-Annex I heath habitats as defined by the Irish Wildlife Manual (Perrin *et.al.* 2014). As stated by Smith and Crowley (2020):

“Cutover bog habitats should only rarely be considered examples of dry siliceous heath (HH1) or wet heath (HH3). These habitats are defined by peat depths of less than 0.5 m (Fossitt, 2000), which seldom occur on cutover bog. Only where a habitat is underlain by shallow peat and good indicators of heath are present, such as Carex binervis, Galium saxatile and Juncus squarrosus, should heath habitats be considered for cutover bog.”

The heath communities which have established on the cutover bog within the Site occur on peat with a depth of >0.5m and none of the good heath indicator species were recorded within these habitats during the field surveys undertaken. Therefore, the secondary heath type communities growing on cutover bog within the Site do not conform to Annex I heath habitats. They are secondary, cutover raised bog habitats that are located on deep peat and level ground. They do not conform to Annex I wet heath habitat as defined by the Irish Wildlife Manual (Perrin *et.al.* 2014). Neither do they conform to Annex I raised bog habitats or any other Annex I habitat.



Plate 4-6 Ling heather (*Calluna vulgaris*) dominated secondary dry heath (HH1) community



Plate 4-7 Secondary dry heath (HH1) community with encroaching downy birch (*Betula pubescens*) scrub (WS1)



Plate 4-8 Secondary dry heath (HH1) community with higher abundance of white-beak sedge (*Rhynchospora alba*) and *Sphagnum* bog mosses

4.2.1.1.4 Scrub (WS1)

Throughout the Application Site, **Scrub (WS1)** is common where it is developing on drier areas of cutover bog.

This habitat is generally dominated by downy birch (*Betula pubescens*), silver birch (*Betula pendula*) and grey willow (*Salix cinerea*) (Plate 4-9), with smaller amounts of eared willow (*Salix aurita*) and goat willow (*Salix caprea*) also common. The understorey within this habitat is generally dry in nature and species-poor, comprising various mixes of ling heather (*Calluna vulgaris*), brambles (*Rubus fruticosus*) and purple moor grass (*Molinia caerulea*). Other species less commonly recorded within scrub habitats include gorse (*Ulex europaeus*), raspberry (*Rubus idaeus*), tormentil (*Potentilla erecta*), lodgepole pine (*Pinus contorta*), sessile oak (*Quercus petraea*), soft rush (*Juncus effusus*), sweet vernal grass (*Anthoxanthum odoratum*), marsh arrowgrass (*Triglochin palustris*), marsh thistle (*Cirsium palustre*), rowan (*Sorbus aucuparia*), colt's foot (*Tussilago farfara*), marsh horsetail (*Equisetum palustre*), wild carrot (*Daucus carota*), fireweed (*Chamaenerion angustifolium*), devil's-bit scabious (*Succisa pratensis*), wild angelica (*Angelica sylvestris*), tormentil (*Potentilla erecta*) and common knapweed (*Centaurea nigra*).

Where grasses or heath species are present in higher abundances, scrub commonly forms mosaics with habitats including dry meadows and grassy verges, heath-type vegetation and pioneer poor fen communities. Where scrub species were found growing greater than 4 metres in height, it was classified as bog woodland (WN7 as per Fossitt, 2000). These habitats are described in detail in the relevant sections below.



Plate 4-9 Area of downy birch (*Betula pubescens*)-dominated Scrub (WS1) in Glashabaun North.

4.2.1.1.5 Bog woodland (WN7)

Birch-dominated **Bog woodland (WN7)** is common throughout the Application Site and is present in large areas particularly within Glashabaun North, Glashabaun South, Ballydermot North and Barnaran Bogs. These woodlands are commonly found growing in blocks separated by large drainage ditches (FW4) and rides usually dominated by grasses or bracken (Plate 4-10). This habitat also commonly occurs as narrow linear strips in association with drainage ditches (Plate 4-11). Where these linear habitats are >4m in width, they are classified as linear bog woodland (as per Fossitt, 2000).

Bog woodland within the Application Site is largely dominated by downy birch (*Betula pubescens*) and silver birch (*Betula pendula*) (Plate 4-12) with and grey willow (*Salix cinerea*) also abundant in some areas. Other occasional tree species include eared willow (*Salix aurita*), hawthorn (*Crataegus monogyna*), rowan (*Sorbus aucuparia*), scot's pine (*Pinus sylvestris*), lodgepole pine (*Pinus contorta*) and oak saplings (*Quercus* spp.). The shrub layer commonly consists of brambles (*Rubus fruticosus*), ivy (*Hedera helix*) and bracken (*Pteridium aquilinum*) with honeysuckle (*Lonicera periclymenum*), wild raspberry (*Rubus idaeus*), golden scaly male fern (*Dryopteris affinis*), broad buckler fern (*Dryopteris dilatata*), ling heather (*Calluna vulgaris*) and broom (*Cytisus scoparius*) also frequently recorded. The ground flora is often of low diversity, however where the canopy is less dense, grasses including purple moor grass (*Molinia caerulea*), sweet vernal grass (*Anthoxanthum odoratum*), common bent grass (*Agrostis capillaris*), false oat grass (*Arrhenatherum elatius*), are found growing abundantly, and rarely floating sweet grass (*Glyceria fluitans*) where ground conditions are wetter. Other species recorded within bog woodland on site include herb Robert (*Geranium robertianum*), common dog violet (*Viola riviniana*), marsh horsetail (*Equisetum palustre*), wild strawberry (*Fragaria vesca*), marsh willowherb (*Epilobium palustre*), marsh bedstraw (*Galium palustre*), and the rushes hard rush (*Juncus inflexus*), soft rush (*Juncus effusus*) and jointed rush (*Juncus articulatus*).

The bryophytes recorded within the bog woodlands on site include common tamarisk moss (*Thuidium tamariscinum*), common feather-moss (*Kindbergia praelonga*), common striated feather moss (*Eurhynchium striatum*), wood bristle moss (*Orthotrichum affine*), short-beaked wood moss

(*Loeskeobryum brevirostre*), juniper haircap moss (*Polytrichum juniperinum*), pointed spear moss (*Calliergonella cuspidata*), heath star moss (*Lophocolea bidentata*) and dilated scalewort (*Frullania dilatata*).

The bog woodlands on site are growing on cutover bog which is predominantly dry in nature with little to no *Sphagnum* cover. As such, no areas of this habitat growing upon cutover bog were found to conform to Annex I Bog Woodland [91D0].



Plate 4-10 Area of Dry meadows and grassy verges (GS2) and Dense bracken (HD1) separating two blocks of Bog woodland (WN7) in Barnaran Bog



Plate 4-11 Linear areas of Bog woodland (WN7) located in Ballydermot South Bog



Plate 4-12 Downy birch (*Betula pubescens*) dominated Bog woodland (WN7) in Codd 2

4.2.1.1.6 **Poor fen and flush (PF2)**

Poor fen and flush (PF2) occurs within the Application Site predominantly as pioneer poor fen vegetation following the cessation of peat harvesting, with some areas of established poor fen and flush where the habitats have developed over longer timeframes. The habitat was widespread but highly variable, mostly occurring as a mosaic along with bare peat and often with encroaching scrub.

Areas of pioneer fen are most commonly dominated by common cottongrass (*Eriophorum angustifolium*) with other sedges and rushes including soft rush (*Juncus effusus*), sharp-flowered rush (*Juncus acutiflorus*), jointed rush (*Juncus articulatus*), toad rush (*Juncus bufonius*), common yellow sedge (*Carex viridula*) and hare's tail cottongrass (*Eriophorum vaginatum*) also frequent (Plate 4-13). Other commonly recorded species within these pioneer habitats include water mint (*Mentha aquatica*), marsh willowherb (*Epilobium palustre*), great willowherb (*Epilobium hirsutum*), bulrush (*Typha latifolia*), reed canary grass (*Phalaris arundinacea*), marsh arrowgrass (*Triglochin palustre*), with encroaching ling heather (*Calluna vulgaris*), cross-leaved heath (*Erica tetralix*) and downy birch (*Betula pubescens*) where ground conditions are wetter.

Wetter areas of poor fen with standing water are associated with more established poor fen communities (Plate 4-14). These habitats have a greater diversity of species, particularly within the broadleaved component, and were found to include marsh pennywort (*Hydrocotyle vulgaris*), lesser spearwort (*Ranunculus flammula*), round-leaved sundew (*Drosera rotundifolia*), bog pondweed (*Potamogeton polygonifolia*), lesser bladderwort (*Utricularia minor*), meadowsweet (*Filipendula ulmaria*), common valerian (*Valeriana officinalis*), tormentil (*Potentilla erecta*), bog rosemary (*Andromeda polifolia*), water plantain (*Alisma plantago-aquatica*), gypsywort (*Lycopus europaeus*) and white beak sedge (*Rhynchospora alba*). Bryophytes identified within these areas of poor fen also include marsh Bryum (*Bryum pseudotriquetrum*), pointed spear moss (*Calliergonella cuspidata*), star-headed liverwort (*Marchantia polymorpha*) and greasewort (*Aneura pinguis*).

Established poor fen is scattered across the Application Site.



Plate 4-13 Area of pioneer Poor fen (PF2) dominated by common cottongrass (*Eriophorum angustifolium*) in Lodge Bog, in a mosaic with areas of bare peat



Plate 4-14 Area of more developed Poor fen (PF2) with standing water in Blackriver

4.2.1.1.7 **Reed and large sedge swamps (FS1)**

Where cutover bog has become waterlogged and dominated by reeds, large grasses or sedges, it is classified as **Reed and large sedge swamps (FS1)**. This habitat is sparse across the Application Site, generally occurring only in small pockets. A larger area of reed swamp is located in the west of Glashabaun South (Plate 4-15).

This area of habitat comprises a high proportion of standing water, with vegetation dominated by common cottongrass (*Eriophorum angustifolium*), marsh arrowgrass (*Triglochin palustris*) and bulrush (*Typha latifolia*). Other species commonly recorded in reed swamps within the site include soft rush (*Juncus effusus*), jointed rush (*Juncus articulatus*), water horsetail (*Equisetum fluviatile*), watercress (*Nasturtium officinale*), slender rush (*Juncus tenuis*), marsh willowherb (*Epilobium palustre*) and redshank (*Pericaria maculosa*), as well as grey willow (*Salix cinerea*) and downy birch (*Betula pubescens*) saplings.



Plate 4-15 Area of Reed and large sedge swamp (FS1) in Glashabaun South

4.2.1.1.8 **Open water**

Several areas of open water are present in the wettest and lower lying areas of the Application Site, often associated with poor fen and flush and reed and large sedge swamp communities, as outlined in the preceding sections. The areas of open water in these habitats were generally small in size at the time of survey but are subject to seasonal fluxes in water levels (Plate 4-16). Open water also occurs commonly within mosaics of bare peat where ground conditions naturally flood, as well as where deep excavations of peat have created permanent pools of water (Plate 4-17).

A larger area of open water is present in Ballydermot North (Plate 4-18) in which soft rush (*Juncus effusus*) and common reed (*Phragmites australis*) are growing at the edges. This area is surrounded by predominantly bare peat.



Plate 4-16 Areas of open water associated with pioneer Poor fen (PF2) communities in Derrybrennan Bog



Plate 4-17 Area of open water where deep excavations have resulted in permanent pools of water in Glashabaun South bog



Plate 4-18 Area of open water in Ballydermot North Bog, with little revegetation

4.2.1.1.9 **Other artificial lakes and ponds (FL8)**

Silt ponds are present at various locations throughout the Application Site and have been classified as **Other artificial lakes and ponds (FL8)** (Plate 4-19). As bogs have been developed and the draining of areas of bog by gravity was no longer feasible, pumping stations were installed at several of these silt ponds in order to drain part or all of the catchment.



Plate 4-19 Pumping station and silt pond located in Ballydermot South Bog

4.2.1.1.10 Drainage ditches (FW4)

The Application Site is extensively drained with **Drainage ditches (FW4)** that run throughout the site. These channels range from approximately 0.5m in width up to 8m in width, with water flow generally very slow to stagnant and a silty peat substrate. Where the drains were more recently dug for peat extraction, the banks are generally devoid of vegetation, vertical-sided and over 1m deep (Plate 4-20), however over time many of the drains throughout the site have eroded, now with much shallower, vegetated banks (Plate 4-21). Common components of vegetated drains include bulrush (*Typha latifolia*), water mint (*Mentha aquatica*), marsh horsetail (*Equisetum palustre*), yellow flag iris (*Iris pseudacorus*), soft rush (*Juncus effusus*), toad rush (*Juncus bufonius*), lesser spearwort (*Ranunculus flammula*) and marsh pennywort (*Hydrocotyle vulgaris*), as well as floating vegetation including pondweeds (*Potamogeton* spp.) and common duckweed (*Lemna minor*). Small saplings of scrubby species such as grey willow (*Salix cinerea*), downy birch (*Betula pubescens*) and ling heather (*Calluna vulgaris*) were also regularly recorded as riparian vegetation.

The drains within large areas of Lodge Bog and Lullymore Bog have undergone drain blocking as part of peatland enhancement and rehabilitation measures.



Plate 4-20 Narrow, vertical-sided Drainage ditch (FW4) on bare peat in Blackriver



Plate 4-21 Wet, vegetated Drainage ditch (FW4) with eroded banks in Ballydermot South Bog

4.2.1.1.11 Lowland depositing rivers (FW2)

The Application Site is drained by a number of EPA mapped watercourses within and surrounding the site, as outlined in Section 6.3.1.3.1 above. These are classified as **Lowland depositing rivers (FW2)** and include a number of tributaries of the Figile River (Plate 4-22) and the Slate River which both discharge downstream into the River Barrow. The River Barrow is designated as the River Barrow and River Nore SAC approximately 9.7km south of the Application Site (approximately 20.8km downstream distance). A small tributary of the River Boyne is also present in the northernmost area of the Application Site, to the north of Ticknevin Bog.

These mapped watercourses have been modified and straightened in several areas in association with historical turbary activities within the Application Site. Detailed surveys of watercourses within and adjacent to the Application Site were undertaken by Triturus Environmental Ltd. as part of the baseline aquatic surveys, and are fully described in the Aquatic Baseline Report, which is included as Appendix 3 of this rNIS.



Plate 4-22 Tributary of the River Figile, a Lowland depositing river (FW2), located in Blackriver Bog

4.2.1.1.12 Grassland Habitats

Dry calcareous and neutral grassland (GS1)

Small areas of **Dry calcareous and neutral grassland (GS1)** were recorded growing along the decommissioned railway lines throughout the Application Site (Plate 4-23). These areas were frequently recorded as early recolonising habitats upon the calcareous substrate of the decommissioned railway lines (Plate 4-24). The lines have been removed in recent years, however the limestone gravel that formerly underlay the railway lines remains along many of its stretches, creating calcareous ground conditions. A diversity of plant species were identified growing along these areas, predominantly comprising calcareous species along with a mixture of species characteristic of the surrounding scrub and peatland. These include yellow-wort (*Blackstonia perfoliata*), wild carrot (*Daucus carota*), glaucous

sedge (*Carex flacca*), yellow mignonette (*Reseda lutea*), fairy flax (*Linum catharticum*), salad burnet (*Sanguisorba minor*), colt's foot (*Tussilago farfara*), ribwort plantain (*Plantago lanceolata*), black medick (*Medicago lupulina*), fern-grass (*Catapodium rigidum*), yarrow (*Achillea millefolium*), fireweed (*Chamaenerion angustifolium*), common knapweed (*Centaurea nigra*), silverweed (*Potentilla anserina*), common ragwort (*Jacobaea vulgaris*), yellow rattle (*Rhinanthus minor*), red fescue (*Festuca rubra*), glaucous sedge (*Carex flacca*), false oat grass (*Arrhenatherum elatius*), tormentil (*Potentilla erecta*), dandelion (*Taraxacum officinale*), wild strawberry (*Fragaria vesca*), purple moor grass (*Molinia caerulea*), yarrow (*Achillea millefolium*), bird's foot trefoil (*Lotus corniculatus*), sweet vernal grass (*Anthoxanthum odoratum*), quaking grass (*Briza media*), cow parsley (*Anthriscus sylvestris*), field horsetail (*Equisetum arvense*), cock's-foot grass (*Dactylis glomerata*), self-heal (*Prunella vulgaris*) and common centaury (*Centaureum erythraea*). The Red-listed species basil thyme (*Clinopodium acinos*) was also frequently recorded along the decommissioned railway lines. Few bryophytes such as slender ditrichum (*Flexitrichum gracile*), common pocketmoss (*Fissidens taxifolius*) and spiral extinguisher-moss (*Encalypta streptocarpa*) were also identified along these former railways. Small pockets of calcareous grassland were also infrequently recorded in scattered areas throughout the Application Site outside of these linear railways (Plate 4-25).



Plate 4-23 Area of Dry calcareous and neutral grassland (GS1) growing along a former railway line in Glashabaun North Bog



Plate 4-24 Calcareous species recolonising along a former railway track adjacent to Edenderry Power Station



Plate 4-25 Area of developed Dry calcareous and neutral grassland (GS1) in Ballydermot North Bog

Dry meadows and grassy verges (GS2)

Small areas of dry grassland classified as **Dry meadows and grassy verges (GS2)** were encountered on the driest areas of cutover bog, frequently along the margins of existing machine tracks through cutover bog (Plate 4-26). The dominant grasses within this habitat across the Application Site were Yorkshire fog (*Holcus lanatus*), sweet vernal grass (*Anthoxanthum odoratum*), rough meadow grass (*Poa trivialis*), purple moor grass (*Molinia caerulea*), creeping bent (*Agrostis stolonifera*), false oat grass (*Arrhenatherum elatius*), and quaking grass (*Briza media*). Other species commonly recorded within dry meadows included field horsetail (*Equisetum arvense*), silverweed (*Potentilla anserina*), meadowsweet (*Filipendula ulmaria*), cat's-ear (*Hypochaeris radicata*), knapweed (*Centaurea nigra*), meadow vetchling (*Lathyrus pratensis*), creeping cinquefoil (*Potentilla reptans*), coltsfoot (*Tussilago farfara*), tormentil (*Potentilla erecta*), great willowherb (*Epilobium hirsutum*), creeping thistle (*Cirsium arvense*), dandelion (*Taraxacum officinale*), creeping buttercup (*Ranunculus repens*), common ragwort (*Jacobaea vulgaris*), common hogweed (*Heracleum sphondylium*), bittersweet nightshade (*Solanum dulcamara*), devil's bit scabious (*Succisa pratensis*), spear thistle (*Cirsium vulgare*), bird's foot trefoil (*Lotus corniculatus*), common chickweed (*Stellaria media*), common spotted orchid (*Dactylorhiza fuchsii*), fragrant orchid (*Gymnadenia conopsea*), meadow thistle (*Cirsium dissectum*), ribwort plantain (*Plantago lanceolata*), fairy flax (*Linum catharticum*), carnation sedge (*Carex panicea*), hedge bindweed (*Calystegia sepium*), tufted vetch (*Vicia cracca*), fireweed (*Epilobium angustifolium*), common centaury (*Centaureum erythraea*), groundsel (*Senecio vulgaris*), field scabious (*Knautia arvensis*), lady's bedstraw (*Galium verum*) and hemp agrimony (*Eupatorium cannabinum*) (Plate 4-27). This habitat was regularly recorded as a mosaic with Scrub (WS1), with brambles (*Rubus fruticosus*), nettles (*Urtica dioica*), downy birch (*Betula pubescens*), grey willow (*Salix cinerea*), and ling heather (*Calluna vulgaris*) encroaching.



Plate 4-26 Grassy verges (GS2) present at the edges of existing machine tracks in Blackriver Bog.



Plate 4-27 Dry meadows and grassy verges (GS2) growing in association with Dense bracken (HD1) near the margins of Codd 2/ Bog

Wet grassland (GS4)

Areas of cutover bog that have begun to revegetate with **Wet grassland (GS4)** were recorded within small areas of the Application Site. These habitats are most commonly dominated by purple moor grass (*Molinia caerulea*) (Plate 4-28). Other species recorded within revegetating wet grasslands commonly include jointed rush (*Juncus articulatus*), water mint (*Mentha aquatica*), sweet vernal grass (*Anthoxanthum odoratum*), Yorkshire fog (*Holcus lanatus*), marsh thistle (*Cirsium palustre*), cat's-ear (*Hypochaeris radicata*), yellow sedge (*Carex viridula*), glaucous sedge (*Carex flacca*), wild carrot (*Daucus carota*), colt's foot (*Tussilago farfara*) and more rarely wild angelica (*Angelica sylvestris*), common valerian (*Valeriana officinalis*), spear thistle (*Cirsium vulgare*), redshank (*Persicaria maculosa*), brooklime (*Veronica beccabunga*), knotgrass (*Polygonum aviculare*), slender St John's-wort (*Hypericum pulchrum*), groundsel (*Senecio vulgaris*) and common spotted orchid (*Dactylorhiza fuchsii*).

Areas of semi-improved wet grassland associated with agriculture also occur around the peripheries of the Application Site.



Plate 4-28 Area of purple moor grass (*Molinia caerulea*) dominated Wet grassland (GS4) that has recolonised cutover bog in Blackriver Bog

Amenity Grassland (GA2)

Small areas of **Amenity grassland (GA2)** are associated with Premier Tyres Factory in the east of the site.

4.2.1.1.13 Dense bracken (HD1)

Areas of the habitat **Dense bracken (HD1)** are dominated by the fern bracken (*Pteridium aquilinum*). This habitat occurs in small pockets throughout the Application Site, along the edges of roads and tracks through the site, as well as in rides between areas of Bog woodland (WN7) (Plate 4-29).



Plate 4-29 Dense bracken (HD1) present within a ride between areas of Bog woodland (WN7) in Ballydermot North

4.2.1.1.14 **Conifer plantation (WD4)**

A large area of **Conifer plantation (WD4)** managed by Coillte is located in the east and northeast of the site, within Killina, Lullymore, Lullybeg, Glashabaun South and Derrybrennan Bogs. A number of forestry sub-compartments are present in this area, with the coniferous components of the plantations comprising mixes of sitka spruce (*Picea sitchensis*), Norway spruce (*Picea abies*), lodgepole pine (*Pinus contorta*), Corsican pine (*Pinus nigra*), and Monterey pine (*Pinus radiata*), with varying percentages of broadleaves including willows (*Salix* spp.), birches (*Betula* spp.), and oaks (*Quercus* spp.). These plantations are of mixed maturity, with planting dates between 1983 and 2019.

4.2.1.1.15 **Buildings and artificial surfaces (BL3)**

A number of existing public and private paved roads are present through the Application Site, and are classified as **Buildings and artificial surfaces (BL3)**. These include the L1001/L3001 local road that traverses the centre of the site in a north-south direction, as well as the R414 which traverses the eastern section of the site, to the west and north of Lodge Bog. A smaller gravel access road is also located in the southwest of the site (Plate 4-30), however this road deteriorates to Recolonising bare ground (ED3) as it traverses north.

The main access road to the Application Site is located to the north of this power station and overlaps with the existing access road to Cushaling Wind Farm station for a distance of approximately 850m (Plate 4-32Plate 4-32).



Plate 4-30 Existing gravel road located in Ballydermot North, classified as Buildings and artificial surfaces (BL3).



Plate 4-31 Edenderry Power Station (background) in the west of the site is classified as Buildings and artificial surfaces (BL3).



Plate 4-32 The existing access road to Cushaling Wind Farm, classified as Buildings and artificial surfaces (BL3).

4.2.1.1.16 **Spoil and bare ground (ED2)**

A number of narrow, existing gravel access tracks are present throughout the Application Site and are classified as **Spoil and bare ground (ED2)** (Plate 4-33).



Plate 4-33 A small access track classified as Spoil and bare ground (ED2)

4.2.1.1.17 Recolonising bare ground (ED3)

Where these areas of Spoil and bare ground (ED2) have been left undisturbed, they have transitioned into **Recolonising bare ground (ED3)**. A large area of this habitat is present along the main access road in the west of the Application Site, where recolonising plants are underlain by dense wood chippings (Plate 4-34).

This habitat is also present in Ballydermot South Bog, where the species broadleaf plantain (*Plantago major*), jointed rush (*Juncus articulatus*), black medick (*Medicago lupulina*), devil's-bit scabious (*Succisa pratensis*), rough meadow grass (*Poa trivialis*), sweet vernal grass (*Anthoxanthum odoratum*), yarrow (*Achillea millefolium*) and cat's-ear (*Hypochaeris radicata*) have begun to recolonise (Plate 4-35).



Plate 4-34 Area of Recolonising bare ground (ED3) in the west of the site.



Plate 4-35 Area of Recolonising bare ground (ED3) in Ballydermot South.

4.2.1.1.18 **Hedgerows (WL1) and Treelines (WL2)**

Hedgerow (WL1) and **Treeline (WL2)** habitats make up a very small proportion of the habitats within the Application Site. Short hedgerows of grey willow (*Salix cinerea*) are located in the west of the Application Site, adjacent to Edenderry Power Station (Plate 4-36). As outlined in Section 4.2.1.1.4 above, many of the linear treelines within the Application Site, which are largely associated with drainage ditches, are over 4m in width and are therefore included as linear stretches of bog woodlands (WN7).



Plate 4-36 Short grey willow (*Salix cinerea*) Hedgerow (WL1) in the west of the Application Site

4.2.1.2 Invasive Species and Protected Flora Species

One invasive plant species listed under the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011, as amended) and the First Schedule of the European Union (Invasive Alien Species) Regulations 2024 (S.I. 374 of 2024) was recorded during the surveys of the Application Site. Japanese knotweed (*Reynoutria japonica*) was identified growing on the margins of an unnamed watercourse located along the southwestern boundary of Ticknevin Bog. Two large, mature stands were identified in this location, which were flowering at the time of survey. Evidence of local spread was observed, with a number of immature individual saplings recorded up to 120m from the main stands.

Several medium to large stands of Japanese knotweed were also identified approximately 830m to the west of the Application Site boundary, along an existing access track in the west of Ticknevin Bog. This access track is used for ongoing turbary activities in the area. Many of these stands were in flower at the time of survey.

In addition, the non-native invasive plant species cherry laurel (*Prunus laurocerasus*), butterfly bush (*Buddleja davidii*), montbretia (*Crocsmia x crocosmiiflora*) and wall cotoneaster (*Cotoneaster horizontalis*) were also each recorded once within the Application Site, in Killina, Glashabaun North, Barnaran and Lodge Bogs, respectively. These species are not listed under the Third or First Schedules.

No Annex II flora species were recorded in the Application Site during the surveys.

4.2.2 Faunal Surveys

4.2.2.1 Otter

Desk-based review identified that otter are widespread in wider area surrounding the Project. Watercourses within and adjacent to the Application Site provide suitable habitat for otter.

No otter resting or breeding sites were recorded within the Application Site. Potential otter slides were identified near the watercourse crossing located northeast Ballydermot North, however no holts, spraints, couches or any other evidence of breeding otter were identified within the area or across the rest of the site.

An otter was also observed as an incidental record during bird surveys on a single occasion within the Application Site, within a large drain through Lodge Bog. Habitats in the vicinity of this drain were searched thoroughly for otter breeding sites, however, no holts were identified.

During otter surveys carried out by Triturus Environmental Ltd. (full results and survey site locations in Appendix 3), evidence of otter presence was recorded at a number of locations as follows:

- A latrine and prints were identified at survey site B2. This survey location is situated outside of the Application Site, within the River Barrow. This is located downstream of watercourses which flow through the Application Site.
- A spraint site was identified at survey site C2. This survey location is situated outside of the Application Site within the Slate River. This is located downstream of watercourses which flow through the Application Site.
- A regular otter spraint site was identified at survey site A14, under the bridge (ITM 665011, 725886). This survey site is located on the Figile River, immediately south of Edenderry Power Station.
- An otter spraint site was recorded at survey site A15, on a boulder under the bridge (ITM 661001, 726836). This survey site is located at Cushaling Bridge along the L3001 road.

No otter holts were identified during any of the surveys undertaken.

4.2.2.2 Fisheries and Aquatic Fauna

Full details of results of aquatic surveys undertaken in July-August 2024 are provided in the Aquatic Baseline Report (Appendix 3) and are summarised in this section. Previous surveys undertaken during 2021 in relation to the Application Site were also considered in this report. All survey locations (n=31) are shown in Figure 2-1 of the Aquatic Baseline Report (Appendix 3). The following summary has been extracted from the baseline report.

4.2.2.2.1 Watercourses

The surveyed watercourses in the vicinity of the Application Site were typically small lowland channels draining areas of peatland that experienced low summer flows. Historical drainage pressures (straightening, deepening) and ongoing peat escapement (siltation) had significantly reduced the quality of aquatic habitats and biological water quality on the majority of surveyed watercourses. However, several species of high conservation value and relevance to European Sites were recorded in the survey area, including Annex II Atlantic salmon, lamprey (*Lampetra sp.*) and otter.

4.2.2.2.2 Fish Species

Atlantic salmon (*Salmo salar*) were recorded from two sites on the Figile River (A18) and the Slate River (C2). Lamprey ammocoetes (*Lampetra sp.*) were recorded from a single site on the River Boyne at Kishawanny Bridge (B2), where low densities were present. The quality of lamprey habitat was generally poor across the survey area given widespread hydromorphological and siltation pressures.

4.2.2.2.3 White-clawed Crayfish

Despite local habitat suitability and numerous available records within the study area, including on the Figile and Slate rivers (1986-2020), no white-clawed crayfish were recorded during the 2024 survey. No crayfish were recorded during the previous 2021 surveys (Triturus, 2021). The limited distribution would appear to be reflective of not only peat harvesting and historical drainage pressures but also of the spread of crayfish plague. The Boyne catchment suffered crayfish plague outbreaks in the late 1980s (Demers *et al.*, 2005) and in more recent years, crayfish plague has been confirmed on the Slate River in the vicinity of Rathangan (NPWS, 2019). However, white-clawed crayfish were detected via eDNA sampling on the Figile River as recently as 2020 (near Bracknagh) as part of the National Crayfish Plague Surveillance Programme (NCPSP), although most crayfish records within the wider survey area are from 2015 or before (NPWS, EPA & Triturus data).

4.2.2.2.4 eDNA analysis

No white-clawed crayfish, crayfish plague or freshwater pearl mussel eDNA was detected in composite water samples collected from the Figile River (sites A15 & A18), River Boyne (B2) or Slate River (C2). These results were considered as evidence of the species' absence at or upstream of the sampling locations.

4.2.2.2.5 Kick-sampling and Q-Value

None of the survey sites achieved greater than Q3-4 (moderate status) and thus all failed to meet the target good status ($\geq Q4$) requirements of the Water Framework Directive. Arterial drainage (hydromorphological) and peat harvesting have been identified as the major pressures impacting water quality in the upper Barrow and Boyne catchments, and this was observed during current and previous surveys.

4.2.2.3 Birds

A full list of all target bird species recorded during bird surveys undertaken at the Application Site from 2020 to 2026 is included in the Bird Survey Report (Appendix 4). This includes records of species that are SCI species of SPAs in the vicinity of the Application Site, presented below. No SPAs were identified as being within the Likely Zone of Influence of the Project in the rAASR (Appendix 1) and therefore no SPAs are included in the assessment in this rNIS.

Hen Harrier

Hen Harrier is an SCI species of the Slieve Bloom Mountains SPA, located 27.5km from the Application Site. Hen Harrier was recorded on 210 occasions during surveys, with observations comprising individual birds travelling or hunting within or adjacent to the Application Site. Four observations of potential roosts and 11 confirmed roosts within or adjacent to the Application Site were recorded across the survey period. There were no regularly used roost sites identified within the Application Site. Given the distance of 27.5km between the Application Site and the Slieve Bloom Mountains SPA, and the maximum foraging distance of 10km for this species (SNH, 2016), the hen harrier recorded at the Application Site are not considered to be associated with the SPA population.

Kingfisher

Kingfisher is an SCI species of the River Boyne and River Blackwater SPA, located 14.3km from the Application Site. Kingfisher was recorded on 65 occasions during surveys, with observations comprising birds travelling, perched or foraging within or adjacent to the Application Site. Given the distance between the Application Site and the River Boyne and River Blackwater SPA, the kingfisher recorded at the Application Site are not considered to be associated with the SPA population.

Lesser Black-backed Gull

Lesser Black-backed Gull is an SCI species of the Poulaphuca Reservoir SPA, located 26.2km from the Application Site. There were 197 observations of lesser black-backed gull. The majority of observations comprised birds travelling or circling, with only 12 observations of birds landing, foraging or roosting within, or adjacent to, the Application Site during the six years of surveys. Of the 197 observations, 74 were in winter seasons. The Application Site is not considered to represent a significant foraging or roosting resource for the SCI populations of lesser black-backed gull.

5.

ASSESSMENT OF POTENTIAL EFFECTS & ASSOCIATED CONTROL/MITIGATION MEASURES

This section provides an assessment of the potential effects of the Project at the Application Site on the Screened-In European Sites identified in Section 4 above, i.e.

- The Long Derries, Edenderry SAC; and
- River Barrow and River Nore SAC.

The assessment ascertains whether the peat extraction and ancillary activities at the Application Site have had an effect and/or will have an effect on the integrity of the Screened-In European Sites in light of the sites' conservation objectives. The potential for adverse effects on the integrity of the European Sites is assessed under three phases:

- **Peat Extraction Phase** - includes all works undertaken from 1994 to the cessation of peat extraction in June 2020. 1994 is when The Habitats Directive came into effect, though it was not transposed into Irish law until 1997 through the European Communities (Natural Habitats) Regulations 1997 and when Appropriate Assessment (AA) became a legal requirement.
- **Current Phase** - includes all activities carried out at the Application Site from the cessation of peat extraction in June 2020 to the present day.
- **Remedial Phase** - implementation of the Rehabilitation Plans for the Application Site, required under Condition 10 of its EPA Licence P0503-01, following the cessation of peat extraction in 2020.

5.1

Potential for Direct Effects on the European Sites

The Application Site is located within the boundary of the Long Derries, Edenderry SAC, which is designated for Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (important orchid sites) [6210]. This habitat is associated with a low esker ridge running through the Application Site from Edenderry to Rathdangan.

The site synopsis for the Long Derries, Edenderry SAC (NPWS, 2013) notes that activities connected with the harvesting of peat occur at the western section of the SAC. Ancillary activities associated with peat extraction were ongoing within the boundary of the SAC from the date it was proposed as a Site of Community Importance (SCI) in 1997 until the cessation of peat extraction in June 2020. The potential for direct effects on the qualifying interest habitat was therefore considered in relation to habitat loss and habitat degradation. These are assessed in the sections below.

5.1.1

Habitat Loss

The [6210] habitat is associated with the esker ridge, which is geologically and topographically distinct from the cutover bog areas subject to peat extraction. No peat extraction occurred within the qualifying interest habitat. No potential for direct loss of the qualifying interest habitat through peat extraction or ancillary activities that occurred during the Peat Extraction Phase or Current Phase was identified.

During the Remedial Phase, drain blocking and rewetting works will be confined to the cutover bog areas of the Application Site and will not involve works within or adjacent to the qualifying interest habitat of the SAC. No potential for direct habitat loss during the Remedial Phase was identified.

5.1.1.1 Impact Assessment

There is no potential for direct habitat loss to have occurred or to occur as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase, Current Phase or Remedial Phase.

5.1.2 Habitat Degradation

Given the overlap between the Application Site and the SAC boundary, and the presence of ancillary infrastructure within the SAC boundary as noted in the site synopsis, potential pathways for habitat degradation of the qualifying interest habitat were considered. These include encroachment of machinery or infrastructure into or adjacent to the qualifying interest habitat, spread of invasive or negative indicator species from disturbed cutover bog areas, and dust or particulate deposition from peat extraction and ancillary activities.

In the absence of control measures, the above activities at the Application Site could potentially have had an adverse effect on the integrity of the Long Derries, Edenderry SAC in light of its conservation objectives.

During the Remedial Phase, drain blocking and rewetting works will be confined to the cutover bog areas of the Application Site and will not involve works within or adjacent to the qualifying interest habitat. No potential for habitat degradation during the Remedial Phase was identified.

5.1.2.1 Impact Assessment

In the absence of control measures there is potential for peat extraction and ancillary activities at the Application Site to have had an adverse effect on the integrity of the Long Derries, Edenderry SAC in light of its conservation objectives, as a result of habitat degradation of the qualifying interest habitat during the Peat Extraction Phase and Current Phase.

5.1.2.2 Control Measures

The following control measures were in place at the Application Site from 1997.

5.1.2.2.1 Pre-1997

Peat Extraction Machinery – Maintenance Programmes and Storage

1. All peat extraction machinery listed in were stored at the nearest Works or in a local holding area at the end of the workday;
2. All machinery was regularly inspected, serviced and maintained;
3. All machinery was regularly cleaned via power steam wash system at a wash bay which drained into a fuel/oil interceptor unit and associated gravel soak pit. The interceptor unit facilitated the removal of any oil/grease components. This was done to minimise dust and particle release; and,
4. A self-contained machine parts washer was located in the workshop at the Ballydermot Works.

Refuelling Facilities

As discussed above, refuelling and maintenance of all vehicles were undertaken at the Ballydermot Works. When machinery required refuelling on the Application Site, it was carried out by a mobile (rail or tractor-transported) fuelling unit which travelled out from Ballydermot Works to the bogs where the

machinery was located. The following emergency action procedure was implemented at the Application Site prior to IPC licencing (pre-2000) and was recorded as part of the IPC Licence application process:

1. When a spill occurred, the General Manager was immediately informed of the incident;
2. The spill was required to be assessed by the General Manager for potential risk to the health and safety of employees and the potential environmental consequences;
3. If there was a risk of explosion, all personnel were required to be evacuated from the area;
4. The spill was sourced, isolated and contained with polystyrene booms or dry peat (moisture content of 10%);
5. All efforts were made to prevent the spill from entering a storm drain or nearest outfall;
6. Once the spill had been contained, a suitable absorbent (e.g., dry peat) was to be used to soak the spillage;
7. All possible ignition sources such as electrical equipment, naked lights, machinery were removed from the area. Any combustibles in the spill area were removed;
8. Follow up action measures taken includes the implementation of appropriate remedial work to prevent such a spillage recurring in the future; and,
9. In the event of a significant spillage, the General Manager was required to notify the local authority.

Dust Management at Bog boundaries and Headlands

Dust emissions were higher from the milled peat extraction process than the sod peat extraction process. Tree cover along the fringes of bogs minimised the amount of dust that would travel off-site. In 1976 BnM established a policy to preserve the vegetation and tree cover on all bog fringes and on any mineral islands (Brown Gold 'A History of Bord na Móna and the Irish Peat Industry', 2010 Clarke, Donal, Chapter 10 Pg 206). In addition, the following measures were undertaken at a minimum to minimise dust emissions and later expanded under IPC Licence:

1. Stockpiles were compacted on either side by large rollers drawn by 65H.P tractors;
2. Stockpiles were covered with polythene film gauge sheets and secured in position by spreading an even layer of high moisture content milled peat;
3. Avoid extraction during windy weather;
4. Keep headlands clean and remove loose peat;
5. Drive slow along dusty headlands; and,
6. Clean all road crossings.
7. All peat extraction machinery was stored at the nearest Works or in a local holding area at the end of each workday. All machinery was regularly inspected, serviced and maintained. Railway tracks and railway locomotives underwent continuous inspection and maintenance to prevent derailments, fires, accidents and fuel leaks.

5.1.2.2.2 1997 - 2000

Post-1977, but prior to the implementation of the IPC Licence at the Application Site in 2000, the environmental management measures remained in place across the Application Site.

5.1.2.2.3 Post 2000

Since 2000, all activities at the Application Site have been regulated by the EPA under IPC Licence Registration No. P0503-01. The IPC Licence is subject to 14. no conditions pertaining to the ongoing monitoring and maintenance to ensure any emissions from site activities will comply with and not contravene, any of the requirements of Section 83(3) of the Environmental Protection Agency Act, 1992 outlined below:

(3) The Agency shall not grant a licence or revised licence for an activity unless it is satisfied that –

- (a) any emissions from the activity will not result in the contravention of any relevant air quality standard specified under section 50 of the Air Pollution Act, 1987, and will comply with any relevant emission limit value specified under section 51 of the Air Pollution Act, 1987,*
- (b) any emissions from the activity will comply with, or will not result in the contravention of, any relevant quality standard for waters, trade effluents and sewage effluents and standards in relation to treatment of such effluents prescribed under section 26 of the Local Government (Water Pollution) Act, 1977,*
- (c) any emissions from the activity or any premises, plant, methods, processes, operating procedures or other factors which affect such emissions will comply with, or will not result in the contravention of, any relevant standard including any standard for an environmental medium prescribed under regulations made under the European Communities Act, 1972, or under any other enactment,*
- (d) any noise from the activity will comply with, or will not result in the contravention of, any regulations under section 106,*
- (e) any emissions from the activity will not cause significant environmental pollution, and*
- (f) the best available technology not entailing excessive costs will be used to prevent or eliminate or, where that is not practicable, to limit, abate or reduce an emission from the activity, and, where appropriate, the Agency shall attach conditions relating to the matters specified in the foregoing paragraphs to the licence or revised licence.*

Conditions 1 to 4 of the IPC Licence outlined the Scope, Management, Interpretation and Notification procedures required by the Applicant, respectively. Conditions 11 to 14 detail the Monitoring (equipment use), Recording and Reporting, Emergency Response and Financial Provisions duties of the Applicant. Conditions 5 to 10 pertain to environmental monitoring and management:

- Condition 5 Emissions to Atmosphere
- Condition 6 Emissions to Water
- Condition 7 Waste Management
- Condition 8 Noise
- Condition 9 Water Protection
- Condition 10 Cutaway Bog Rehabilitation

Following the grant of the IPC Licence in 2000, BnM staff underwent an EPA IPC Licence Compliance training programme, which resulted in the development of an environmental management system. This system addresses emissions to water and air, noise, vibration and odour emissions, waste management, use of natural resources, visual effects and the natural environment and ecosystem.

In compliance with Condition 5 of the IPC Licence, the Applicant was required to undertake annual tests on boiler combustion efficiency and dust monitoring.

During the implementation of the Rehabilitation Plans for the Application Site, rehabilitation works will be confined to the cutover bog areas of the Application Site and will not involve works within or adjacent to the qualifying interest habitat of the SAC. No additional control measures in respect of direct effects on the Long Derries, Edenderry SAC are required during the Remedial Phase.

5.2

Potential for Indirect Effects on the European Sites

There is hydrological connectivity between the Application Site and the River Barrow and River Nore SAC via drainage ditches and watercourses within the Application Site.

The majority of the Application Site lies within the River Barrow (14) catchment, specifically the Figile sub-catchment, drained by several streams including the Abbeylough, Lullymore East, Lullybeg, Clonbrown, Cloncant, Codd, Ballyleakin, Clonbulloge and Ballygarrett streams, all of which drain into the Figile River before discharging into the River Barrow. Streams draining the southern part of the Application Site flow into the Slate River, which conflues with the Figile River approximately 6.6 km southwest of the Application Site. A small area in the north of the Application Site lies within the River Boyne (07) catchment, drained by the Clonkeen Stream which discharges into the River Boyne approximately 2 km north of the Application Site, however, it is noted that there is no surface water outfall from the bog with this catchment. All water from Ticknevin Bog is directed to the south and discharges via several settlement ponds to the Codd Stream, a tributary of the Figile River. Therefore, due to its distance from the Application Site and the lack of any surface water emission points from the bogs within the catchment to the River Boyne, the River Boyne and River Blackwater SAC is not within the zone of influence of the Project. The River Barrow forms part of River Barrow and River Nore SAC.

A potential pathway for indirect effects on a number of QIs of River Barrow and River Nore SAC due to deterioration of water quality as a result of peat extraction was identified. During the Peat Extraction Phase and Current Phase at the Application Site there would have been potential for deterioration in surface and ground water quality as a result of run-off of pollutants, including silts and hydrocarbons, during peat extraction and ancillary activities to watercourses within and downstream of the site which have connectivity with the River Barrow and River Nore SAC. During the implementation of the Rehabilitation Plans in the Remedial Phase, there will also be some small-scale activity at the site involving machinery and plant with which there is a risk of accidental spillage of hydrocarbons.

Potential indirect effects on River Barrow and River Nore SAC arising from deterioration of water quality during the Peat Extraction Phase, Current Phase and Remedial Phase are confined to aquatic QIs that may occur downstream of the Application Site, where hydrological connectivity exists. These include:

- [1016] Desmoulin's Whorl Snail (*Vertigo moulinsiana*)
- [[1092] White-clawed Crayfish (*Austropotamobius pallipes*)
- [1095] Sea Lamprey (*Petromyzon marinus*)
- [1096] Brook Lamprey (*Lampetra planeri*)
- [1099] River Lamprey (*Lampetra fluviatilis*)
- [1103] Twaite Shad (*Alosa fallax fallax*)
- [1106] Salmon (*Salmo salar*)
- [1355] Otter (*Lutra lutra*)
- [3260] Water courses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation
- [6430] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels
- [91E0] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, *Alnus incanae*, *Salix albae*)

In addition to water quality, a potential pathway for indirect effects via disturbance was identified. There is likely to be a regularly occurring population utilising the watercourses within and downstream of the Application Site. Otters can utilise extensive territories, (approximately 7.5 ± 1.5 km for females and 13.2 ± 5.3 km for males (Ó'Neill, 2008)). On a precautionary basis, it is considered that otters potentially using watercourses within or downstream of the Application Site may be associated with River Barrow and River Nore SAC. This relates only to otter associated with River Barrow and River Nore SAC, where disturbance could have occurred during drain maintenance works if resting or breeding sites were present within the Application Site. On a precautionary basis, a pathway for disturbance and displacement of this species from machinery, personnel, noise and general activity has been identified during the Peat Extraction Phase, Current Phase and Remedial Phase.

The potential for adverse effects on the integrity of this European Site via a) deterioration of water quality and b) disturbance is discussed in the sections below.

5.2.1 Deterioration of Water Quality

Between 2002 (when the River Barrow and River Nore SAC was proposed as a Site of Community Importance (SCI)) and 2020, the main activities at the Application Site included peat extraction and the creation and removal of stockpiles of peat, peat transportation and maintenance of drains, machinery and pumps. All areas of bog to be subject to extraction had been drained, peat extraction was underway and railway infrastructure had been laid within the Application Site by 2002.

Since the cessation of peat extraction at the Application Site in June 2020, the main activities at the Application Site have included removal of stockpiled peat, which was completed by 2021, and continued maintenance of surface water management infrastructure, including drainage outfalls and silt traps.

Taking 2002 as the baseline (the year when the River Barrow and River Nore SAC was first designated), which was during the Peat Extraction Phase, in the absence of control and mitigation measures, peat extractions and ancillary activities which were undertaken at different times and at different levels of intensity throughout the Application Site, until the cessation of peat extraction in June 2020, are likely to have resulted in indirect effects on water quality within and downstream of the site in the form of water pollution.

During this time there would have been potential for indirect effects on the River Barrow and River Nore SAC in the form of deterioration of water quality (and therefore degradation of aquatic QI habitats and supporting habitat for QI species) due to the release of pollutants including suspended solids. This potential for release of suspended solids would have been greatest during the construction of drainage channels, removal of surface vegetation and during peat extraction itself. During the Peat Extraction Phase, there was also an ongoing risk of elevated concentrations of suspended solids making their way into downstream surface watercourses from the erosion of peat sediment via the bog drainage network. In addition, the release of dissolved nutrients, principally ammonia, resulting from the rapid breakdown of organic matter within peat once exposed to air, could also have resulted in deterioration of water quality of watercourses within and downstream of the site which had connectivity with the above European Sites. During the above time period there would also have been potential for pollution of surface water bodies and groundwater due to the accidental spillage of hydrocarbons during refuelling of machinery and plant and due to discharges from wastewater systems (septic tanks) at office buildings, and at productions centres and workshops which could potentially also have caused surface and groundwater contamination.

In the absence of control and mitigation measures there is potential for the above peat extraction and ancillary activities at the Application Site to have had an adverse effect on the integrity of the River Barrow and River Nore SAC in light of its conservation objectives. The primary potential impact on water quality would have been the increase in suspended solids and the greatest risk would have occurred during times of major earthworks such as during the removal of vegetation and the construction of the bog drainage network. The vast majority of drainage had already been inserted on the bog prior to designation of the site, however, there would still have remained some potential for run-off of pollutants during peat extraction.

With the cessation of peat extraction in June 2020 and during the Current Phase there was less potential for release of suspended sediments and pollution of water quality including watercourses and groundwater due to the nature of the works, i.e. no extraction, removal of stockpiles only. There would also have been much reduced machinery operating on site reducing the potential for hydrocarbon spillages.

The implementation of the Rehabilitation Plans during the Remedial Phase for the Application Site aims to stabilise the former peat extraction areas. Natural colonisation and targeted re-wetting will encourage revegetation of the former bare peat areas which in turn will stabilise substrates reducing the potential for elevated concentrations of suspended solids in runoff from the site. This will also have benefits for aquatic fauna in terms of improved water quality and therefore habitat quality. Silt ponds will continue to operate during the early stages of the rehabilitation process and will only be decommissioned when the Application Site is deemed to be on a trajectory of environmental stability and/or rehabilitation has been completed. During the implementation of the Rehabilitation Plans, there will be some small-scale activity at the Application Site involving machinery and plant with which there is always a risk of accidental spillage of hydrocarbons.

5.2.1.1 Impact Assessment

In the absence of control and mitigation measures there is potential for the peat extraction and ancillary activities at the Application Site to have had and to have an adverse effect on the integrity of the River Barrow and River Nore SAC in light of its conservation objectives, as a result of deterioration of water quality during the Peat Extraction Phase, Current Phase and Remedial Phase.

5.2.1.2 Control and Mitigation Measures

5.2.1.2.1 Pre IPC Licence (Pre 2000)

Suspended Solids

Prior to the implementation of the IPC Licence at the Allen Bog Group by the EPA which commenced in 2000, the Applicant was employing several control measures to protect surface water quality in downstream waterbodies. These measures primarily relate to the concentrations of suspended sediments in discharge from the bog and are summarised below:

- Internal drains cleaned on a regular basis in suitable weather. This was completed to remove sludge from the bottom of ditches, allowing them to retain full functionality. The sludge was disposed of by spreading it on the adjacent production fields where it was dried and harvested;
- Drain maintenance was carried out using draglines and excavators, ensuring that these drains were fit for purpose;
- Drain maintenance was carried out mainly prior to and post the harvesting season.
- Silt ponds were utilised to control the amount of sediment being discharged at outfalls. At this time, silt ponds were designed for an upper limit of 100mg/l suspended sediment;
- Silt ponds were upgraded in the 1990s to cater for the settling of sufficient amount of silt. This often included the construction of a second silt pond adjacent to the first, which was used as a backup and to facilitate desludging of the primary pond; and,
- Silt ponds were deslugged twice per annum.

Accidental Leaks and Spillages

Prior to the EPA IPC Licence at the Application Site which commenced in 2000, the Applicant was implementing several control measures to reduce the risk of contamination by spills and leakages. These measures primarily relate to the storage of peat harvesting machinery, refuelling procedures and waste management. These measures are summarised below:

- All machinery were regularly inspected, serviced and cleaned. Cleaning was completed at a wash bay which drained towards an interceptor tank and associated soak pit;
- Where possible all refuelling was completed at the Ballydermot Works;
- In the event that on-site refuelling was required, it was done with a mobile fuelling unit;
- In the event of an emergency spill, the following procedures were in place:
 - The General Manager (GM) was immediately informed of the incident.

- The spill was assessed by the GM to assess the potential for environmental and/or health consequences.
- The spill would have been sourced, isolated and contained with polystyrene booms or dry peat.
- Every effort would have been made to prevent the spill from entering the nearest drain or outfall.
- Once the spill was contained, a suitable absorbent (typically dry peat) was used to soak the spillage.
- Follow up measures were taken to prevent such a spillage recurring in the future.
- In the event of a spillage the GM notified the local authority.
- All waste oil and break fluids drained from machinery were collected in drums and emptied into a waste oil storage tank which were transported off-site by a licenced disposal contractor;
- All used oil and fuel filters and used batteries were collected by licenced disposal and battery collection contractors respectively; and,
- All washing from the self-contained machine parts washer was collected within a sludge tank at the Ballydermot Works.

5.2.1.2.2 **Active IPC Licence (Post 2000)**

Since 2000, all activities at the Application Site have been regulated by the EPA under IPC Licence Registration No. P0503-01 and water quality discharge licence limits have been in place for the Application Site since. The regulation of activities at the Application Site predates the designation of the River Barrow and River Nore SAC in 2002.

Suspended Solids

Since 2000, peat extractions and ancillary activities at the Application Site have been under IPC Licence Registration No. P0503-01 and have been subject to the conditions of that Licence which include discharge limits for suspended solids and nutrients including ammonia and phosphorous. The drainage system in place at the bogs comprising field drains, main drains, piped drains, silt ponds upstream of outfall locations, is designed to prevent the release of elevated concentrations of suspended sediments into nearby surface waterbodies. As part of the IPC Licence, there is a limit of 35mg/l for suspended solids.

Existing control measures which were implemented under the IPC Licence are also designed to limit runoff rates from the bog units. These include:

- Silt ponds providing attenuation limited runoff during periods of intense rainfall; and
- Continuous mitigation included maintaining the schedule of cleaning the silt ponds at a minimum of twice per year.

Accidental leaks and spillages

The refuelling procedures control measures implemented by BnM prior to regulation under IPC Licence were upgraded and enhanced in order to comply with IPC Licence conditions with the Application Site being regulated by the EPA under IPC Licence Registration No. P0503-01 since 2000. The list below outlines control measures conditioned under the IPC licencing regime, as regulated by the EPA:

- Effective spill/leak management of mobile fuelling units was undertaken;
- Replacement (and remediation where necessary) of all underground fuel tanks was undertaken;
- There was no other emissions to water of environmental significance;
- All tank and drum storage areas were rendered impervious to the materials stored therein. In addition, tank and drum storage areas was bunded;
- Drainage from bunded areas was diverted for collection and safe disposal;

- The integrity and water tightness of all the bunding structures and their resistance to penetration by water or other materials stored therein was tested and demonstrated by the licensee to the satisfaction of the Agency and reported to the Agency within eighteen months from the date of grant of this licence and every two years thereafter;
- The loading and unloading of fuel oils was carried out in designated areas protected against spillage and leachate run-off;
- While awaiting disposal, all materials were collected and stored in designated areas protected against spillage and leachate run-off;
- Except for roof water, all surface water discharges from workshop areas were fitted with oil interceptors;
- An inspection for leaks on all flanges and valves on over-ground pipes used to transport materials other than water was carried out weekly;
- BnM undertook a programme of testing and inspection of underground fuel pipelines to ensure that all underground fuel lines were tested at least every three years; and,
- BnM maintained (in storage) an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage.

During the implementation of the Rehabilitation Plans for the Application Site, the existing silt control measures will continue to operate during the early stages of the Rehabilitation Plans when there is potential for the entrainment of suspended solids in surface waters during drain blocking. During this time no remedial works will be completed during periods of prolonged rainfall. Silt ponds will continue to be in use and will be regularly inspected and maintained as per IPC Licence requirements.

Following implementation of the rehabilitation measures a programme of aftercare and maintenance, designed in accord to meet the Conditions of the IPC Licence, will be completed at the Application Site. This will comprise of initial quarterly monitoring, with the number of site visits reducing after 2 years to bi-annually and then after 5 years to annual visits. A water quality monitoring program will be established to monitor the impact of rehabilitation on water quality discharge from the bog. The monitoring results will be reported on each year to the EPA with the parameters to be included as follows: monthly monitoring for pH, Suspended Solids, Total Solids, Total Phosphorus, Total Ammonia, Colour, and COD and DOC.

In addition to the above, a number of standard best-practice site management and pollution prevention measures will be implemented to further minimise risks to water quality. These include:

- During periods of heavy precipitation and run-off, activities will be halted;
- All machines will be regularly checked and maintained prior to arrival at the site to prevent hydrocarbon leakage;
- 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;
- 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 onsite;
- All plant refuelling will take place using mobile fuel bowers. Only dedicated trained and competent personnel will carry out refuelling operations;
- Mobile storage such as fuel bowers will be banded to 110% capacity to prevent spills. Tanks for bowers and generators shall be double skinned. When not in use, all valves and fuel trigger guns 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; and,
- Potential impacts caused by spillages etc. during rehabilitation will be reduced by keeping spill kits and other appropriate equipment on-site.

5.2.2 Disturbance

Between 2002 (when the River Barrow and River Nore SAC was designated) and 2020, peat extraction and ancillary activities at the Application Site, which required the presence of machinery and personnel on site, created potential for disturbance of otter. Since the cessation of peat extraction at the Application Site in June 2020, volumes of machinery and personnel on site have been much reduced due to the nature of the ongoing activities, i.e. removal of peat stockpiles. Potential for disturbance of these species during the Current Phase would be of a much-reduced scale. Similarly, the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase will involve drain blocking and re-wetting, which will involve the presence of small-scale machinery and personnel on site which creates potential for disturbance of otter utilising the site. While there will be some potential for disturbance of these species during the Current Phase and Remedial Phase, this will be of a much-reduced nature when compared to the Peat Extraction Phase.

The potential for adverse effects on the integrity of the otter populations associated with this European Site as a result of disturbance is considered below.

5.2.2.1 Otter

A potential pathway for indirect effects in the form of disturbance of otter populations associated with the River Barrow and River Nore SAC is considered below on a precautionary basis.

Although a small number of streams and rivers drain the site, the majority of these are located towards the peripheries of the site and the vast majority of watercourses within the site are artificial drainage channels with low suitability for otter, although they may be used on occasion for commuting or foraging. During the walkover surveys and dedicated otter surveys undertaken, no otter resting or breeding sites were identified within or adjacent to the Application Site and the small, modified watercourses and drains within the site were not found to support significant suitable habitat for this species.

Otter are predominantly crepuscular in nature and are unlikely to have been adversely impacted by the peat harvesting activities. The NPWS Threat Response Plan for Otter acknowledges that “*Little evidence has come to light in recent studies to suggest that disturbance by recreation is a significant pressure.*” It also identifies that otter are known to travel significant distances from streams and lakes in search of new territory and feeding areas.

Channin P (2003) provides a literary review with regard to anthropogenic disturbance and refers to several reports which have found that disturbance is not detrimental to otters (Jefferies, 1987; Durbin, 1993; Green & Green, 1997). The report also describes successful breeding in towns, under ferry terminals and under the jetties of one of Europe’s largest oil and gas terminals at Sullom Voe in North Scotland.

Irish Wildlife Manual No 23 (National Otter Survey of Ireland 2004/2005) found no significant relationship between disturbance and otter occurrence. In addition, no significant difference in otter presence was found between sites with and without recreational activity. It also states, “*the lowest percentage occurrence was found at the sites with the lowest recorded disturbance*” Irish Wildlife Manual No 76 (National Otter Survey of Ireland 2010/2012) notes that the occurrence of otter was unaffected by perceived levels of disturbance at the survey sites. It also notes that there is little published evidence demonstrating any consistent relationship between otter occurrence and human disturbance (Mason & Macdonald 1986, Delibes *et al.* 1991; Bailey & Rochford, 2006).

Based on the above review of scientific literature and the recorded absence of optimal habitat for this species within the Application Site during the site surveys undertaken between 2021 and 2025, no potential for adverse effects to have occurred on the integrity of the otter population associated with the River Barrow and River Nore SAC as a result of disturbance during the Peat Extraction Phase or

Current Phase was identified. There is no potential for adverse effects on otter as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.

5.2.2.2 Impact Assessment

In the absence of mitigation there is no potential for the peat extractions and ancillary activities at the Application Site to have had and to have an adverse effect on the integrity of the River Barrow and River Nore SAC in light of its conservation objectives, as a result of disturbance.

5.2.2.3 Control and Mitigation Measures

No control measures in relation to disturbance of otter were in place during the Peat Extraction Phase and Current Phase.

Although there is no potential for adverse effects on otter due to disturbance during the implementation of the Rehabilitation Plans for the Application Site in the Remedial Phase, and therefore no potential for adverse effects on the integrity of the River Barrow and River Nore SAC, or requirement for mitigation, the following best practice noise reduction measures will be in place.

- The proposed rehabilitation works will have due regard to noise limits and hours of operation (*BS 5228:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites (Parts 1 and 2)*) 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); and
- The proposed activities will be restricted to daylight hours and there will be no requirement for artificial lighting.

6. ASSESSMENT OF RESIDUAL ADVERSE EFFECTS

The sections provided below detail the site-specific residual impact assessment in relation to the QIs of The Long Derries, Edenderry SAC and the River Barrow and River Nore SAC in light of their conservation objectives. The assessment takes into consideration measures contained within the IPC Licence to avoid impacts on water quality within and downstream of the Application Site, as well as control measures implemented by the Applicant prior to and outside of the IPC Licence. The River Barrow and River Nore SAC was first designated in 2002 and, as such, peat extraction and ancillary activities at the Application Site were regulated under the IPC Licence prior to its designation. The Long Derries, Edenderry SAC was first designated in 1997 and, while this predates the regulation of activities under the IPC Licence in 2000, control measures were in place at the Application Site during this period.

6.1 The Long Derries, Edenderry SAC

The potential for residual adverse effects on each of the individual QIs that were identified as being at risk of potential effects in Section 2 above is assessed in this section in view of the Conservation Objectives of those habitats and species.

6.1.1 Semi-natural Dry Grasslands and Scrubland Facies on Calcareous Substrates (Festuco-Brometalia) (Important Orchid Sites) [6210]

The site-specific conservation objective for this QI is:

'To restore the favourable conservation condition of Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (important orchid sites) in The Long Derries, Edenderry SAC'*

The attributes and targets for this species as per the site-specific conservation objectives (NPWS, 2021) were reviewed and an assessment of all peat extraction and ancillary activities at the Application Site against the attributes and targets is provided in Table 6-1.

Table 6- 1 Targets and attributes associated with the conservation objectives for Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites)

Attribute	Target	Assessment
Habitat area	Area stable or increasing, subject to natural processes	Peat extraction and ancillary activities did not occur within areas of the qualifying interest habitat. No potential for adverse effects on the area of the qualifying interest habitat to have occurred during the Peat Extraction Phase or Current Phase was identified. There is no potential for adverse effects on habitat area as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Habitat distribution	No decline, subject to natural processes	Peat extraction and ancillary activities did not occur within areas of the qualifying interest habitat. No potential for adverse effects on the area of the qualifying interest habitat to have occurred during the Peat Extraction Phase or Current Phase was identified. There is no potential for adverse effects on habitat area as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Vegetation composition: positive indicator species	At least 7 positive indicator species present in monitoring stop or, if 5–6 present in stop, additional species within 20m of stop; this includes at least two 'high quality' positive indicator species present in stop or within 20m of stop	Peat extraction and ancillary activities did not occur within areas of the qualifying interest habitat. The control measures in place throughout the Peat Extraction Phase and Current Phase minimised the potential for adverse effects on the composition of positive indicator species within the qualifying interest habitat. There is no potential for adverse effects on positive indicator species to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of positive indicator species as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Vegetation composition: negative indicator species	Negative indicator species collectively not more than 20% cover, with cover of an individual species not more than 10%	Peat extraction and ancillary activities did not occur within areas of the qualifying interest habitat. The control measures in place throughout the Peat Extraction Phase and Current Phase minimised the potential for spread of negative indicator species from disturbed areas into the qualifying interest habitat. There is no potential for adverse effects on negative indicator species cover to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of negative indicator species as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Vegetation composition: nonnative species	Cover of non-native species not more than 1%	Peat extraction and ancillary activities did not occur within areas of the qualifying interest habitat. There is no potential for adverse effects due to non-native species cover to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of non-native species as a result of the

Attribute	Target	Assessment
		implementation of the Rehabilitation Plans during the Remedial Phase.
Vegetation composition: woody species and bracken	Cover of woody species (except certain listed species) and bracken (<i>Pteridium aquilinum</i>) not more than 5%	Peat extraction and ancillary activities did not occur within areas of the qualifying interest habitat. The control measures in place throughout the Peat Extraction Phase and Current Phase minimised the potential for adverse effects on vegetation composition within the qualifying interest habitat. There is no potential for adverse effects on this attribute to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of woody species and bracken as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Vegetation structure: broadleaf herb:grass ratio	Broadleaf herb component of vegetation between 40% and 90%	Peat extraction and ancillary activities did not occur within areas of the qualifying interest habitat. The control measures in place throughout the Peat Extraction Phase and Current Phase minimised the potential for adverse effects on vegetation structure within the qualifying interest habitat. There is no potential for adverse effects on this attribute to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of broadleaf herb:grass ratio as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Vegetation structure: sward height	At least 30% of sward between 5cm and 40cm tall	Peat extraction and ancillary activities did not occur within areas of the qualifying interest habitat. The control measures in place throughout the Peat Extraction Phase and Current Phase minimised the potential for adverse effects on sward height within the qualifying interest habitat. There is no potential for adverse effects on this attribute to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of sward height as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Vegetation structure: litter	Litter cover not more than 25%	Peat extraction and ancillary activities did not occur within areas of the qualifying interest habitat. Peat extraction and ancillary activities at the Application Site have no direct pathway for adverse effects on litter cover within the qualifying interest habitat. There is no potential for adverse effects on this attribute to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of litter cover as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.

Attribute	Target	Assessment
Physical structure: bare soil	Not more than 10% bare soil	Peat extraction and ancillary activities did not occur within areas of the qualifying interest habitat. The control measures in place throughout the Peat Extraction Phase and Current Phase minimised the potential for encroachment of machinery or infrastructure into the qualifying interest habitat and associated creation of bare soil. There is no potential for adverse effects on this attribute to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of bare soil as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Physical structure: grazing or disturbance	Area of the habitat showing signs of serious grazing or disturbance less than 20m ²	Grazing is not associated with peat extraction and ancillary activities at the Application Site. With respect to disturbance, the control measures in place throughout the Peat Extraction Phase and Current Phase minimised the potential for encroachment of machinery or infrastructure into the qualifying interest habitat and associated physical disturbance. There is no potential for adverse effects on this attribute in respect of disturbance to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of disturbance as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.

6.1.1.1 **Determination on Potential for Adverse Effects on Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (important orchid sites) [6210]**

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects to have occurred on the **QI** habitat associated with The Long Derries, Edenderry SAC, as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase and Current Phase.

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects on the **QI** semi-natural dry grasslands and scrubland facies on calcareous substrates associated with The Long Derries, Edenderry SAC as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.

No potential for adverse effects on the integrity of the SAC in light of its conservation objectives was identified.

6.1.2

Determination of Potential Adverse Effects in The Long Derries, Edenderry SAC

The Long Derries, Edenderry SAC was proposed as a Site of Community Importance in 1997. Control measures in respect of dust management and the preservation of vegetation and tree cover on bog fringes were in place at the Application Site throughout the Peat Extraction Phase. Since 2000, peat extraction and ancillary activities at the Application Site have been regulated under IPC Licence Registration No. P0503-01. Peat extraction and ancillary activities did not occur within areas of the qualifying interest habitat and, with the control measures in place throughout the Peat Extraction Phase and Current Phase, there is no potential for adverse effects on the qualifying interest habitat of the SAC to have occurred.

Following an examination, evaluation and analysis, in light of best scientific knowledge, and, on the basis of objective information, it can be concluded that there is no potential for adverse effects on the Long Derries, Edenderry SAC to have occurred as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase, Current Phase and Remedial Phase.

There is no potential for adverse effects on the SAC as a result of the implementation of the Rehabilitation Plans for the Application Site.

6.2

River Barrow and River Nore SAC

The potential for residual adverse effects on each of the individual QIs that were identified as being at risk of potential effects in Section 2 above is assessed in this section in view of the Conservation Objectives of those habitats and species.

6.2.1

Desmoulin's Whorl Snail *Vertigo moulinsiana* [1016]

The site-specific conservation objective for this QI is:

'To maintain the Favourable conservation condition of Desmoulin's whorl snail in the River Barrow and River Nore SAC'

The attributes and targets for this species as per the site-specific conservation objectives (NPWS, 2025) were reviewed and an assessment of peat extractions and ancillary activities at the Application Site against the attributes and targets is provided in Table 6-2.

Table 6-2 Targets and attributes associated with nominated site-specific conservation objectives for Desmoulin's whorl snail [1016]

Attribute	Target	Assessment
Distribution: occupied sites	No decline. Two known sites: Borris Bridge, Co. Carlow S711503; Boston Bridge, Kilnaseer S338774, Co. Laois	There were no barriers to access to watercourses as a result of peat extraction activities and all ancillary works. Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on Desmoulin's whorl snail in respect of distribution to have occurred during the Peat Extraction Phase or Current Phase.

Attribute	Target	Assessment
		There is no potential for adverse effects on Desmoulin's whorl snail in respect of distribution as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Population size: adults	At least 5 adult snails in at least 50% of samples	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on Desmoulin's whorl snail in respect of population size of adults to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of population size of adults as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Population density	Adult snails present in at least 60% of samples per site	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on Desmoulin's whorl snail in respect of population density to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects on Desmoulin's whorl snail in respect of population density as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Area of Occupancy	Minimum of 1ha of suitable habitat per site	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on Desmoulin's whorl snail in respect of area of occupancy to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects on Desmoulin's whorl snail in respect of area of occupancy as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Habitat quality: vegetation	90% of samples in habitat classes I and II	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have

Attribute	Target	Assessment
		been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on Desmoulin's whorl snail in respect of quality of habitat vegetation to have occurred during the Peat Extraction Phase or Current Phase. The implementation of the Rehabilitation Plans will have a long-term positive effect on downstream quality of habitat vegetation. There is no potential for adverse effects in respect of habitat quality as a result of the Remedial Phase.
Habitat quality: soil moisture levels	90% of samples in moisture class 3-4	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on Desmoulin's whorl snail in respect of soil moisture levels to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of soil moisture levels as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.

6.2.1.1 Determination on Potential for Adverse Effects on Desmoulin's whorl snail *Vertigo moulinsiana* [1016]

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects to have occurred on the QI Desmoulin's whorl snail associated with the River Barrow and River Nore SAC, as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase and Current Phase.

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects on the QI Desmoulin's whorl snail associated with the River Barrow and River Nore SAC as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.

No potential for adverse effects on the integrity of the SAC in light of its conservation objectives was identified.

6.2.2 White-clawed Crayfish *Austropotamobius pallipes* [1092]

The site-specific conservation objective for this QI is:

'To maintain the Favourable conservation condition of White-clawed crayfish in the River Barrow and River Nore SAC'

The attributes and targets for this species as per the site-specific conservation objectives (NPWS, 2025) were reviewed and an assessment of peat extractions and ancillary activities at the Application Site against the attributes and targets is provided in Table 6-3.

Table 6-3 Targets and attributes associated with nominated site-specific conservation objectives for White-clawed Crayfish [1029]

Attribute	Target	Assessment
Distribution	No reduction from baseline. See map 7	There were no barriers to access to watercourses as a result of peat extraction activities and all ancillary works. Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on white-clawed crayfish in respect of distribution to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects on white-clawed crayfish in respect of distribution as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Population structure: recruitment	Juveniles and/or females with eggs in at least 50% of positive samples	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on white-clawed crayfish in respect of population structure and recruitment to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of population structure and recruitment as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Negative indicator species	No alien crayfish species	Peat extraction and ancillary activities at the Application Site have no pathway for introduction of alien crayfish species to the SAC. There is no potential for adverse effects in respect of this attribute during any phase of the Project.
Disease	No instances of disease	Peat extraction and ancillary activities at the Application Site have no pathway for introduction of crayfish plague or other disease to the SAC. There is no potential for adverse effects in respect of this attribute during any phase of the Project.
Water quality	At least Q3-4 at all sites sampled by EPA	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses.

Attribute	Target	Assessment
		There is no potential for adverse effects on white-clawed crayfish in respect of water quality to have occurred during the Peat Extraction Phase or Current Phase. The implementation of the Rehabilitation Plans will have a long-term positive effect on downstream water quality. There is no potential for adverse effects in respect of water quality as a result of the Remedial Phase.
Habitat quality: heterogeneity	No decline in heterogeneity or habitat quality	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on white-clawed crayfish in respect of habitat quality to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of habitat quality as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.

6.2.2.1 **Determination on Potential for Adverse Effects on White-clawed Crayfish *Austropotamobius pallipes* [1092]**

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects to have occurred on the QI white-clawed crayfish associated with the River Barrow and River Nore SAC, as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase and Current Phase.

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects on the QI white-clawed crayfish associated with the River Barrow and River Nore SAC as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.

No potential for adverse effects on the integrity of the SAC in light of its conservation objectives was identified.

6.2.3 **Sea Lamprey *Petromyzon marinus* [1095]**

The site-specific conservation objective for this QI is:

‘To restore the Favourable conservation condition of Sea lamprey in the River Barrow and River Nore SAC’

The attributes and targets for this habitat as per the site-specific conservation objectives (NPWS, 2025) were reviewed and an assessment of peat extractions and ancillary activities at the Application Site against the attributes and targets is provided in Table 6-4.

Table 6-4 Targets and attributes associated with nominated site-specific conservation objectives for Sea Lamprey [1095]

Attribute	Target	Assessment
Distribution: extent of anadromy	Greater than 75% of main stem length of rivers accessible from estuary	There were no barriers to access to watercourses as a result of peat extraction and ancillary activities at the Application Site. Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on sea lamprey in respect of distribution to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects on sea lamprey in respect of distribution as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Population structure of juveniles	At least three age/size groups present	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on sea lamprey in respect of population structure of juveniles to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of population structure of juveniles as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Juvenile density in fine sediment	Juvenile density at least 1/m ²	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on sea lamprey in respect of juvenile density in fine sediment to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of juvenile density in fine sediment as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Extent and distribution of spawning habitat	No decline in extent and distribution of spawning beds	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on sea

Attribute	Target	Assessment
		lamprey in respect of extent and distribution of spawning habitat to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of extent and distribution of spawning habitat as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Availability of juvenile habitat	More than 50% of sample sites positive	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on sea lamprey in respect of availability of juvenile habitat to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of availability of juvenile habitat as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.

6.2.3.1 Determination on Potential for Adverse Effects on Sea Lamprey *Petromyzon marinus* [1095]

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects to have occurred on the QI sea lamprey associated with the River Barrow and River Nore SAC, as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase and Current Phase.

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects on the QI sea lamprey associated with the River Barrow and River Nore SAC as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.

No potential for adverse effects on the integrity of the SAC in light of its conservation objectives was identified.

6.2.4 Brook Lamprey *Lampetra planeri* [1096]

The site-specific conservation objective for this QI is:

‘To restore the favourable conservation condition of Brook lamprey in the River Barrow and River Nore SAC’

The attributes and targets for this habitat as per the site-specific conservation objectives (NPWS, 2025) were reviewed and an assessment of peat extractions and ancillary activities at the Application Site against the attributes and targets is provided in Table 6-5.

Table 6-5 Targets and attributes associated with nominated site-specific conservation objectives for Brook Lamprey [1026]

Attribute	Target	Assessment
Distribution	Access to all watercourses down to first order streams	There were no barriers to access to watercourses as a result of peat extraction and ancillary activities at the Application Site. Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on brook lamprey in respect of distribution to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects on brook lamprey in respect of distribution as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Population structure of juveniles	At least three age/size groups of brook/river lamprey present	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on brook lamprey in respect of population structure of juveniles to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of population structure of juveniles as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Juvenile density in fine sediment	Mean catchment juvenile density of brook/river lamprey at least 2/m ²	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on brook lamprey in respect of juvenile density in fine sediment to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of juvenile density in fine sediment as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Extent and distribution of spawning habitat	No decline in extent and distribution of spawning beds	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on brook lamprey in respect of extent and distribution of

Attribute	Target	Assessment
		spawning habitat to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of extent and distribution of spawning habitat as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Availability of juvenile habitat	More than 50% of sample sites positive	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on brook lamprey in respect of availability of juvenile habitat to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of availability of juvenile habitat as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.

6.2.4.1 Determination on Potential for Adverse Effects on Brook Lamprey *Lampetra planeri* [1096]

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects to have occurred on the QI brook lamprey associated with the River Barrow and River Nore SAC, as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase and Current Phase.

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects on the QI brook lamprey associated with the River Barrow and River Nore SAC as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.

No potential for adverse effects on the integrity of the SAC in light of its conservation objectives was identified.

6.2.5 River Lamprey *Lampetra fluviatilis* [1099]

The site-specific conservation objective for this QI is:

‘To restore the Favourable conservation condition of River lamprey in the River Barrow and River Nore SAC’

The attributes and targets for this habitat as per the site-specific conservation objectives (NPWS, 2025) were reviewed and an assessment of peat extractions and ancillary activities at the Application Site against the attributes and targets is provided in Table 6-6.

Table 6-6 Targets and attributes associated with nominated site-specific conservation objectives for River Lamprey [1099]

Attribute	Target	Assessment
Distribution: extent of anadromy	Greater than 75% of main stem and major tributaries down to second order accessible from estuary	There were no barriers to access to watercourses as a result of peat extraction and ancillary activities at the Application Site. Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on river lamprey in respect of distribution to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects on river lamprey in respect of distribution as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Population structure of juveniles	At least three age/size groups of river/brook lamprey present	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on river lamprey in respect of population structure of juveniles to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of population structure of juveniles as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Juvenile density in fine sediment	Mean catchment juvenile density of brook/river lamprey at least 2/m ²	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on river lamprey in respect of juvenile density in fine sediment to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of juvenile density in fine sediment as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Extent and distribution of spawning habitat	No decline in extent and distribution of spawning beds	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on river

Attribute	Target	Assessment
		lamprey in respect of extent and distribution of spawning habitat to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of extent and distribution of spawning habitat as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Availability of juvenile habitat	More than 50% of sample sites positive	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on river lamprey in respect of availability of juvenile habitat to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of availability of juvenile habitat as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.

6.2.5.1 Determination on Potential for Adverse Effects on River Lamprey *Lampetra fluviatilis* [1099]

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects to have occurred on the QI river lamprey associated with the River Barrow and River Nore SAC, as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase and Current Phase.

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects on the QI river lamprey associated with the River Barrow and River Nore SAC as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.

No potential for adverse effects on the integrity of the SAC in light of its conservation objectives was identified.

6.2.6 Twaite Shad *Alosa fallax fallax* [1103]

The site-specific conservation objective for this QI is:

‘To restore the favourable conservation condition of Twaite shad in the River Barrow and River Nore SAC’

The attributes and targets for this habitat as per the site-specific conservation objectives (NPWS, 2025) were reviewed and an assessment of peat extractions and ancillary activities at the Application Site against the attributes and targets is provided in Table 6-7.

Table 6- 7 Targets and attributes associated with nominated site-specific conservation objectives for Twaite Shad [1103]

Attribute	Target	Assessment
Distribution: extent of anadromy	Greater than 75% of main stem length of rivers accessible from estuary	There were no barriers to access to watercourses as a result of peat extraction and ancillary activities at the Application Site. Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on twaite shad in respect of distribution to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects on twaite shad in respect of distribution as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Population structure: age classes	More than one age class present	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on twaite shad in respect of population structure to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of population structure as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Extent and distribution of spawning habitat	No decline in extent and distribution of spawning habitats	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on twaite shad in respect of extent and distribution of spawning habitat to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of extent and distribution of spawning habitat as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Water quality: oxygen levels	No lower than 5mg/l	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on twaite

Attribute	Target	Assessment
		shad in respect of water quality to have occurred during the Peat Extraction Phase or Current Phase. The implementation of the Rehabilitation Plans will have a long-term positive effect on downstream water quality. There is no potential for adverse effects in respect of water quality as a result of the Remedial Phase.
Spawning habitat quality: Filamentous algae; macrophytes; sediment	Maintain stable gravel substrate with very little fine material, free of filamentous algal (macroalgae) growth and macrophyte (rooted higher plants) growth	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses, including control of suspended sediment concentrations via silt ponds and emission limit values for suspended solids under the IPC Licence. There is no potential for adverse effects on twaite shad in respect of spawning habitat quality to have occurred during the Peat Extraction Phase or Current Phase. The implementation of the Rehabilitation Plans will have a long-term positive effect on suspended sediment and nutrient loading to downstream watercourses. There is no potential for adverse effects in respect of spawning habitat quality as a result of the Remedial Phase.

6.2.6.1 Determination on Potential for Adverse Effects on Twaite Shad *Alosa fallax fallax* [1103]

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects to have occurred on the QI twaite shad associated with the River Barrow and River Nore SAC, as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase and Current Phase.

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects on the QI twaite shad associated with the River Barrow and River Nore SAC as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.

No potential for adverse effects on the integrity of the SAC in light of its conservation objectives was identified.

6.2.7 Salmon *Salmo salar* [1106]

The site-specific conservation objective for this QI is:

‘To restore the favourable conservation condition of Salmon in the River Barrow and River Nore SAC’

The attributes and targets for this habitat as per the site-specific conservation objectives (NPWS, 2025) were reviewed and an assessment of peat extractions and ancillary activities at the Application Site against the attributes and targets is provided in Table 6-8.

Table 6-8 Targets and attributes associated with nominated site-specific conservation objectives for Salmon [1106]

Attribute	Target	Assessment
Distribution: extent of anadromy	100% of river channels down to second order accessible from estuary	There were no barriers to access to watercourses as a result of peat extraction and ancillary activities at the Application Site. Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on salmon in respect of distribution to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects on salmon in respect of distribution as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Adult spawning fish	Conservation limit (CL) for each system consistently exceeded	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on salmon in respect of adult spawning fish to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of adult spawning fish as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Salmon fry abundance	Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry/5 min sampling	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on salmon in respect of fry abundance to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of fry abundance as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Out-migrating smolt abundance	No significant decline	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the

Attribute	Target	Assessment
		designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on salmon in respect of out-migrating smolt abundance to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of out-migrating smolt abundance as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Number and distribution of redds	No decline in number and distribution of spawning redds due to anthropogenic causes	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses, including control of suspended sediment concentrations via silt ponds and emission limit values for suspended solids under the IPC Licence. There is no potential for adverse effects on salmon in respect of number and distribution of redds to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of number and distribution of redds as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Water quality	At least Q4 at all sites sampled by EPA	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on salmon in respect of water quality to have occurred during the Peat Extraction Phase or Current Phase. The implementation of the Rehabilitation Plans will have a long-term positive effect on downstream water quality. There is no potential for adverse effects in respect of water quality as a result of the Remedial Phase.

6.2.7.1 Determination on Potential for Adverse Effects on Salmon *Salmo salar* [1106]

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects to have occurred on the QI salmon associated with the River Barrow and River Nore SAC, as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase and Current Phase.

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects on the QI salmon associated with the River Barrow and River Nore SAC as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.

No potential for adverse effects on the integrity of the SAC in light of its conservation objectives was identified.

6.2.8 Otter *Lutra lutra* [1355]

The site-specific conservation objective for this QI is:

‘To restore the favourable conservation condition of Otter in the River Barrow and River Nore SAC’

The attributes and targets for this habitat as per the site-specific conservation objectives (NPWS, 2025) were reviewed and an assessment of peat extractions and ancillary activities at the Application Site against the attributes and targets is provided in Table 6-9.

Table 6-9 Targets and attributes associated with nominated site-specific conservation objectives for Otter [1355]

Attribute	Target	Assessment
Distribution	No significant decline	Although otter could utilise the watercourses within or adjacent to the Application Site for commuting and foraging, the Application Site does not provide optimal habitat for otter. Since the regulation of peat extractions and ancillary activities works at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality. There is no potential for adverse effects on the distribution of otter to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects on otter in respect of water quality as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.
Extent of terrestrial habitat	No significant decline. Area mapped and calculated as 122.8ha above high water mark (HWM); 1136.0ha along river banks / around ponds	Although otter likely utilise the watercourses within or adjacent to the Application Site for commuting and foraging, the Application Site does not provide optimal habitat for otter. More suitable habitat occurs in the watercourses outside the site. Since the European site was designated as a SAC, peat extraction and ancillary activities at the site have predominantly comprised of peat extraction, creation and removal of stockpiles and drain maintenance, which would not have resulted in loss of optimal otter habitat. There is therefore no potential for adverse effects on otter populations associated with the SAC to have occurred due to significant declines in terrestrial or freshwater habitat during the Peat Extraction Phase or Current Phase.
Extent of marine habitat	No significant decline. Area mapped and calculated as 857.7ha	
Extent of freshwater (river) habitat	No significant decline. Length mapped and calculated as 616.6km	
Extent of freshwater (lake) habitat	No significant decline. Area mapped and calculated as 2.6ha	

Attribute	Target	Assessment
		There is no potential for adverse effects on otter in respect of extent of habitat extent as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.
Couching sites and holts	No significant decline	Although otter could utilise the watercourses within or adjacent to the Application Site for commuting and foraging, the Application Site does not provide optimal habitat and no evidence of couching sites or holts were recorded during surveys. There is no potential for adverse effects on otter populations associated with the SAC due to significant declines in couching sites to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects on otter in respect of couching sites and holts as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.
Fish biomass available	No significant decline	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality. There is no potential for adverse effects on otter, in respect of fish biomass available, to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects on otter in respect of fish biomass available as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.

6.2.8.1 Determination on Potential for Adverse Effects on Otter *Lutra lutra* [1355]

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects to have occurred on the **QI** otter associated with the River Barrow and River Nore SAC, as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase and Current Phase.

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects on the **QI** otter associated with the River Barrow and River Nore SAC as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.

No potential for adverse effects on the integrity of the SAC in light of its conservation objectives was identified.

6.2.9

Watercourses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation [3260]

The site-specific conservation objective for this QI is:

*'To maintain the Favourable conservation condition of Water courses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation in the River Barrow and River Nore SAC'*

The attributes and targets for this species as per the site-specific conservation objectives (NPWS, 2025) were reviewed and an assessment of the Project against the attributes and targets is provided in Table 6-10.

Table 6-10 Targets and attributes associated with nominated site-specific conservation objectives for Watercourses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation [3260]

Attribute	Target	Assessment
Habitat distribution	No decline, subject to natural processes	Peat extraction and ancillary activities were confined to the boundaries of the Application Site, outside of the areas of the SAC where this habitat is mapped. Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on this habitat in respect of distribution to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of habitat distribution as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Habitat area	Area stable or increasing, subject to natural processes	Peat extraction and ancillary activities were confined to the boundaries of the Application Site, outside of the areas of the SAC where this habitat is mapped. There is no potential for adverse effects on this habitat in respect of habitat area to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of habitat area as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Hydrological regime: river flow	Maintain appropriate hydrological regimes	Drainage commenced at the Application Site in 1935. Following this initial drainage, only minor annual changes in local bog hydrology and hydrogeology associated with the annual removal of peat, deepening of drains and additional drainage in smaller areas of the site would have occurred. No potential for adverse effects on the

Attribute	Target	Assessment
		hydrological regime of this habitat within the SAC as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase or Current Phase was identified. There is no potential for adverse effects in respect of hydrological regime as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Hydrological regime: groundwater discharge	The groundwater flow to the habitat should be permanent and sufficient to maintain tufa formation	Drainage commenced at the Application Site in 1935. Following this initial drainage, only minor annual changes in local bog hydrology and hydrogeology associated with the annual removal of peat, deepening of drains and additional drainage in smaller areas of the site would have occurred. No potential for adverse effects on the groundwater discharge supporting this habitat within the SAC as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase or Current Phase was identified. There is no potential for adverse effects in respect of groundwater discharge as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Substratum composition: particle size range	The substratum should be dominated by large particles and free from fine sediments	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses, including control of suspended sediment concentrations via silt ponds and emission limit values for suspended solids under the IPC Licence. There is no potential for adverse effects on this habitat in respect of substratum composition to have occurred during the Peat Extraction Phase or Current Phase. The implementation of the Rehabilitation Plans will have a long-term positive effect on suspended sediment loading to downstream watercourses. There is no potential for adverse effects in respect of substratum composition as a result of the Remedial Phase.
Water chemistry: minerals	The groundwater and surface water should have sufficient concentrations of minerals to allow deposition and persistence of tufa deposits	Peat extraction and ancillary activities at the Application Site have no pathway for adverse effects on the mineral chemistry of watercourses within the SAC. There is no potential for adverse effects on this habitat in respect of water chemistry during any phase of the Project.
Water quality: suspended sediment	The concentration of suspended solids in the water column should be	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the

Attribute	Target	Assessment
	sufficiently low to prevent excessive deposition of fine sediments	designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses, including control of suspended sediment concentrations via silt ponds and emission limit values for suspended solids under the IPC Licence. There is no potential for adverse effects on this habitat in respect of suspended sediment to have occurred during the Peat Extraction Phase or Current Phase. The implementation of the Rehabilitation Plans will have a long-term positive effect on suspended sediment loading to downstream watercourses. There is no potential for adverse effects in respect of suspended sediment as a result of the Remedial Phase.
Water quality: nutrients	The concentration of nutrients in the water column should be sufficiently low to prevent changes in species composition or habitat condition	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on this habitat in respect of nutrients to have occurred during the Peat Extraction Phase or Current Phase. The implementation of the Rehabilitation Plans will have a long-term positive effect on nutrient loading to downstream watercourses. There is no potential for adverse effects in respect of nutrients as a result of the Remedial Phase.
Vegetation composition: typical species	Typical species of the relevant habitat sub-type should be present and in good condition	Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on this habitat in respect of vegetation composition to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of vegetation composition as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Floodplain connectivity	The area of active floodplain at and upstream of the habitat should be maintained	Peat extraction and ancillary activities were confined to the boundaries of the Application Site and have no pathway for adverse effects on floodplain connectivity within the SAC. There is no potential for adverse effects on this habitat in respect of floodplain connectivity to have occurred during the Peat Extraction Phase or Current Phase.

Attribute	Target	Assessment
		There is no potential for adverse effects in respect of floodplain connectivity as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.

6.2.9.1 **Determination on Potential for Adverse Effects on Watercourses of plain to montane levels with the Ranunculus fluitans and Callitriche-Batrachion vegetation [3260]**

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects to have occurred on the **QI** watercourses of plain to montane levels associated with the River Barrow and River Nore SAC, as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase and Current Phase.

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects on the **QI** watercourses of plain to montane levels associated with the River Barrow and River Nore SAC as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.

No potential for adverse effects on the integrity of the SAC in light of its conservation objectives was identified.

6.2.10 **Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]**

The site-specific conservation objective for this **QI** is:

‘To maintain the favourable conservation condition of Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels in the River Barrow and River Nore SAC’

The attributes and targets for this species as per the site-specific conservation objectives (NPWS, 2025) were reviewed and an assessment of the Project against the attributes and targets is provided in Table 6-11.

Table 6-11 Targets and Attributes associated with nominated site-specific conservation objectives for Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]

Attribute	Target	Assessment
Habitat distribution	No decline, subject to natural processes	Peat extraction and ancillary activities were confined to the boundaries of the Application Site, outside of the areas of the SAC where this habitat is mapped. Since the regulation of peat extraction and ancillary activities at the Application Site under IPC Licence in 2000, which predates the designation of the SAC, a range of measures have been in place to ensure there is no deterioration of water quality in downstream watercourses. There is no potential for adverse effects on this habitat in respect of

Attribute	Target	Assessment
		distribution to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of habitat distribution as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Habitat area	Area stable or increasing, subject to natural processes	Peat extraction and ancillary activities were confined to the boundaries of the Application Site, outside of the areas of the SAC where this habitat is mapped. There is no potential for adverse effects on this habitat in respect of habitat area to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of habitat area as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Hydrological regime: flooding depth/height of water table	Maintain appropriate hydrological regimes	Drainage commenced at the Application Site in 1935. Following this initial drainage, only minor annual changes in local bog hydrology and hydrogeology associated with the annual removal of peat, deepening of drains and additional drainage in smaller areas of the site would have occurred. No potential for adverse effects on the hydrological regime supporting this habitat within the SAC as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase or Current Phase was identified. There is no potential for adverse effects in respect of hydrological regime as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Vegetation structure: sward height	30-70% of sward is between 40 and 150cm in height	Peat extraction and ancillary activities were confined to the boundaries of the Application Site, outside of the areas of the SAC where this habitat is mapped. There is no potential for adverse effects on this habitat in respect of vegetation structure to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of vegetation structure as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Vegetation composition: broadleaf herb: grass ratio	Broadleaf herb component of vegetation between 40 and 90%	Peat extraction and ancillary activities were confined to the boundaries of the Application Site, outside of the areas of the SAC where this habitat is mapped. There is no potential for adverse effects on this habitat in respect of vegetation composition to have occurred during the Peat Extraction Phase or Current Phase.

Attribute	Target	Assessment
		There is no potential for adverse effects in respect of vegetation composition as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Vegetation composition: typical species	At least 5 positive indicator species present	Peat extraction and ancillary activities were confined to the boundaries of the Application Site, outside of the areas of the SAC where this habitat is mapped. There is no potential for adverse effects on this habitat in respect of typical species to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of typical species as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.
Vegetation composition: negative indicator species	Negative indicator species, particularly non-native invasive species, absent or under control- NB Indian balsam (<i>Impatiens glandulifera</i>), monkeyflower (<i>Mimulus guttatus</i>), Japanese knotweed (<i>Fallopia japonica</i>) and giant hogweed (<i>Heracleum mantegazzianum</i>)	Peat extraction and ancillary activities at the Application Site have no pathway for introduction or spread of invasive non-native species to this habitat within the SAC. There is no potential for adverse effects on this habitat in respect of negative indicator species to have occurred during the Peat Extraction Phase or Current Phase. There is no potential for adverse effects in respect of negative indicator species as a result of the implementation of the Rehabilitation Plans during the Remedial Phase.

6.2.10.1 Determination on Potential for Adverse Effects on Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects to have occurred on the QI hydrophilous tall herb fringe communities associated with the River Barrow and River Nore SAC, as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase and Current Phase.

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects on the QI hydrophilous tall herb fringe communities associated with the River Barrow and River Nore SAC as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.

No potential for adverse effects on the integrity of the SAC in light of its conservation objectives was identified.

6.2.11

Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno- Padion, Alnion incanae, Salicion albae)

The site-specific conservation objective for this QI is:

*‘To restore the Favourable conservation condition of Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) in the River Barrow and River Nore SAC’*

The attributes and targets for this species as per the site-specific conservation objectives (NPWS, 2025) were reviewed and an assessment of the Project against the attributes and targets is provided in Table 6-12.

Table 6-12 Targets and Attributes associated with nominated site-specific conservation objectives for Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*

Attribute	Target	Assessment
Habitat area	Area stable or increasing, subject to natural processes.	Peat extraction and ancillary activities were confined to the boundaries of the Application Site, outside of the SAC. No potential for adverse effects to have occurred on alluvial forest within the SAC, in respect of habitat area or distribution, during the Peat Extraction Phase or Current Phase was identified. There is no potential for adverse effects on alluvial forest in respect of habitat area or distribution as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.
Habitat distribution	No decline	
Woodland size	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size	Peat extraction and ancillary activities were confined to the boundaries of the Application Site, outside of the SAC. No potential for adverse effects to have occurred on alluvial forest within the SAC during the Peat Extraction Phase or Current Phase in respect of woodland size or structure, was identified. There is no potential for adverse effects on alluvial forest in respect of woodland size or structure as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.
Woodland structure: cover and height	Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semimature trees and shrubs; and well-developed herb layer	
Woodland structure: community diversity and extent	Maintain diversity and extent of community types	
Woodland structure: natural regeneration	Seedlings, saplings and pole age-classes occur in adequate proportions to ensure survival of woodland canopy	
Hydrological regime: flooding depth/height of water table	Appropriate hydrological regime necessary for maintenance of alluvial vegetation	Drainage commenced at the Application Site in 1935. Following this initial drainage, only minor annual changes in local bog hydrology and hydrogeology associated with the annual removal of peat, deepening of drains and additional drainage in smaller areas of the site

Attribute	Target	Assessment
		would have occurred (refer to Chapter 8 of the rEIAR in Appendix 5 of this rNIS). No potential for adverse effects on hydrological regime in the SAC as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase or Current Phase was identified. There is no potential for adverse effects on alluvial forest in respect of habitat hydrological regime as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.
Woodland structure: dead wood	At least 30m ³ /ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter (greater than 20cm diameter in the case of alder)	Peat extraction and ancillary activities were confined to the boundaries of the Application Site, outside of the SAC. No potential for adverse effects to have occurred on alluvial forest within the SAC, in respect of woodland structure, during the Peat Extraction Phase or Current Phase was identified. There is no potential for adverse effects on alluvial forest in respect of woodland structure as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.
Woodland structure: veteran trees	No decline	
Woodland structure: indicators of local distinctiveness.	No decline	
Vegetation composition: native tree cover	No decline. Native tree cover not less than 95%	Peat extraction and ancillary activities were confined to the boundaries of the Application Site, outside of the SAC. No potential for adverse effects to have occurred on alluvial forest within the SAC, in respect of vegetation composition, during the Peat Extraction Phase or Current Phase was identified. There is no potential for adverse effects on alluvial forest in respect of vegetation composition as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.
Vegetation composition: typical species	A variety of typical native species present, depending on woodland type, including ash (<i>Fraxinus excelsior</i>) alder (<i>Alnus glutinosa</i>), willows (<i>Salix</i> spp) and locally, oak (<i>Quercus robur</i>)	
Vegetation composition: negative indicator species	Negative indicator species, particularly non-native invasive species, absent or under control	

6.2.11.1 Determination on Potential for Adverse Effects on White-clawed Crayfish *Austropotamobius pallipes* [1092]

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects to have occurred on the QI white-clawed crayfish associated with the River Barrow and River Nore SAC, as a result of peat extraction and ancillary activities at the Application Site during the Peat Extraction Phase and Current Phase.

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information, that there is no potential for adverse effects on the QI alluvial forests associated with the River Barrow and River Nore SAC as a result of the implementation of the Rehabilitation Plans for the Application Site during the Remedial Phase.

No potential for adverse effects on the integrity of the SAC in light of its conservation objectives was identified.

6.2.12 Determination on Potential Adverse Effects in the River Barrow and River Nore SAC

The regulation of peat extractions and ancillary activities under IPC Licence predates the designation of the River Barrow and River Nore SAC which was designated in 2002. Since the regulation of peat extractions and ancillary activities at the Application Site under IPC licence, and the compliance with the Licence conditions by the Applicant over a 20-year monitoring period, there is no potential for adverse effects on water quality to have occurred and therefore no potential for adverse effects on the SAC and its QI species or habitats to have occurred or to occur in the future as a result the Peat Extraction Phase, Current Phase and Remedial Phase.

Following an examination, evaluation and analysis, in light of best scientific knowledge, and, on the basis of objective information, it can be concluded that there is no potential for adverse effects on the River Barrow and River Nore SAC to have occurred as a result of peat extractions and ancillary activities at the Application Site during the Peat Extraction Phase, Current Phase and Remedial Phase.

There is no potential for adverse effects on the SAC as a result of the implementation of the Rehabilitation Plans for the Application Site.

6.3 Conclusion of Impact Assessment

Following an examination, evaluation and analysis, in light of best scientific knowledge and the conservation objectives of the site, and, on the basis of objective information, it can be concluded that there is no potential for adverse effects on the integrity of any European Site to have occurred as a result of peat extractions and ancillary activities (i.e. Peat Extraction Phase, Current Phase and Remedial Phase) at the Application Site.

Since the year 2000, peat extractions and ancillary activities at the Application Site have been regulated under IPC Licence, the conditions of which include a range of measures to ensure the protection of water quality. In addition, control measures in respect of dust management and the preservation of vegetation on bog fringes were in place at the Application Site throughout the Peat Extraction Phase. The River Barrow and River Nore SAC was designated in 2002 and, as such, peat extractions and ancillary activities at the Application Site were regulated under the IPC Licence prior to its designation. The Long Derries, Edenderry SAC was first designated in 1997 and, while this predates the regulation of activities under the IPC Licence in 2000, control measures were in place at the Application Site during this period. Given the control measures in place prior to the IPC Licence and subsequent regulation of activities under IPC Licence, there is no potential for the peat extractions and ancillary activities at the Application Site to have had an adverse effect on the integrity of any European Site. As part of the IPC Licence, there is a limit of 35mg/l for suspended solids. Monitoring only recorded 6 no. exceedances at the Application Site from a total of 226 no. samples from 2000 to 2025). (refer to Chapter 8 of the accompanying rEIAR, which is included as Appendix 5 of this rNIS).

The conditions within the IPC Licence, and compliance with the conditions over a 20 year period, ensure that there is no potential for adverse effects on water quality to have occurred and no potential for adverse effects on the integrity of the above European Sites, in light of their conservation objectives, to have occurred in this regard as a result of peat extractions and ancillary activities during the Peat Extraction Phase, Current Phase and Remedial Phase.

There is no potential for peat extractions and ancillary activities during the Peat Extraction Phase, Current Phase and Remedial Phase to have had a adverse effect on otter as a result of disturbance for the reasons outlined in the sections above.

There is no potential for adverse effects on the integrity of any European Site as a result of the implementation of the Rehabilitation Plans for the Application Site.

Following an examination, evaluation and analysis, in light of best scientific knowledge, and, on the basis of objective information, it can be concluded that there is no potential for adverse effects on the integrity of any European Site to have occurred or to occur as a result of the Project at the Application Site.

7. IN COMBINATION EFFECTS

A search and review in relation to plans and projects that may have the potential to result in cumulative and in-combination impacts on European Sites was conducted. This assessment focuses on the potential for cumulative in-combination effects on the European Sites where potential for adverse effects was identified at the screening stage (Appendix 1). This included a review of online Planning Registers, development plans and other available information and served to identify past and future plans and projects, their activities and their predicted environmental effects.

7.1 Plans

The following development plans have been reviewed and taken into consideration as part of this assessment, those marked as partial had only incomplete County Development Plans available:

- Offaly County Development Plan 2021 – 2027
- Offaly County Development Plan 2014 – 2020
- Offaly County Development Plan 2009 – 2015
- Offaly County Development Plan 2003 – 2009
- Offaly County Development Plan 1995
- Kildare County Development Plan 2023-2029
- Kildare County Development Plan 2017-2023
- Kildare County Development Plan 2011-2023
- Kildare County Development Plan 2005-2011
- Kildare County Development Plan 1999-2005
- National Biodiversity Plan 2002–2006
- National Biodiversity Action Plan 2011–2016
- National Biodiversity Action Plan 2017–2021
- Ireland's 4th National Biodiversity Action plan 2023-2030.
- Offaly Biodiversity Action Plan 2025-2030
- Kildare County Council Draft Biodiversity Action Plan 2026-2031

The review focused on policies and objectives that relate to designated sites for nature conservation from 1997 (when the Long Derries, Edenderry SAC was first designated) Policies and objectives relating to the conservation of peatlands and sustainable land use were also reviewed, particularly where the policies relate to the preservation of surface water quality. An overview of the search results with regard to plans is provided in Table 7-1 Assessment of Plans.

Table 7-1 Assessment of Plans

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
Offaly County Development Plan 2021 - 2027	The Strategic Vision of the Development Plan has been identified: <i>To create a sustainable and competitive county that supports the health and wellbeing of our people and places, from urban to rural, with access to employment opportunities supported by high quality housing and physical, social and community infrastructure for all, in a climate resilient manner and with respect for our biodiversity</i> The policies concerning peatlands in the Offaly County Development Plan 2021-2027 are as follows: • CAEP-16 It is Council policy to support the preparation of a comprehensive after use framework plan for the industrial peatlands and associated workshops, office buildings and industrial sites in the midlands and adjacent parts of the north west and southern regions, which meets the environmental, economic and social needs of communities in these areas, and also demonstrating leadership in climate change mitigation and land stewardship. The Council recognises that the industrial peatlands in the midlands are a significant resource will transition to after uses ranging from amenity, tourism, biodiversity services, 'wild areas', flood management, climate mitigation, energy development, industry, education, conservation and many more. • CAEP-17 It is Council policy to investigate the potential for a Green Energy Hub on peatlands in the county and facilitate it if possible. • CAEP-18 It is Council policy to investigate the feasibility of an energy park with educational and amenity facilities relating to any future development of renewable energy projects of significant scale that comes forward over the lifetime of this Plan. Any development of renewable energy on cutaway bog will be required to provide increased opportunities for amenity access and educational facilities. • CAEP-19 It is Council policy that planning applications for development on or immediately adjacent to peatlands shall be accompanied by assessments considering the following issues where relevant; peatland stability, hydrology, carbon emissions balance and ecological impact assessment.	The Plans were comprehensively reviewed, with particular reference to Policies and Objectives that relate to European Sites. The potential for peat extractions and ancillary activities, which were undertaken at different times and at different levels of intensity throughout the bog between 1997 (when the Long Derries, Edenderry SAC was first designated) and 2020, and between 2002 (when the River Barrow and River Nore SAC was first designated) and 2020, to result in adverse effects on European Sites was assessed. No potential for adverse effects on the integrity of any European Site in light of their conservation objectives was identified, and therefore historic peat extractions and ancillary activities are not considered to be in contravention of the policies and objectives within the development plans. The ongoing operations such as peat extractions and ancillary activities since 1994, which were undertaken at different times and at different levels of intensity throughout the bog, are unlikely to have resulted in adverse effects on the integrity of any European Site and are therefore not considered to be in contravention of the policies and objectives within the plan.

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
	• CAEP-20 It is Council policy to support the implementation of any relevant recommendations contained in the National Peatlands Strategy 2015 and any subsequent revisions. • CAEO-06 It is an objective of the Council to source E.U. and national funding to support projects which assist the transition of the industrial peatlands to sustainable after uses. • CAEO-07 It is an objective of the Council to ensure that renewable energy projects located on peatlands or in close proximity to peatlands do not negatively impact on any rehabilitation measures including enhanced rehabilitation measures (i.e. drain blocking and rewetting). • BLP-14 It is Council policy to protect the county's designated peatland areas and landscapes, including any historical walkways through bogs and to conserve their ecological, archaeological and cultural heritage and to develop educational heritage. • BLP-17 It is Council policy to support the National Parks and Wildlife Service in carrying out an EU LIFE fund supported raised bog restoration project in restoring the following Special Areas of Conservation sites in the county to favourable conservation status: ○ Clara Bog; ○ Ferbane Bog; ○ Mongan Bog; ○ Moyclare Bog; ○ Raheenmore Bog; and ○ Sharavogue Bog. • BLP-18 It is Council policy to support collaboration between Offaly County Council, Regional Transition Team and relevant stakeholders of a partnership approach to integrated peatland management for a just transition that incorporates the management, rehabilitation and restoration / re-wetting of significant tracts of peatlands in conjunction with appropriate developed after uses.	The implementation of the Rehabilitation Plans for the Application Site will not have an adverse effect on the integrity of any European Site and is in compliance with the policies and objectives outlined within the plan.
Offaly County Development Plan 2014-2020	• Chapter 2: Economic and Enterprise Strategy ➤ 'It is Council policy to actively encourage the redevelopment of brownfield sites for enterprise and employment creation throughout the county, in particular, sites with antecedent uses or disused sites which were formerly ESB plants and Bord na Móna work' (Entp-07). ➤ It is Council Policy to encourage expansion and employment in industries such as agriculture, horticulture, peatlands, food, craft, tourism and energy' (RDP-11). ➤	

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	➤ The County Development Plan also recognises the potential of cutaway bog sites for wind energy development. • Chapter 3: Energy Strategy ➤ ‘The characteristics of cutaway bog appear to be particularly suitable for wind development. The individual sites on cutaway bogs are large and generally uninterrupted by hedgerows, streams, or other natural features. Many are already connected to each other via corridors i.e. bog railway routes, which will allow for transmission infrastructure and roadways to be built between sites, avoiding impacts on the public road in terms of traffic or visual impact. The areas where peatlands occur have a low density road network and are traditionally sparsely populated, and while they have not completely avoided sporadic urban generated one-off housing, they are the least densely populated areas of the county’	
Offaly County Development Plan 2009-2015	The Offaly County Development Plan 2008-2015 was adopted on January 19th 2009, replacing the Offaly County Development Plan 2003-2009. At the time of the writing of the 2009-2025 CDP, ‘after use’ of cut away bogs and alternative development of cutaway bogs are being considered in the future planning and sustainable development of the county. • Chapter 3: Overall Strategy <i>‘The Council intends to facilitate proposals for employment generation and services improvement in this part of the county. One important action in this regard is to work closely with Bord na Mona to investigate and facilitate (were appropriate on planning grounds) the re-use and alternative development of cutaway bogs within its ownership for development which will give an employment and economic boost to the county’</i> • Chapter 6: Employment, Economy & Enterprise ➤ The 32,400 ha of peatlands within the ownership of Bord na Mona are highlighted and identified as potential sites for industrial/business type generation, in particular wind/biomass energy generation. Section 6.4 acknowledges and is in favour of re-development of disused sites such as former ESB power stations and Bord na Mona works. P06-11 states: <i>It is Council policy to actively encourage the redevelopment of brownfield sites for enterprise and</i>	

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	<i>employment creation throughout the county, in particular, disused sites which were formerly ESB plants and Bord na Mona works.</i> • Chapter 10 Rural Development ➤ P10-15: It is Council policy to support the development of the peatlands within the county for appropriate alternative uses, subject to environmental considerations and nature designations. • Chapter 12: Environment ➤ The CDP recognises the commitment to the National Climate Change Strategy and seeks to facilitate measures which reduce emissions of greenhouse gasses in accordance with the Kyoto Agreement. The CDP also commits to implementing ‘<i>relevant EU and Irish Legislation pertaining to the environment</i>’ (P12-08). <i>The CDP also commits to co-operating with the EPA in regard to any licencing arrangements for scheduled industries in County Offaly in accordance with the provisions of the Environmental Protection Agency Act 1992 (P12-09).</i> • Chapter 15: Natural Heritage ➤ The CDP notes that peatlands comprise the main topographical feature of the landscape in Offaly and the heritage value associated with them. As such the CDP commits to protecting areas of bogland in line with existing designations. As such the CDP sets an objective to prepare a biodiversity management strategy for Offaly’s peatlands in co-operation with Bord na Móna and other relevant authorities. • Chapter 16 Landscape and Amenities ➤ The preservation of landscape, views and amenities as well as places of natural beauty within the county is set out as a role of the Local Authority. To that effect the Local Authority will ensure that development respects and enhances the appearance and character of existing local landscape. The Landscape Character assessment identifies cut away bog as a moderately sensitive landscape. Lough Boora has been development as a ‘prototype’ parkland area and the CD P reiterates the need to plan for the future use of large areas of cut-away bog within County Offaly. Table 16.4 states that some cut away bog landscapes may be appropriate for sensitively designed and located development including renewable energy and/or industrial use.	

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Offaly County Development Plan 2003-2009	<i>The CDP recognises boglands as a major natural and archaeological resource. The development of this resource and its critical role in employment is also noted. The Council aimed to continue to promote and facilitate the conservation of a representative sample of peatlands and looked to co-operate with Dúchas and the Irish Peatland Conservation Council to have a Bog Conservation Study undertaken the remaining peat resources of County Offaly.</i> Plan for After-use of Industrial Peatlands (Cutaway Bogs) <i>‘The Council will seek the formulation of a comprehensive integrated landuse plan for the future development and utilisation of the large areas of cutaway bog, which now exists in the county. In addition, the plan should cater for development of further areas of cutaway bog, which will arise over the next thirty years as turf/peat production comes to an end of the county’s industrial boglands. There are 32,000 hectares (80,000) of peatland in Bord na Móna ownership in County Offaly. Because of the significant area of land involved, it is important to avoid piecemeal or unco-ordinated use/development of this major resource.’</i>	
Offaly County Development Plan 1995	The Offaly County Development Plan of 1995 recognised the importance of the raised boglands as a major natural resource within the county. The importance of peatlands for employment is clear. The CDP notes a major change in employment over the previous 10 years, owing to job losses at Bord na Móna. The Council state that it is an aim of the CDP to continue to support the development of peatlands for peat production. <i>‘The development of the County’s peat resources will be promoted and facilitated.’</i> However, the CDP also recognises the importance of the conservation and preservation of peat land habitats along with the potential for other peatland uses, such as tourism, amenity, educational and research purposes. The Council set a goal to secure at least 4% of the county’s original peatland area for conservation. While the continued industrialisation of peatland was supported, the Council acknowledged the need to develop a plan for the county’s peatland when turf/peat production comes to an end. The 1995 CDP states:	

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	<i>'The council will seek the formulation of a comprehensive integrated land use plan for the future development and utilization of the large areas of cutaway bog which now exist in the county. In addition, the plan should cater for development of the further areas of cutaway bog which will arise over the next 30 years as turf/peat production comes to an end on the County's industrial boglands. There are 32,400 hectares (80,000 acres) of peatland in Bord na Móna ownership in County Offaly. Because of the significant area of land involved; it is important to avoid piecemeal or uncoordinated use/ development of this major resource.'</i>	
Kildare County Development Plan 2023-2029	It is a policy of the Council to: ➤ BI P2 Seek to contribute to maintaining or restoring the conservation status of all sites designated for nature conservation or proposed for designation in accordance with European and national legislation and agreements. These include Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Natural Heritage Areas (NHAs), Ramsar Sites and Statutory Nature Reserves. ➤ BI P4 Ensure that any new development proposal does not have a significant adverse impact, incapable of satisfactory mitigation on plant, animal or bird species which are protected by law. It is an objective of the Council to: ➤ BI O6 Apply the precautionary principle in relation to proposed developments in environmentally sensitive areas to ensure that all potential adverse impacts on a designated NHA or Natura 2000 Site arising from any proposed development or land use activity are avoided, remedied, or mitigated. ➤ BI O8 Support the implementation of the National Raised Bog Special Areas of Conservation Management Plan 2017-2022. ➤ BI O9 Avoid development that would adversely affect the integrity of any Natura 2000 site and promote favourable conservation status of habitats and protected species including those listed under the Birds Directive, the Wildlife Acts and the Habitats Directive, to support the conservation and enhancement of Natura 2000 Sites including any additional sites that may be proposed for designation during the period of this Plan and protect the Natura 2000 network from any plans and projects that are likely to have a significant effect on the coherence or integrity of a Natura 2000 Site.	The Plans were comprehensively reviewed, with particular reference to Policies and Objectives that relate to European Sites. The potential for peat extractions and ancillary activities, which were undertaken at different times and at different levels of intensity throughout the bog between 1997 (when the Long Derries, Edenderry SAC was first designated) and 2020, and between 2002 (when the River Barrow and River Nore SAC was first designated) and 2020, to result in adverse effects on European Sites was assessed. No potential for adverse effects on the integrity of any European Site in light of their conservation objectives was identified, and therefore historic peat extractions and ancillary activities are not considered to be in contravention of the policies and objectives within the development plans. The ongoing operations such as peat extractions and ancillary activities since 1994, which were undertaken at different times and at different levels of intensity throughout the bog, are unlikely to have resulted in adverse effects on the integrity of any

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	➤ BI O10 Ensure an Appropriate Assessment Screening, in accordance with Article 6(3) and Article 6(4) of the Habitats Directive, Section 177A of the Planning and Development Act (2001-2022) or any superseding legislation and with DEHLG guidance (2009), is carried out in respect of any plan or project not directly connected with or necessary to the management of a Natura 2000 site to determine the likelihood of the plan or project having a significant effect on a Natura 2000 site, either individually or in combination with other plans or projects and to ensure that projects which may give rise to significant cumulative, direct, indirect or secondary impacts on Natura 2000 sites will not be permitted (either individually or in combination with other plans or projects) unless for reasons of overriding public interest. ➤ BI O11 Support the establishment of conservation measures and the preparation and implementation of management plans for the conservation of Natura 2000 sites by NPWS, as required by Article 6(1) of the Habitats Directive. ➤ BI O15 Ensure that any new development proposal does not have a significant adverse impact on rare and threatened species, including those protected under the Wildlife Acts 1976 and 2012, the Birds Directive 1979 the Habitats Directive 1992 and the Flora Protection Order species and any species listed under the national red lists or that could be listed on a national red list. ➤ BI O16 Ensure appropriate species and habitat avoidance and mitigation measures are incorporated into all new development proposals. ➤ BI O17 Require a derogation licence, where necessary, issued by the DHLGH, in the event of a proposed development impacting on a site known to be a breeding or resting site of species listed in the Habitats Directive (Annex IV species). ➤ BI O20 Conserve and protect habitats and species listed in the Annexes of the EU Habitats Directive (92143/EEC) (as amended), the Birds Directive (20091147/EC), Directive Annex 2, the Wildlife Acts 1976 to 2000, The Wildlife Acts 1976 (as amended) and the Flora Protection Order No 94 of 1999. ➤ BI O21 Work with bodies such as the NPWS and National Biodiversity Data Centre to ensure that species for which Kildare is a national stronghold such as Green-Flowered Helleborine Orchid, Yellowhammer and Linnet, which are nationally rare or declining, are supported to flourish and seek to ensure the habitat conditions favourable to such species are retained in the county. ➤ BI O22 Identify and protect areas of high nature conservation value (including but not limited to SAC/SPA/pNHA) and support the landscape features which act as ecological	European Site and are therefore not considered to be in contravention of the policies and objectives within the plan. The implementation of the Rehabilitation Plans for the Application Site will not have an adverse effect on the integrity of any European Site and is in compliance with the policies and objectives outlined within the plan.

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	corridors/networks and stepping-stones, such as river corridors, hedgerows, and road verges so as to minimise the loss of habitats and features of the wider countryside which are of major importance for wild fauna and flora in accordance with Article 10 of the Habitats Directive. ➤ LR O22 Co-operate with the relevant government departments and other statutory bodies in the protection and conservation of the Fen, a designated Special Area of Conservation (SAC) ➤ LR O54 Ensure any proposed walking or cycling route does not significantly impact the following: ○ Special Areas of Conservation (SACs) ○ Special Protection Areas (SPAs) ○ Natural Heritage Areas (NHAs) ○ Other areas of importance for the conservation of flora and fauna. ○ Known sites of Flora Protection Order species ○ Zones of Archaeological Potential. ○ The vicinity of a recorded monument. ○ Sensitive landscape areas as identified in Chapter 13 of this Plan. ○ Scenic views and prospects. ○ Protected Structures. ○ Established rights of way and walking routes.	
Kildare County Development Plan 2017-2023	The Kildare County Development Plan 2017-2023 (KCDP 2017-2023) came into effect 1st March 2017, replacing the Kildare County Development Plan 2011-2017. Policies related to the historical activities at the Application Site are noted below. Chapter 7: Infrastructure <i>“SW 16 Recognise the important role of bogland and other wetland areas in flooding patterns. Development in these areas shall therefore be subject to a Flood Risk Assessment in accordance with the relevant guidance.”</i> Chapter 10: Rural Development <i>“Bórd na Móna has produced a 15-year strategy, Sustainability 2030, which outlines the company’s plan to complete the transition from energy peat production into new sustainable business. The strategy</i>	The Plans were comprehensively reviewed, with particular reference to Policies and Objectives that relate to European Sites. The potential for peat extractions and ancillary activities, which were undertaken at different times and at different levels of intensity throughout the bog between 1997 (when the Long Derries, Edenderry SAC was first designated) and 2020, and between 2002 (when the River Barrow and River Nore SAC was first designated) and 2020, to result in adverse effects on European Sites was assessed. No potential for adverse effects on the integrity of any European Site in light of their conservation

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	<i>recognises the role and responsibility of Bord na Móna in the rehabilitation of its peatlands to an environmentally sustainable condition with a higher biodiversity value.</i> The relevant policies in the KCDP 2017-2023 are as follows: ➤ BL 1 Ensure that a balanced approach is taken to the development of the county's peat resources and the restoration of cutaway bogs, in order to minimise the negative impact on biodiversity and the archaeological and cultural heritage of the county. ➤ BL 2 Seek a balance between the peat extraction potential of the county, whilst ensuring the protection and conservation of bogland habitats. Limiting extraction to those bogland areas currently under development will help to minimise impacts by localising effects and thus protect the bog landscape character areas within the county. ➤ BL 3 Take a balanced approach to the redevelopment of cutaway bogs recognising their significant landscape, environmental and heritage value. Future development should seek to conserve cutaway bogs and maximise their potential for wildlife, biodiversity, conservation and amenity in the first instance, whilst the potential for economic uses such as grassland, forestry and renewable energy in some circumstances is acknowledged, subject to the protection of the environment and landscape character. ➤ BL 4 Liaise with Bord na Móna, the Irish Peatland Conservation Council, Coillte and the National Parks and Wildlife Service of the Department of Housing, Planning, Community and Local Government to ensure the sustainable use of cutaway bogland, with due consideration given to their ecological and amenity value. ➤ BL 5 Seek a Hydrological Report which will also incorporate Flood Risk Assessment in accordance with the Planning Guidelines "The Planning System and Flood Risk Management (2009)" for significant developments within boglands, so as to ensure that the quality of ground or surface water is assessed and mitigation measures identified. This assessment should address the issue of ground and slope stability.	objectives was identified, and therefore historic peat extractions and ancillary activities are not considered to be in contravention of the policies and objectives within the development plans. The ongoing operations such as peat extractions and ancillary activities since 1994, which were undertaken at different times and at different levels of intensity throughout the bog, are unlikely to have resulted in adverse effects on the integrity of any European Site and are therefore not considered to be in contravention of the policies and objectives within the plan. The implementation of the Rehabilitation Plans for the Application Site will not have an adverse effect on the integrity of any European Site and is in compliance with the policies and objectives outlined within the plan.

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
	▪ BL 6 Support the development of the peatlands within the county for appropriate alternative uses, subject to environmental considerations and nature designations. ➤ BL 7 Recognise the potential and support the appropriate development of eco-tourism developments based on the unique characteristics and biodiversity of bogland in Kildare. ➤ REO 4 Ensure that all new developments and practices do not undermine rural ecosystems, landscapes and conservation areas and are conducted in a manner consistent with the protection of the local environment and in line with national legislation and relevant guidelines.” The KCDP 2017–2023 adopts a balanced policy framework regarding boglands and former peat extraction sites. It recognises the environmental sensitivity of peatlands in relation to flood risk, biodiversity, hydrology, and landscape character while also supporting their transition toward sustainable alternative uses. The KCDP prioritises environmental protection and ecological restoration as the primary objective for cutaway bogs. However, it simultaneously supports renewable energy and other appropriate economic uses, provided these are environmentally sustainable and supported by robust assessments.	
Kildare County Development Plan 2011-2017	The Kildare County Development Plan 2011-2017 (KCDP 2011-2017) came into effect 2nd May 2011, replacing the Kildare County Development Plan 2005-2011. Policies related to the historical activities at the Application Site are noted below. The KCDP 2011-2017 promotes a balanced approach to the after-use of cutaway bogs, recognising the transition toward rehabilitation, biodiversity enhancement, and potential eco-tourism. It prioritises conservation of intact boglands and supports appropriate alternative uses for cutaway bogs (such as forestry or wind energy), subject to robust assessments. Chapter 10 – Rural Development <i>“Bórd na Móna owns c. 8,500ha of peatlands in the county, representing c.10% of its national landholding.</i>	

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	<i>Bórd na Móna is reviewing its peatlands with a view to developing a comprehensive plan for their future use after the peat production phase. Bord na Móna's Sustainability Report 2008/2009 states that it recognises its role and responsibility in the transition of the peatlands within its guardianship and to the rehabilitation and after care of such lands to an environmentally sustainable condition with a higher biodiversity value. The potential for eco-tourism based on the unique characteristics of the peatlands and the biodiversity habitats they provide is also being investigated.</i> The relevant policies in the KCDP 2011-2017 are as follows: ○ BL 1 To ensure that a balanced approach is taken to the development of the county's peat resources and the restoration of cutaway bogs, in order to minimise the negative impact on biodiversity and the archaeological and cultural heritage of the county. ○ BL 2 To seek a balance between maximising the peat extraction potential of the county, whilst ensuring protection and conservation of bogland habitats. Limiting extraction to those bogland areas currently under development will help to minimise impacts by localising effects and thus protect the bog landscape character areas within the county. ○ BL 3 To take a balanced approach to the redevelopment of cutaway bogs. Large portions of cutaway bog should be developed as areas for wildlife, biodiversity, conservation and their amenity value, whilst other portions can be utilised for economic uses such as grassland, forestry and wind energy, subject to all planning and environmental considerations being met. ○ BL 4 To liaise with Bord na Mona, the Irish Peatland Conservation Council, Coillte, National Parks and Wildlife Service of the Department of the Environment, Heritage and Local Government, to ensure the sustainable use of cutaway bogland, with due consideration given to their ecological and amenity value. ○ BL 5 To seek a Hydrological Report which will also incorporate Flood Risk Assessment in accordance with the Planning Guidelines The Planning System and Flood Risk Management (2009) for significant developments within boglands so as to ensure that the	

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	<i>quality of ground or surface water is assessed and mitigation measures identified. This assessment should address the issue of ground and slope stability.</i> ○ BL 6 <i>To support the development of the peatlands within the county for appropriate alternative uses, subject to environmental considerations and nature designations.</i> Chapter 14 – Landscape, Recreation and Amenities <i>“It is the policy of the Council:</i> LL 4: <i>To recognise that intact boglands are critical natural resources for ecological and environmental reasons.</i> LL 5: <i>To recognise that cutaway and cut-over boglands represent degraded landscapes and/ or brownfield sites and thus are potentially robust to absorb a variety of appropriate developments.”</i> The KCDP 2011-2017 reflects a shift from peat extraction toward sustainable redevelopment, biodiversity protection, environmental safeguards, and long-term ecological restoration of peatlands.	
Kildare County Development Plan 2005-2011	The Kildare County Development Plan 2005-2011 (KCDP 2005-2011) was adopted by members of the Council on the 18th May 2005 and legally came into effect on the 15th June 2005. The importance of the development of peatlands is clear. The Council state that it is an aim of the KCDP 2005-2011 to continue to support the development of peatlands for peat production: <i>“BL 1 That in assessing bogland coverage and peat extraction activities within County Kildare, the Council shall seek to identify bogland areas currently under extraction and remnant bogland areas, so as to maximise the peat extraction potential of the county whilst ensuring protection and conservation of bogland habitats. Limiting extraction to those areas currently under development will help to minimise impacts by localising effects and thus protect the bog landscape character areas within the County.”</i> However, the KCDP 2005-2011 also recognises the importance of the conservation and preservation of peatland habitats along with the potential for other peatland uses, such as amenity, educational and	

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
	research purposes. The Council set a goal to secure at least 4% of the county's original peatland area for conservation. Chapter 11 Forestry and Boglands states that <i>"There are approximately 24,300 hectares (60,045 acres) of land in Kildare covered by bogs, which represents 14% of the total land coverage of the county. 38% of this bogland is in industrial production with the majority (8,277 hectares) being operated by Bord na Móna. A number of bogs in the county are designated SACs, SPAs and proposed NHAs".</i> A key objective of the KCDP 2005–2011 is to <i>"ensure that a balanced approach is taken to the development of the county's peat resources and the restoration of cutaway bogs, in order to minimise the negative impact on biodiversity and the archaeological and cultural heritage of the county".</i> In support of this goal, the KCDP outlines several specific measures: <i>"(1) To promote and facilitate the development of the county's peat resources in a sustainable manner.</i> <i>(2) To seek the conservation of designated bogs and to protect the bogland landscape character areas within the county.</i> <i>(3) To encourage a balanced approach to the re-development of cutaway bogs."</i> Policies related to the historical activities at the Application Site are noted below. ○ <i>BL 2 To take a balanced approach to the re-development of cutaway bogs. Large portions of cutaway bog should be developed as areas for wildlife, biodiversity conservation and their amenity value, whilst other portions can be utilised for economic uses such as grassland, forestry and wind energy.</i> ○ <i>BL 3 To liaise with Bord na Móna, the Irish Peatland Conservation Council, Coillte, National Parks and Wildlife Service of the Department of the Environment, Heritage and Local Government, to ensure the sustainable use of cut away bogland, with due consideration given to their ecological and amenity value.</i> ○ <i>BL 4 To recognise that cutaway boglands represent degraded landscapes and/or brownfield sites and thus are potentially robust to absorb a wide variety of sympathetic</i>	

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	<i>developments. It should be noted that they have potential for grass and forestry, however difficulties can arise with crop production.</i> ○ <i>Section 18.7.3 of Chapter 18 Landscape Character Areas of the KCDP 2005-2011 deals specifically with the Allen Remnant Bogs. Policies related to the historical activities at the Application Site are noted below.</i> ○ <i>AR 1 To co-operate with the DOEHLG in the protection and conservation of the Allen Remnant Bog (Mouds Bog) a designated SAC.</i> ○ <i>AR 2 To promote, in conjunction with Bord na Móna and the IPCC, the amenity, ecological and educational value of Allen Remnant Bog (Mouds Bog) while at the same time ensuring the conservation of its fauna and flora.</i> While the continued industrialisation of peatland was supported, the Council acknowledged the need to develop a plan for the county's peatland when turf/ peat production comes to an end.	
Kildare County Development Plan 1999-2005	The Kildare County Development Plan 1999-2005 (KCDP 1999-2005) was adopted in May 1999 and was subsequently amended by several variations, including 1, 2, 3, 4, 6, and 8. The KCDP 1999-2005 adopts a supportive position toward peat extraction, emphasising its role in sustaining employment and facilitating peat-based energy development, subject to environmental designations. It is stated that, <i>“Employment in agriculture, forestry and turf production, as well as mining and quarrying has fallen to the point where it now accounts for only 14% of total employment. The North-West has seen a marked decline in the peat-based economy in recent years, as a result of rationalisation, chiefly by Bord na Mona and the ESB. Employment in the services sector is now dominant accounting for 54% of total employment in the county”</i> The importance of the development of peatlands for employment is clear. <i>“The development of a peat-fired Generating Station adjoining the county (“Europeat 1”) will be of significance to Kildare, not only in terms of employment opportunities for residents of the county but also as most of its raw material will come from the boglands resource of the county. It is important that</i>	

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
	<i>the Council should facilitate this development, through encouragement of the peat extraction, other than in Natural Heritage Areas and Areas of High Amenity, and in processing the necessary electricity supply distribution network arising from it.”</i> While the continued industrialisation of peatland was supported, the Council acknowledged the need to develop a plan for the county’s peatland when turf/ peat production comes to an end. Policies within the KCDP 1999-2005 in relation to the historical activities at the Application Site are noted below. • Part 1 Introduction and Review ○ 1.23.8 Robertstown Countryside The KCDP 1999-2005 recognizes The Robertstown Countryside area as an important recreational and tourism resource, featuring extensive boglands developed by Bord na Móna, canal villages such as Robertstown and Rathangan, natural amenities including Donadea Forest Park, Ballinafagh Lake, the Hill of Allen, and waterways linked to Pollardstown Fen. ○ 1.24 Boglands <i>“At present there is a total of 9,000 hectares (20,000 acres) of bogland in the county. Most of this is being or has been worked, by Bord na Mona, although in recent years there has been a small increase in private working of the bogs.</i> <i>Practically all of the raised bogland in the county has been cut away or is being developed. It is considered important for educational and heritage reasons that at least one intact raised bog area should be preserved in County Kildare because of its location in the east of the county. It is considered that Carbury Bog, because of its international importance as an area of scientific interest and its status as being the most intact of the raised bogs in the East Midlands, should be considered for this preservation.</i> <i>The after-use of cut away bogs in the Robertstown Countryside area is set out in the preceding section of this Plan. The policy in respect of Boglands generally is set out in paragraph 2.23 of this Plan.”</i>	

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
	○ 1.27 Areas of Scientific Interest <i>“The county contains many areas of scientific interest, including Pollardstown Fen which is of international importance. Areas of National importance include Carbury Bog, which is of ecological interest, the Chair of Kildare/Grange Hill which is of geological interest, the Curragh, which is of both geological and ecological interest, and the Liffey Valley, which is of geomorphological and ecological interest.</i> <i>Some of the areas, which were listed in the last Plan, have been designated by the Office of Public Works as Natural Heritage Areas and Special Areas of Conservation. While this will confer additional protection under national legislation, it is considered that their inclusion in the Development Plan remains warranted on planning grounds.”</i> • Part 2 Policy ○ 2.25 Boglands <i>“In the case of cut-away bogland, where the peat resource has been depleted, it will be Council policy to encourage the use of these areas for amenity forestry, using a growth of mixed native deciduous woodlands where possible, in line with the policies for the Robertstown Countryside, and in other areas for forestry and agriculture. In cases in which planning permission is required, it will be the policy of the Council to ensure that the creation of tourist and amenity resources will be facilitated and that the quality of ground and surface water will not be impaired.”</i>	
Kildare County Council Draft Biodiversity Action Plan 2026-2031	<u>Landscapes for Nature</u> 1.5 Support the development of Management Plans for Locally Important Biodiversity Sites, as appropriate 1.6 Prepare a Green and Blue Infrastructure Masterplan (including green, blue and brown infrastructure) that can inform the delineation of core areas, stepping stones, and corridors, that would	The Plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to European Sites. The potential for peat extractions and ancillary activities, which were undertaken at different times and at different levels of intensity throughout the

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
	identify ecologically sensitive areas to be excluded from any potential amenity/ tourism plans and that may inform the designation of an interconnected Nature Reserve, Regional Park, a potential National Peatlands Park, inter alia. 1.10 Actively support the implementation of national biodiversity initiatives, including the All-Ireland Pollinator Plan. <u>Recording, Monitoring & Data Management</u> 3.2 Update Kildare County Council's Pollinator Plan, and as part of that process design-in ways to assess changes in sample local pollinator populations, resulting from the implementation of the All-Ireland Pollinator Plan actions at site level. <u>General Policy</u> 4.6 Advance a policy of 'biodiversity net gain' (BNG), wherever possible, through strategies, plans, developments, mitigation measures, appropriate off-setting and/or investment in Green and Blue Infrastructure with specific evidence-based and locally relevant biodiversity and environmental measures, through the review of the next County Development Plan	bog between 1997 (when the Long Derries, Edenderry SAC was first designated) and 2020, and between 2002 (when the River Barrow and River Nore SAC was first designated) and 2020, to result in adverse effects on European Sites was assessed. No potential for adverse effects on the integrity of any European Site in light of their conservation objectives was identified, and therefore historic peat extractions and ancillary activities are not considered to be in contravention of the policies and objectives within the development plans. The implementation of the Rehabilitation Plans for the Application Site will not have an adverse effect on the integrity of any European Site and is in compliance with the policies and objectives outlined within the plan.
Offaly Biodiversity Action Plan 2025-2030	The Plan has been developed to closely align with the objectives and actions of the 4th National Biodiversity Action Plan 2023 – 2030 which ensures the work will benefit habitats and species both locally and nationally. <u>Actions for biodiversity</u> 21 Implement actions of the All-Ireland Pollinator Plan for Councils 22 Support initiatives under the Water Framework Directive that contribute to the restoration of ecology in water bodies, and the Blue Dot Catchments Programme. 23 Protect existing and maximise nesting opportunities arising from new developments for Swift, House Sparrow, House Martin, Swallows and bats.	The Plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to European Sites. The potential for peat extractions and ancillary activities, which were undertaken at different times and at different levels of intensity throughout the bog between 1997 (when the Long Derries, Edenderry SAC was first designated) and 2020, and between 2002 (when the River Barrow and River Nore SAC was first designated) and 2020, to result in adverse effects on European Sites was assessed. No potential for adverse effects on the integrity of any European Site in light of their conservation

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
	<u>Invasive Alien Species</u> 25 Prioritise the assessment and management of new IAS discoveries in the county in collaboration with other counties + agencies <u>Building Resilience</u> 28 Work with the relevant authorities to support the preparation of, and implement, Ireland's Nature Restoration Plan, when adopted, and where relevant for Offaly County Council, to help achieve national restoration targets. 30 Work with relevant agencies annually to continue to assess wildfire risk to bogs and upland habitats and management of same.	objectives was identified, and therefore historic peat extractions and ancillary activities are not considered to be in contravention of the policies and objectives within the development plans. The implementation of the Rehabilitation Plans for the Application Site will not have an adverse effect on the integrity of any European Site and is in compliance with the policies and objectives outlined within the plan.
National Biodiversity Plan 2002–2006	The overall objective is to secure the conservation, including where possible the enhancement, and sustainable use of biological diversity in Ireland and to contribute to conservation and sustainable use of biodiversity globally. Objectives: ➤ Conserve habitat diversity, including all sites of special biodiversity importance. ➤ Conserve species diversity. ➤ Conserve genetic diversity, both wild and domesticated. ➤ Contribute to the conservation and sustainable use of biodiversity and to advancing other obligations of the CBD in the EU, regionally and internationally.	The Plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to European Sites. The potential for peat extractions and ancillary activities, which were undertaken at different times and at different levels of intensity throughout the bog between 1997 (when the Long Derries, Edenderry SAC was first designated) and 2020, and between 2002 (when the River Barrow and River Nore SAC was first designated) and 2020, to result in adverse effects on European Sites was assessed. No potential for adverse effects on the integrity of any European Site in light of their conservation objectives was identified, and therefore historic peat extractions and ancillary activities are not considered to be in contravention of the policies and objectives within the development plans.

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
		The implementation of the Rehabilitation Plans for the Application Site will not have an adverse effect on the integrity of any European Site and is in compliance with the policies and objectives outlined within the plan.
National Biodiversity Action Plan 2011–2016 (Actions for Biodiversity)	Objective 6: To expand and improve on the management of protected areas and legally protected species - Headline Target: Biodiversity loss of protected habitats and species halted by 2016. - Target 15: Natura 2000 network established, safeguarded, designated by 2012 (2014 for marine SPAs) and under effective conservation management by 2016. - Target 16: Sufficiency, coherence, connectivity and resilience of the protected areas network substantially enhanced by 2016 and further enhanced by 2020. - Target 17: No protected habitats or species in worsening conservation status by 2016; majority of habitats or species in, or moving towards, favourable conservation status by 2020.	The Plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to European Sites. The potential for peat extractions and ancillary activities, which were undertaken at different times and at different levels of intensity throughout the bog between 1997 (when the Long Derries, Edenderry SAC was first designated) and 2020, and between 2002 (when the River Barrow and River Nore SAC was first designated) and 2020, to result in adverse effects on European Sites was assessed. No potential for adverse effects on the integrity of any European Site in light of their conservation objectives was identified, and therefore historic peat extractions and ancillary activities are not considered to be in contravention of the policies and objectives within the development plans. The implementation of the Rehabilitation Plans for the Application Site will not have an adverse effect on the integrity of any European Site and is in compliance with the policies and objectives outlined within the plan.

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
National Biodiversity Action Plan 2017-2021	Target 6.2 - Sufficiency, coherence, connectivity and resilience of the protected areas network substantially enhanced by 2020.	The Plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to European Sites. The potential for peat extractions and ancillary activities, which were undertaken at different times and at different levels of intensity throughout the bog between 1997 (when the Long Derries, Edenderry SAC was first designated) and 2020, and between 2002 (when the River Barrow and River Nore SAC was first designated) and 2020, to result in adverse effects on European Sites was assessed. No potential for adverse effects on the integrity of any European Site in light of their conservation objectives was identified, and therefore historic peat extractions and ancillary activities are not considered to be in contravention of the policies and objectives within the development plans. The implementation of the Rehabilitation Plans for the Application Site will not have an adverse effect on the integrity of any European Site and is in compliance with the policies and objectives outlined within the plan.
Ireland's 4th National Biodiversity Action Plan 2023-2030	The purpose of the 4th National Biodiversity Action Plan is to set out the approach to governance and conservation of biodiversity through a series of targeted actions within the Plan. This is underpinned by five strategic objectives aimed at ensuring that Irelands' biodiversity and ecosystems are conserved and restored, delivering benefits essential for all sectors of society and that Ireland contributes to efforts to halt the loss of biodiversity and the degradation of ecosystems in the EU and globally. The strategic objectives are:	The Plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to European Sites. The potential for peat extraction and ancillary activities, which were undertaken at different times and at different levels of intensity throughout the

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
	- Objective 1: Adopt a Whole-of Government, Whole of-Society Approach to Biodiversity - Objective 2: Meet Urgent Conservation and Restoration Needs - Objective 3: Secure Nature's Contribution to People - Objective 4: Enhance the Evidence Base for Action on Biodiversity - Objective 5: Strengthen Ireland's Contribution to International Biodiversity Initiatives	bog between 1997 (when the Long Derries, Edenderry SAC was first designated) and 2020, and between 2002 (when the River Barrow and River Nore SAC was first designated) and 2020, to result in adverse effects on European Sites was assessed. No potential for adverse effects on the integrity of any European Site in light of their conservation objectives was identified, and therefore historic peat extractions and ancillary activities are not considered to be in contravention of the policies and objectives within the development plans. The implementation of the Rehabilitation Plans for the Application Site will not have an adverse effect on the integrity of any European Site and is in compliance with the policies and objectives outlined within the plan.

7.2

Projects

A search was conducted using data from Offaly and Kildare Councils and An Coimisiún Pleanála's planning portals to search for all planned and/or permitted planning applications within 5km of the Application Site boundary. Applications considered within this boundary include all extant permissions between July 1988 to September 2025 available on the various online portals mentioned above. Land uses within the wider catchment which have the potential to result in cumulative impacts with the Project are considered separately in Section 7.4.

The majority of planning applications granted permission by the relevant planning authorities during the Peat Extraction Phase mainly relate to one-off rural dwelling houses, residential development (i.e. modification and/or re-development of existing dwellings) and agricultural development, including new entrances, sheds and ancillary plant and infrastructure. It should be noted that the commencement of peat extraction and ancillary activities within the Application Site pre-dates all decided planning applications included in the cumulative assessment. Consequently, potential impacts (e.g. traffic movements) arising from the activities associated with the Peat Extraction Phase would have been considered by the planning authorities in their assessment of planning applications within the cumulative list (Appendix 6).

With regard to planning applications lodged during the Current Phase (June 2020 to present day), peat extraction and ancillary activities within the Application Site was already permanently ceased and removal of peat stockpiles, licence compliance activities and rehabilitation works under the Peatland Climate Action Scheme (PCAS) at Lodge Bog (commenced in 2022) were ongoing without any discernible negative effects on the environment.

In line with BnM's vision to assist in achieving a climate neutral Ireland by 2050, it is intended to utilise the Application Site for both peatland rehabilitation and wind energy infrastructure. BnM Powergen Ltd, a subsidiary of BNM is progressing a wind energy development consisting of 47 no. turbines through the pre-planning phase of development. 20 no. turbines will have a maximum blade tip height of 200 metres (m) above the top of the foundation and 27 no. turbines will have a maximum blade tip height of 220 metres (m) above the top of the foundation⁵. It is intended that a direct application will be made to An Coimisiún Pleanála as 'Strategic Infrastructure Development' (SID) under the provisions of Section 37E of the Planning and Development Act 2000, as amended. Following pre-application consultations with An Coimisiún Pleanála under 37B Act, An Coimisiún Pleanála determined that the proposed Ballydermot Wind Farm would be strategic infrastructure within the meaning of section 37A of the Act (ACP Ref: 310143). At the time of writing, the planning application for this development has not yet been submitted to An Coimisiún Pleanála.

Planning permission for the Water Supply Project Eastern and Midlands Region has been submitted to An Coimisiún Pleanála (ACP Ref: 323980). The project includes a proposed pipeline route passing through Codd 2, Glashabaun North, Glashabaun South and Derrybrennan bogs within the Application Site, and a proposed abstraction from the Figile River during the testing and commissioning phase.

7.3

Assessment of Cumulative Effects

7.3.1

Peat Extraction Phase

The majority of planning applications granted permission by the relevant planning authorities during the Peat Extraction Phase mainly relate to one-off rural dwelling houses, residential development (i.e. modification and/or re-development of existing dwellings), and agricultural development, including new entrances, sheds, and ancillary plant and infrastructure. It should be noted that the commencement

⁵ <https://www.ballydermotwindfarm.ie/>

of peat extraction and ancillary activities within the Application Site generally pre-dates the current built environment, and consequently, potential impacts (e.g. traffic movements) arising from the activities associated with the Peat Extraction Phase would have been considered by the planning authorities in their assessment of said applications.

No potential for the Peat Extraction Phase to contribute to any likely adverse cumulative effects on European Sites was identified during this phase when considered in-combination with other plans and projects.

7.3.2 Current Phase

With regard to projects during the Current Phase, peat extraction within the Application Site had ceased permanently, and activities on site were limited to peat stockpile removal, IPC Licence compliance measures and PCAS rehabilitation works at Lodge Bog. These activities were ongoing without any discernible negative effects on the environment.

The Peatland Climate Action Scheme (PCAS) is a programme of enhanced peatland rehabilitation measures, which is in addition to the IPC Licence decommissioning and rehabilitation requirement. PCAS is being applied at specific locations across the Bord na Móna landbank that are identified as suitable for the prescribed enhancement measures.

PCAS works were carried out within sections of Lodge Bog within the Application Site (commencing in 2022). These sections have been subject to enhanced restoration, including targeted rewetting measures. The implementation of PCAS measures at these sites provides greater surface water attenuation and water quality benefits both in and downstream of the restoration areas. These PCAS measures and the standard remedial measures, which will be implemented across the Application Site, will not contribute to any negative effects on European Sites.

In the review of the projects that was undertaken, no connection that could potentially result in additional or negative cumulative impacts was identified. Neither was any potential for different (new) impacts resulting from the combination of the various projects and plans in association with the Project.

7.3.3 Remedial Phase

A planning application for the proposed Ballydermot Wind Farm has not been submitted to An Coimisiún Pleanála at the time of writing. It is proposed that it will consist of 47 no. turbines within the Application Site. The remainder of the Application Site would continue to support peatland rehabilitation. Potential cumulative impacts are considered minimal due to the limited development footprint, extensive mitigation measures, and integration with ongoing rewetting and revegetation works.

The proposed Ballydermot Wind Farm EIAR and NIS will include a suite of best-practice mitigation measures to ensure protection of water quality and biodiversity during construction, operation and decommissioning. The Project is not expected to result in adverse cumulative effects on any European Sites, based on the control and mitigation measures outlined within this rNIS.

The proposed Water Supply Project Eastern and Midlands Region includes a pipeline route passing through Codd 2, Glashabaun North, Glashabaun South and Derrybrennan bogs within the Application Site, and a proposed abstraction from the Figle River during the testing and commissioning phase. Neither the pipeline route nor the Wind Farm footprint intersects the boundary of The Long Derries, Edenderry SAC; the potential for cumulative effects with the Water Supply Project is therefore confined to the River Barrow and River Nore SAC via water quality. An overlap of the construction periods associated with the Water Supply Project and the Remedial Phase could result in cumulative pressures on the local water environment. However, based on the estimated construction timeline for the Water Supply Project, the short-term rehabilitation actions at the Application Site are expected to be

completed prior to any overlap, and the remaining long-term rehabilitation works (monitoring, aftercare and maintenance) are not expected to result in significant cumulative effects in combination with the Water Supply Project. The NIS prepared for the Water Supply Project concludes that the project would not adversely affect the integrity of any European Site, including the River Barrow and River Nore SAC, either alone or in-combination with other plans or projects, following implementation of the mitigation measures proposed. On this basis, no potential for the Water Supply Project to combine with the Remedial Phase to result in adverse cumulative effects on any European Site has been identified.

The implementation of the Draft Bord Na Móna Cutaway Bog Decommissioning and Rehabilitation Plans for the bogs within the Application Site will have a positive effect on habitats within the Application Site as well as on downstream water quality and therefore will not contribute to any negative effects on European Sites when considered cumulatively with other projects and plans.

7.4 Other Land Uses

The potential for the Project to result in cumulative effects on European Sites when considered in combination with other land uses within the wider catchment, including agriculture, forestry and turbary, has been assessed below.

7.4.1 Agriculture

Agriculture is the dominant land use within the lands surrounding the Application Site and the wider catchment, and has been identified as a significant pressure on water quality in a number of surface water bodies within the Figile, Slate and Boyne sub-catchments (Chapter 8, Hydrology and Hydrogeology, Appendix 5). The potential for the Project to combine with agricultural activities to result in cumulative effects on downstream water quality was greatest during the Peat Extraction Phase, given the higher intensity of works undertaken at the Application Site at that time. EPA Q-value monitoring data indicate no clear negative trend in downstream surface water quality over this period, and upstream monitoring stations, unaffected by the Project, show similar fluctuations, indicating that agriculture has a greater influence on surface water quality within the wider catchment than the Project. The potential for cumulative effects with agriculture is further reduced during the Current Phase, given the much-reduced scale of activity at the Application Site, and is expected to be further reduced during the Remedial Phase, as the implementation of the Rehabilitation Plans will result in improvements in surface water attenuation and quality. On this basis, no potential for the Project, in combination with agriculture, to result in significant adverse cumulative effects on any European Site due to deterioration of water quality has been identified.

7.4.2 Forestry

Small areas of coniferous forestry are present within the lands surrounding the Application Site and drain to the same watercourses as the Application Site. Forestry can give rise to water quality effects through the release of sediment and nutrients, and to modified flow regimes through associated land drainage. As with agriculture, the potential for cumulative effects with forestry was greatest during the Peat Extraction Phase, given the higher intensity of works undertaken at the Application Site at that time; EPA Q-value monitoring data indicate no clear negative trend in downstream surface water quality over this period. The potential for cumulative effects with forestry is further reduced during the Current Phase, given the much-reduced scale of activity at the Application Site, and is expected to be further reduced during the Remedial Phase, as the implementation of the Rehabilitation Plans will result in improvements in surface water attenuation and quality. On this basis, no potential for the Project, in combination with forestry, to result in significant adverse cumulative effects on any European Site due to deterioration of water quality has been identified.

7.4.3 Turbary

Third-party peat cutting (turbary) has historically occurred at the margins of several bogs within the Application Site, predating the regulation of the Application Site under IPC Licence. The scale of this activity was small relative to the peat extraction and ancillary activities undertaken by BnM across the Application Site, and any associated pathway for effects on downstream water quality (via suspended solids and nutrient release) would have operated through the same drainage network and receiving watercourses already assessed for BnM's own operations. EPA Q-value monitoring data indicate no clear negative trend in downstream surface water quality over this period, consistent with the conclusion that any contribution from third-party turbary would not be distinguishable from, or additional in a significant way to, the water quality effects already assessed for the Project. On this basis, no potential for the Project, in combination with third-party turbary, to result in significant adverse cumulative effects on any European Site has been identified.

7.5 Conclusion of In Combination Impact Assessment

Following the assessment provided in the preceding sections, it is concluded that, the Project has not and will not result in any adverse effects on the integrity of any European Sites. Having considered other plans, projects and land uses in the area as listed above, no potential for the Project to contribute or have contributed to any adverse cumulative effects on any European Sites was identified when considered in combination with other plans and projects.

In the review of the projects that was undertaken, no connection, that could potentially result in additional or negative cumulative impacts was identified. Neither was any potential for different (new) impacts resulting from the combination of the various projects and plans in association with the Project.

The implementation of the Draft Bord Na Móna Cutaway Bog Decommissioning and Rehabilitation Plans will have a positive long-term impact on biodiversity within the Application Site as well as on downstream water quality and therefore will not contribute to any adverse effects on water quality of European Sites when considered cumulatively with other projects and plans.

8.

CONCLUDING STATEMENT

This rNIS has provided an assessment of all potential direct or indirect adverse effects on European Sites.

By 1997, when The Long Derries, Edenderry SAC was first designated, peat extraction and ancillary activities at the Application Site were well established. Drainage had been inserted and the site consisted predominantly of a large area of cutover bog, comprising bare peat and smaller areas of revegetating scrub, woodland and pioneer habitats of open cutaway bog.

Activities between 1997 and June 2020 largely comprised peat extraction, creation and removal of stockpiles and drain maintenance. Since the year 2000, peat extraction and ancillary activities at the Application Site have been regulated under IPC Licence, the conditions of which include a range of measures to ensure the protection of water quality. The River Barrow and River Nore SAC was designated in 2002 and, as such, peat extraction and ancillary activities at the Application Site were regulated under the IPC Licence prior to its designation. While The Long Derries, Edenderry SAC was first designated in 1997, prior to regulation under the IPC Licence in 2000, control measures were in place at the Application Site during this period. Given the control measures in place prior to the IPC Licence and subsequent regulation of activities under IPC Licence, there is no potential for the peat extraction and ancillary activities at the Application Site to have had an adverse effect on the integrity of any European Site in light of their conservation objectives.

Since the cessation of peat extraction at the Application Site in June 2020, activities have been confined to removal of stockpiles from the Application Site and completion of rehabilitation works at Lodge Bog. These activities have continued to be regulated under IPC Licence and therefore there is no potential for these activities to have resulted in adverse effects on the integrity of any European Site. The existing silt control measures will continue to operate in the Remedial Phase during the early stages of the Rehabilitation Plans, when there is potential for the entrainment of suspended solids in surface waters as a result of drain blocking. During this time no remedial works will be completed during periods of prolonged rainfall. Silt ponds will continue to be in use and will be regularly inspected and maintained as per IPC Licence requirements.

There is no potential for adverse effects on the integrity of any European Site as a result of the implementation of the Rehabilitation Plans for the Application Site.

Following an examination, evaluation and analysis, in light of best scientific knowledge and the conservation objectives of the European Sites, and, on the basis of objective information, it can be concluded that the peat extraction and ancillary activities at the Application Site and the implementation of the Rehabilitation Plans for the Application Site have not and will not have a residual adverse effect on the integrity of any European Site, either alone or in combination with other plans or projects during the Peat Extraction Phase, Current Phase and Remedial Phase.

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