APPROPRIATE ASSESSMENT SCREENING REPORT OF LOUGH BRACKEN ENHANCEMENT FEASIBILITY STUDY AND LANDSCAPE MASTER PLAN, LOUGH BRACKEN, DRUMCONRATH, CO MEATH

Prepared
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Forest, Environmental Research and Services Ltd. (www.fers.ie)
Sillogue
Kilberry
Navan
Co. Meath
087 7573121
pat.moran@fers.ie
OSI License No.: EN0064509

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EXECUTIVE SUMMARY

In February 2022, Flynn, Furney Environmental Consultants prepared a document entitled "Lough Bracken Enhancement Feasibility Study and Landscape Master Plan", with regard to proposed enhancement of the amenity provided by Lough Bracken. Lough Bracken is located 2km southwest of the village of Drumconrath in north Co. Meath. Lough Bracken serves as the water source of the town of Drumconrath, with an abstraction point, pumping station and treatment plant located on the southern shore of the lake. The Stabannan-Braganstown SPA is within 15 km of Lough Bracken. The Killadden (EPA name) water course flows into, and out of Lough Bracken, and is a tributary of the River Dee, which joins with the River Glyde before discharging to Dundalk Bay at Annagassan. Dundalk Bay is the primary constituent of the Dundalk Bay SAC and Dundalk Bay SPA. Owing to the presence of a Source-Pathway-Receptor linkage, the Lough Bracken Enhancement Feasibility Study and Landscape Master Plan requires Appropriate Assessment (Habitats Directive) screening in accordance with Article 6(3) of the EU Habitats Directive.

Following an examination, analysis, and evaluation of the relevant information, and applying the precautionary principle it was considered that there will be no significant negative impact of the proposed plan on the Qualifying Interests, and the attainment of specific Conservation Objectives, either alone or in-combination with other plans or projects on any Natura 2000 sites. Phase II Appropriate Assessment and the preparation of Natura Impact Statement was deemed not to be required in this instance.

It is recommended that further ecological surveys, in particular with regard to breeding and wintering birds, bats and non-volant mammals be undertaken to inform the proposed works.

1 Introduction

1.1 FERS Ltd. Company background

Forest, Environmental Research and Services have been conducting ecological surveys and research since the company's formation in 2005 by Dr Patrick Moran and Dr Kevin Black. Dr Moran, the principal ecologist with FERS, holds a 1st class honours degree in Environmental Biology (UCD), a Ph.D. in Ecology (UCD), a Diploma in EIA and SEA management (UCD) a Diploma in Environmental and Planning Law (King's Inn) and a M.Sc. in Geographical Information Systems and Remote Sensing (University of Ulster, Coleraine). Patrick has in excess of 20 years of experience in carrying out ecological surveys on both an academic and a professional basis. Dr Emma Reeves, senior ecologist with FERS holds a 1st class honours degree in Botany, and a Ph.D. in Botany. Emma has in excess of 15 years of experience in undertaking ecological surveys on an academic and professional basis. Ciarán Byrne, a senior ecologist with FERS holds a 1st class honours degree in Environmental Management (DIT) and a M.Sc. in Applied Science/Ecological Assessment (UCC). Ciarán has in excess of 10 years in undertaking ecological surveys on both an academic and a professional basis.

FERS client list includes National Parks and Wildlife Service, An Bord Pleanála, various County Councils, the Heritage Council, Teagasc, University College Dublin, the Environmental Protection Agency, Inland Waterways Association of Ireland, the Department of Agriculture, the Office of Public Works and Coillte in addition to numerous private individuals and companies. FERS Ltd. has prepared in excess of 300 Appropriate Assessment Screenings/Natura Impact Statements for a wide range of plans and projects.

1.2 The aim of this report

This report has been prepared in compliance with Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities and the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) in support of the Appropriate Assessment of the proposed Lough Bracken enhancement feasibility study and Landscape Master Plan as prepared by Flynn, Furney Environmental Consultants on behalf of Meath Co. Council. This report provides the information required in order to establish whether or not the proposed works are likely to have a significant

ecological impact on any Natura 2000 sites, in the context of their conservation objectives and specifically on the habitats and species for which the sites have been designated.

This report has similarly been prepared with regard to relevant rulings by the Court of Justice of the European Union (CJEU), the High Court, and the Supreme Court including but not limited to:

- [2013] C-258/11 Peter Sweetman and Others v An Bord Pleanála. The CJEU ruled that Article 6 (3) of Council Directive 92/43 / EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that a project not directly linked to it is not immediately necessary for the management of a site to prejudice the integrity of that site if it is likely to prevent the preservation of the constituent characteristics of the site concerned in relation to the presence of a natural priority habitat whose purpose is to maintain gave the reason for registering that site in the list of sites of Community importance within the meaning of that directive. For this verification, the precautionary principle must be applied;
- [2018] C – 164/17 Edel Grace and Peter Sweetman v An Bord Pleanála. The CJEU ruled that Article 6 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, where it is intended to carry out a project on a site designated for the protection and conservation of certain species, of which the area suitable for providing for the needs of a protected species fluctuates over time, and the temporary or permanent effect of that project will be that some parts of the site will no longer be able to provide a suitable habitat for the species in question, the fact that the project includes measures to ensure that, after an appropriate assessment of the implications of the project has been carried out and throughout the lifetime of the project, the part of the site that is in fact likely to provide a suitable habitat will not be reduced and indeed may be enhanced may not be taken into account for the purpose of the assessment that must be carried out in accordance with Article 6(3) of the directive to ensure that the project in question will not adversely affect the integrity of the site concerned; that fact falls to be considered, if need be, under Article 6(4) of the directive;
- [2018] C-323/17 People Over Wind and Sweetman v Coillte Teoranta - The (CJEU) ruled that Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the

screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site;

- [2018] C-461/17 Holohan v An Bord Pleanála – The CJEU ruled that:

    1. Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that an 'appropriate assessment' must, on the one hand, catalogue the entirety of habitat types and species for which a site is protected, and, on the other, identify and examine both the implications of the proposed project for the species present on that site, and for which that site has not been listed, and the implications for habitat types and species to be found outside the boundaries of that site, provided that those implications are liable to affect the conservation objectives of the site.

    2. Article 6(3) of Directive 92/43 must be interpreted as meaning that the competent authority is permitted to grant to a plan or project consent which leaves the developer free to determine subsequently certain parameters relating to the construction phase, such as the location of the construction compound and haul routes, only if that authority is certain that the development consent granted establishes conditions that are strict enough to guarantee that those parameters will not adversely affect the integrity of the site.

    3. Article 6(3) of Directive 92/43 must be interpreted as meaning that, where the competent authority rejects the findings in a scientific expert opinion recommending that additional information be obtained, the 'appropriate assessment' must include an explicit and detailed statement of reasons capable of dispelling all reasonable scientific doubt concerning the effects of the work envisaged on the site concerned.

    4. Article 5(1) and (3) of, and Annex IV to, Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment, must be interpreted as meaning that the developer is obliged to supply information that expressly addresses the significant effects of its project on all species identified in the statement that is supplied pursuant to those provisions.

    5. Article 5(3)(d) of Directive 2011/92 must be interpreted as meaning that the developer must supply information in relation to the environmental impact of both the chosen option and of all the main alternatives studied by the developer, together with the reasons for his choice, taking into account at least the environmental effects, even if such an alternative was rejected at an early stage.

- [2018] IESC 31 Connelly v An Bord Pleanála – Appropriate Assessment must contain complete, precise, and definitive findings;
- [2019] IEHC 84 Kelly v An Bord Pleanála - The Irish High Court concluded that SUDS form part of the development and are not mitigation measures which a competent authority cannot consider at the screening for AA stage.

Furthermore, there have been a number of recent Judicial Reviews that are pertinent as regards this report (e.g. [2020] No. 238 J.R.).

1.3 An outline of the Appropriate Assessment process

The "Habitats Directive" (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna) is the main legislative instrument for the protection and conservation of biodiversity within the European Union and lists certain habitats and species that must be protected within wildlife conservation areas, considered to be important at a European as well as at a national level. A "Special Conservation Area" or SAC is a designation under the Habitats Directive.

The "Birds Directive" (Council Directive 2009/147/EC on the Conservation of Wild Birds) provides for a network of sites in all member states to protect birds at their breeding, feeding, roosting, and wintering areas. This directive identifies species that are rare, in danger of extinction or vulnerable to changes in habitat and which need protection. A "Special Protection Area" or SPA, is a designation under The Birds Directive.

Special Areas of Conservation and Special Protection Areas form a pan-European network of protected sites known as Natura 2000 sites.

The Habitats Directive sets out the protocol for the protection and management of SACs. The Directive sets out key elements of the system of protection including the requirement for Appropriate Assessment of plans and projects. The requirements for an Appropriate Assessment are set out in the EU Habitats Directive. Articles 6(3) and 6(4) of the Directive respectively, state:

> "*…Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public….*"
>
> "*…If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of over-riding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted….*"

1.4 Methodology for Appropriate Assessment

A number of guidance documents on the appropriate assessment process have been consulted during the preparation of this NIS. These are:

- Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (2000);
- Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (Nov. 2001 – published 2002);
- EU Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC (2007);
- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (DoEHLG 2009, Revised February 2010);
- European Communities (Birds and Natural Habitats) Regulations 2011 (DoEHLG 2011); and
- Commission notice "Managing Natura 2000 sites The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Brussels, 21.11.2018 C (2018) 7621 final.

The assessment requirements of Article 6 are generally dealt with in a stage-by-stage approach. The stages as outlined in "Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities" are:

1.4.1 Stage (1) Appropriate Assessment (Habitats Directive) Screening

This initial process identifies the likely impacts of a proposed project or plan upon a Natura 2000 site, either alone, or in combination with other projects or plans and considers whether these impacts are likely to be significant. A recent judgement in the ECJ (C323/17) that has large implications for appropriate assessment screening in Ireland has found that:

"…Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site…"

1.4.2 Stage (2) Preparation of Natura Impact Statement

The consideration of the impact of the project or plan on the integrity of the Natura 2000 Site, either alone or in combination with other projects or plans to the sites structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts.

1.4.3 Stage (3) Assessment of Alternative Solutions

The process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site.

1.4.4 Stage (4) Assessment where Adverse Impacts Remain

An assessment of compensatory measures where, in the light of an assessment of Imperative Reasons of Overriding Public Interest (IROPI), it is deemed that the project or plan should proceed.

At each stage, there is a determination as to whether a further stage in the Appropriate Assessment process is required. If, for example, the conclusions of the Screening stage indicate that there will be no significant impacts on the Natura 2000 site, there is no requirement to proceed further. Appropriate Assessment stages 1 and 2 deal with the main requirements for assessment under Article 6.3. Stage 3 may be part of Article 6(3) or a necessary precursor for Stage 4. This report is comprised of the ecological impact assessment and testing required under the provisions of Article 6(3) by means of the first stage of Appropriate Assessment, the screening process (as set out in the EU Guidance documents).

EU guidance states:

"…This stage examines the likely effects of a project or plan, either alone or in combination with other projects or plans, upon a Natura 2000 site and considers whether it can be objectively concluded that these effects will not be significant...".

This report has been undertaken in accordance with the European Commission's Guidance on Appropriate Assessment (European Commission, 2001) which comprises the following:

1. Description of the Plan.
2. Identification of Natura 2000 sites potentially affected by the Plan.
3. Identification and description of individual and cumulative impacts likely to result from the Plan.
4. Assessment of the significance of the impacts identified on the conservation objectives of the site(s).

5. Exclusion of sites where it can be objectively concluded that there will be no significant impacts on conservation objectives.

1.5 Consultations

1.5.1 NPWS

The primary body consulted with regard to matters involving Natura 2000 sites is the National Parks and Wildlife Service (NPWS). The role of the NPWS is:

- To secure the conservation of a representative range of ecosystems and maintain and enhance populations of flora and fauna in Ireland.
- To implement the EU Habitats and Birds Directives.
- To designate and advise on the protection of Natural Heritage Areas (NHA) having particular regard to the need to consult with interested parties.
- To make the necessary arrangements for the implementation of National and EU legislation and policies and for the ratification and implementation of the range of international Conventions and Agreements relating to the natural heritage.
- To manage, maintain and develop State-owned National Parks and Nature Reserves.

Information pertaining to Natura 2000 sites within the Republic of Ireland is typically held by NPWS and is publicly accessible through their on-line database at www.npws.ie . Consultations carried out involved querying the NPWS database for information pertaining to Natura 2000 sites within 15 km of the proposed development.

1.5.2 NBDC Database

The National Biodiversity Database Centre database was queried for records of species of conservation concern present within the immediate vicinity of the proposed development.

1.5.3 Other relevant data-sources

Other relevant data-sources were queried, as necessary.

2 Screening

Following the guidelines set out by NPWS (2009), Appropriate Assessment Screening (Phase I Appropriate Assessment) is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3) of the EU Habitats Directive. According to the guidelines as laid by NPWS (2009), Appropriate Assessment Screening is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3):

(1) Is the plan or project directly connected to or necessary for the management of the site?

(2) Is the plan or project, alone or in combination with other such plans or projects likely to have significant negative effects on a Natura 2000 site(s) in view of the conservation objectives of that site(s)?

The proposed plan does not comply with the first screening test (i.e., the proposed plan is not directly connected to, or necessary for the management of any Natura 2000 site). The screening exercise will therefore inform the Appropriate Assessment process in determining whether the proposed plan, alone or in combination with other plans and projects, has any potential to have significant effects on the Natura 2000 sites within the study area. If the effects are deemed to be significant, potentially significant, or uncertain, or it the screening process becomes overly complicated, then applying the Precautionary Principle and in accordance with Article 6(3) of the Habitats Directive, a Stage 2 Appropriate Assessment is required stage, i.e., "*The consideration of the impact of the project or plan on the integrity of the Natura 2000 Site, either alone or in combination with other projects or plans to the sites structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts."*

2.1 Description of proposed plan

The plan outlines a proposal for future development of the Lough Bracken that will bring together the results of the baseline studies, ecological assessments and stakeholder consultation. An overview of the main details of the plan are:

- Angling Stands - To improve the usability and sustainability of Lough bracken for anglers, the total number and distribution of angling stands is to be increased to eight around the lake shoreline;
- Walking Tracks - Walking tracks have been designed based on the multifaceted use of the lake circulation patterns which allow for the management of recreational users, anglers, families and people of all abilities;
- Child-safe swimming area - A child safe swimming area is proposed for the western shoreline along the universal access walking trail. This floating pier will create an enclosure/edge at shallow depths to allow children ease of access and to ensure it is as safe as possible;
- Bird Hides – installation of bird hides;
- Fencing - Treated posts and rail fences are to be constructed along the lake's southern and eastern shoreline. These will be placed at a contour at least 600cm above the high-water level of the lake;
- Picnic and Amenity areas - Adjacent to the existing car park, the area of unused amenity grassland is proposed as a picnic area with a toilet and changing room facility. Proposed is a universal access compost toilet;
- Carpark, cycling and signage - The car park is approximately 0.1 hectares of tarmac with kerbing surrounding the edges. The western edge of the car park is bounded by a small area of amenity grassland that appears to be unmanaged. This is fringed to the west by semi-mature and mature trees. The car park was seen to be in good condition overall. The surface is largely intact and suitable for use. The facilities should include a secure bicycle-parking rack. Signage is proposed to be installed to inform a range of visitors at Lough Bracken;
- Playground - The current amenity grassland will also provide space for a universal access children's playground. Nature-based play structures will include slides, swings and a climbable castle structure; and
- Tree planting - Clearance of non-native commercial conifers around the car park and around the lake's eastern shoreline will provide opportunities for ecological enhancement, particularly tree planting. Opportunities exist for planting oaks along with other natives including Birch, Rowan and Holly.

The approximate location of the plan site is indicated in Figure 1, Figure 2, Figure 3 and Figure 4. An excerpt from the EPA online resource (https://gis.epa.ie/EPAMaps/AAGeoTool) indicating the flow of the Killadden watercourse is indicated in Figure 5. An excerpt from landscape drawings indicating relevant proposed "Zones" is provided in Figure 6.

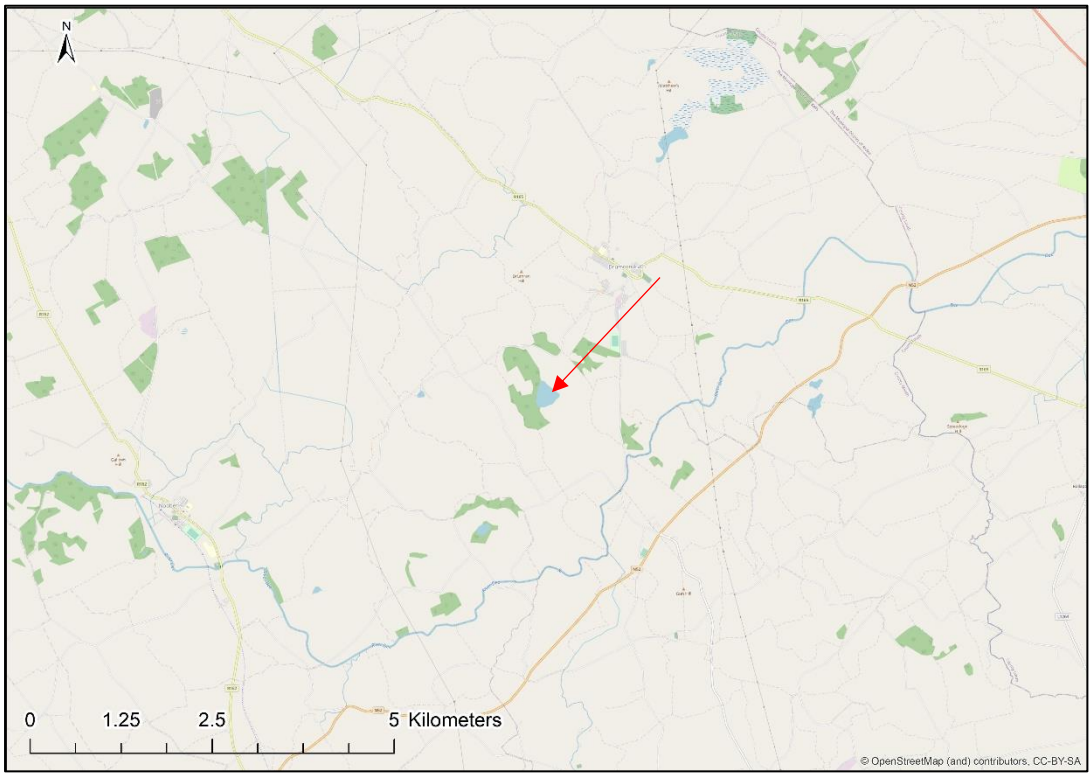

Figure 1: Approximate location of Lough Bracken (1:50,000)

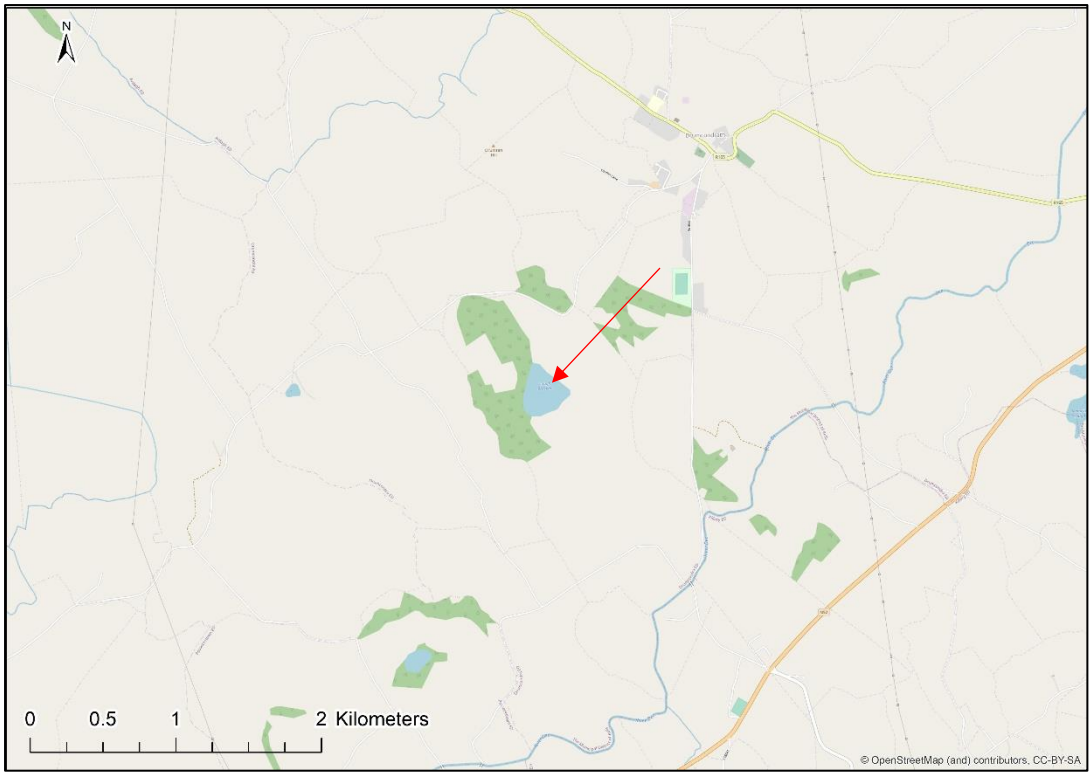

Figure 2: Approximate location of Lough Bracken (1:25,000)

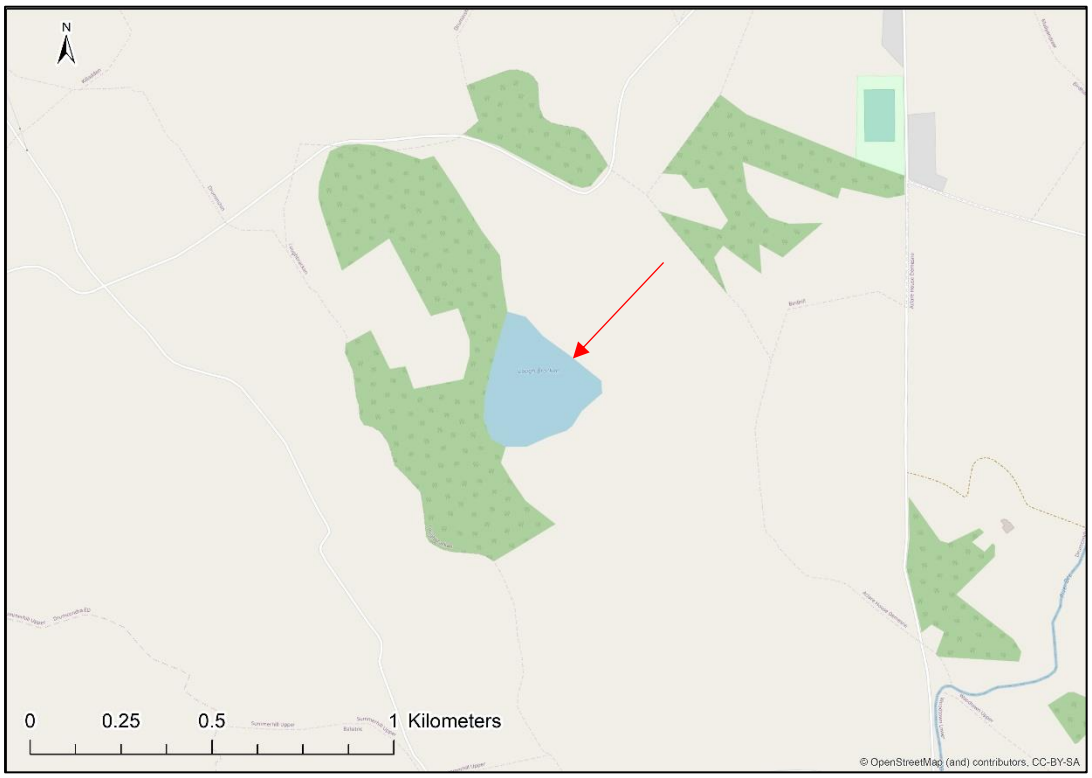

Figure 3: Approximate location of Lough Bracken (1:10,000)

Figure 4: Approximate location of Lough Bracken overlain on satellite imagery (1:5,000)

Figure 5: Excerpt from EPA online resource, indicating path of Killadden watercourse

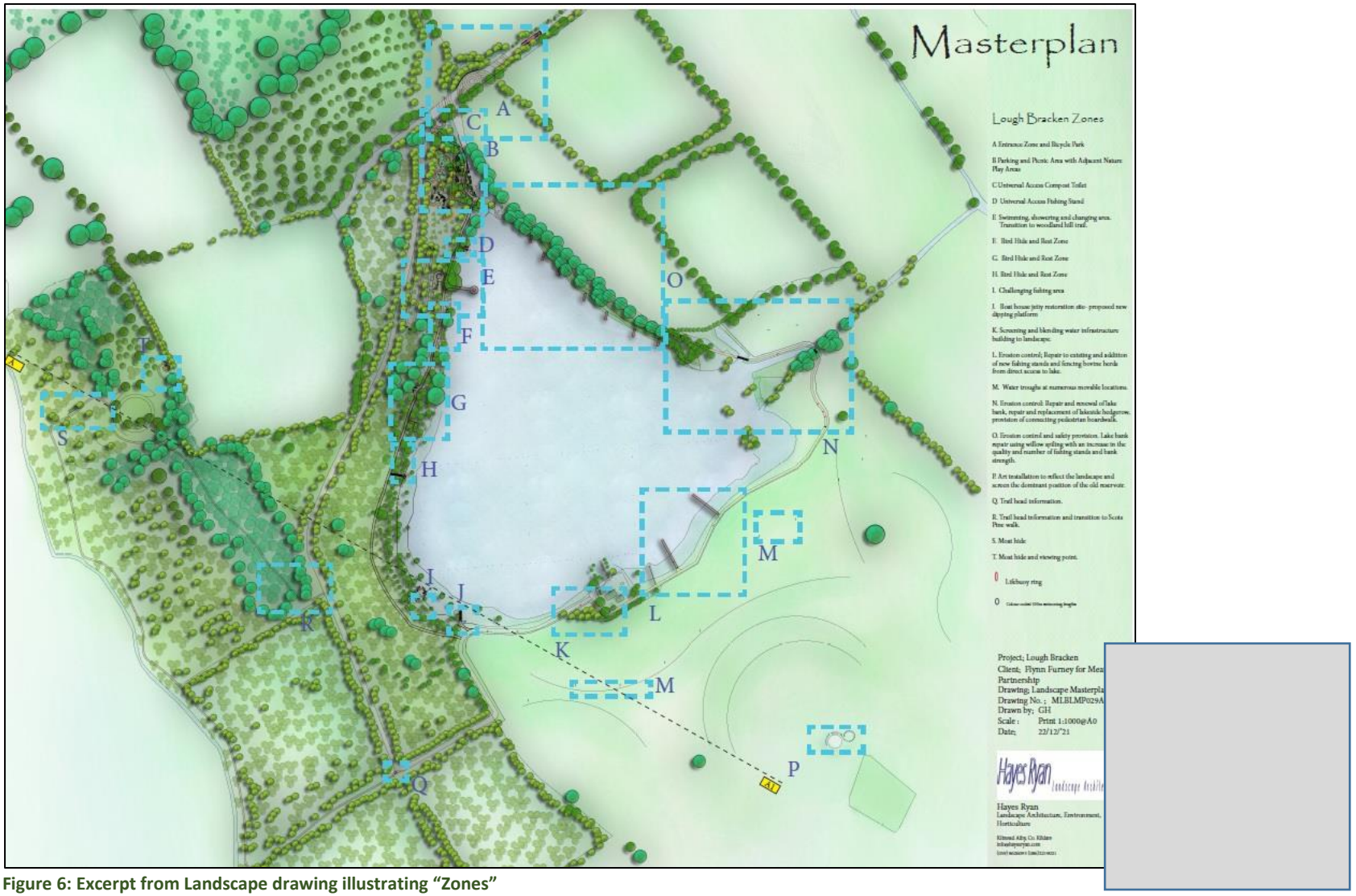

Figure 6: Excerpt from Landscape drawing illustrating "Zones"

2.2 Description of existing conditions on site

A site visit was undertaken by Dr Patrick Moran on the 14th of November 2022. Although outside of the optimal time frame for undertaking ecological surveys, a site visit at this time is sufficient to inform the presence of Annex I Habitat or the likelihood of Annex II species (Habitats Directive) or Annex I Bird Species (Birds Directive). In addition, the site visit was informed by the ecological baseline surveys undertaken by Flynn, Furney Environmental Consultants.

Aerial Images and photographs of the site and *environs* are provided in Figure 7, Figure 8, Figure 9, Figure 10, Figure 11, Figure 12, Figure 13, Figure 14 and Figure 15.

Figure 7: Overview of Lough Bracken and *environs* view (1)

Figure 8: Overview of Lough Bracken and *environs* view (2)

Figure 9: Existing fishing stand

Figure 10: Existing gabions

Figure 11: Killadden before entering Lough Bracken

Figure 12: Point where Killadden exits Lough Bracken

Figure 13: Water abstraction compound

Figure 14: Rubbish dumped at lake edge on day of site visit

Figure 15: Part of exiting path

The existing habitats on-site almost certainly support numerous species of conservation concern, including species such as Otter (Annex II Habitats Directive) and Kingfisher (Annex I Birds Directive) although breeding habitat is not present. In addition, the habitats present are likely to support populations of commuting/foraging/roosting bats of several species. All species of bat occurring in Ireland are listed on Annex IV of the EU Habitats Directive. Lough Bracken is also likely to support numerous species of overwintering bird species of conservation concern.

Of note, there is no record of any species listed in Part (1) of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011 (as amended).

2.3 Description of scope

The geographical scope of the assessment is to determine if the proposed works/development has the potential to have any significant negative impact on the Natura 2000 sites occurring within 15 km of the proposed development.

The NBDC database was accessed on 14/11/22 to query records occurring within the vicinity of the proposed development (10 km square, N88 see Figure 16). The species of conservation concern as recorded within this 10 km square are illustrated in Table 1. Numerous species of conservation concern including Otter, Kingfisher and numerous overwintering bird species are recorded as occurring in the vicinity. Indeed, there is a record for Otter located at Lough Bracken (Figure 17). The map presented in Figure 18 indicates that as regards the "Habitat Suitability Index" for all bats, the proposed development is located in the second highest category.

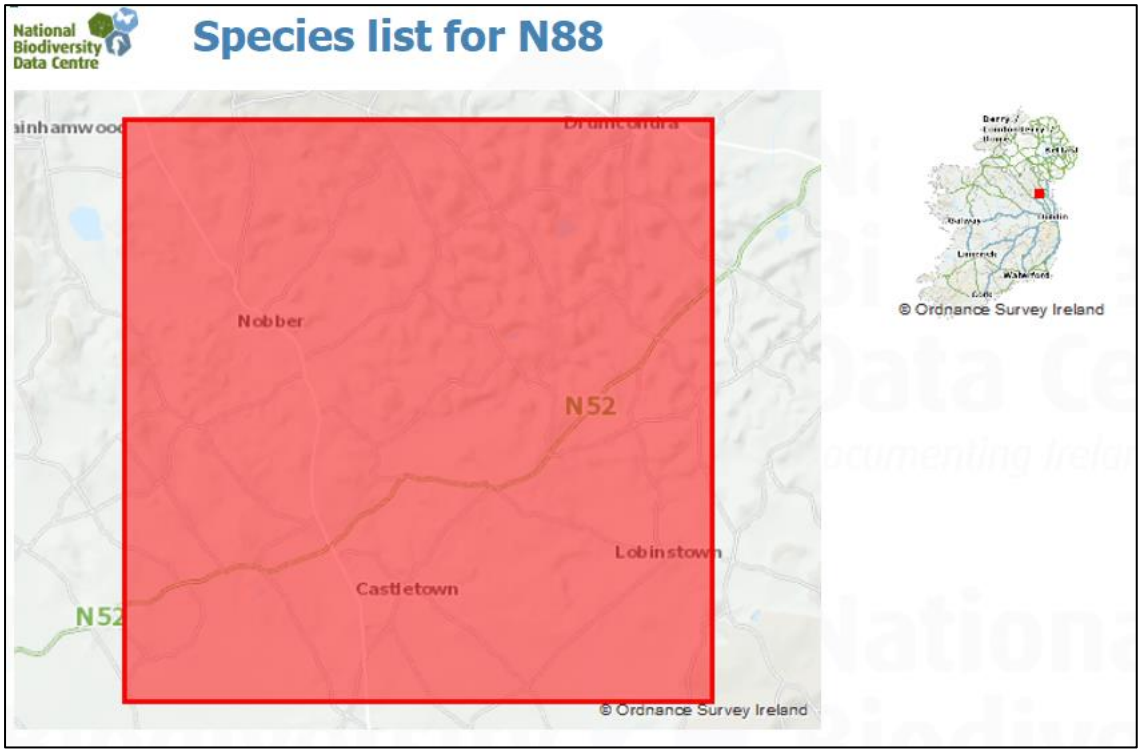

Figure 16: Location of 10 km square queried (National Biodiversity Data Centre)

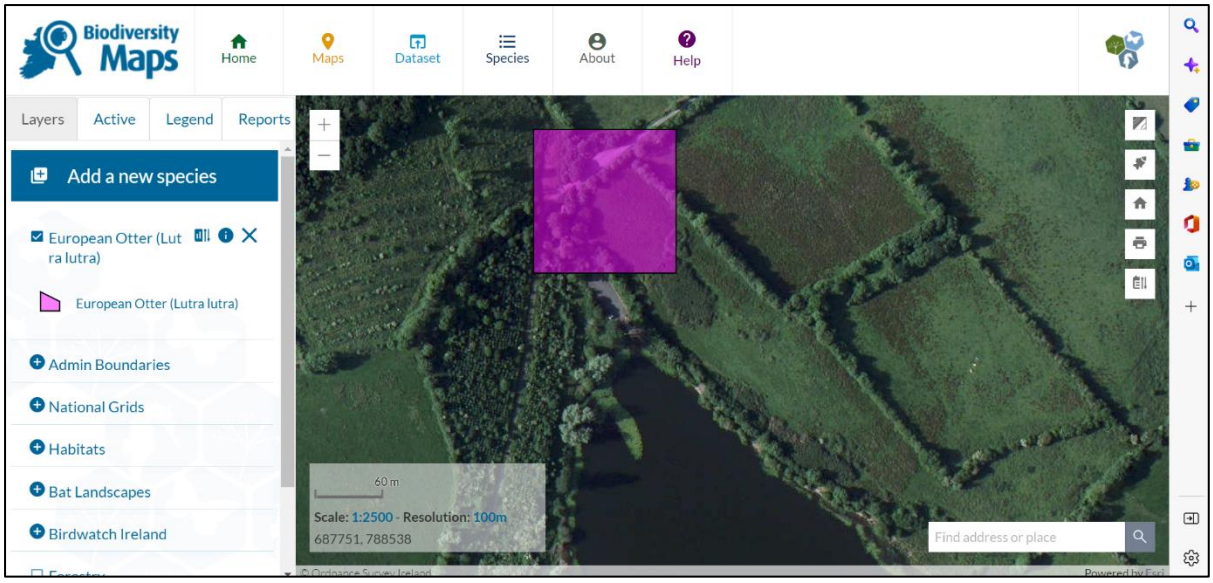

Figure 17: Record for European Otter at Lough Bracken

Table 1: Species of conservation concern recorded within 1 km square (* indicates invasive concern)

Scientific Name	**Common Name**	**Date of last record**
Actitis hypoleucos	Common Sandpiper	31/12/2001
Alauda arvensis	Sky Lark	31/07/1991
Alcedo atthis	Common Kingfisher	31/12/2011
Anas acuta	Northern Pintail	31/12/2001
Anas clypeata	Northern Shoveler	31/12/2001
Anas crecca	Eurasian Teal	31/12/2011
Anas penelope	Eurasian Wigeon	31/12/2001
Anas platyrhynchos	Mallard	31/12/2011
Anser albifrons	Greater White-fronted Goose	31/12/2001
Apus apus	Common Swift	31/12/2011
Aythya ferina	Common Pochard	31/12/2001
Aythya fuligula	Tufted Duck	31/12/2011
Bucephala clangula	Common Goldeneye	31/12/2001
Calidris alpina	Dunlin	31/12/2001
Carduelis cannabina	Common Linnet	31/12/2011
Columba livia	Rock Pigeon	31/12/2011
Columba oenas	Stock Pigeon	31/07/1991
Columba palumbus	Common Wood Pigeon	16/05/2021
Crex crex	Corn Crake	31/07/1972
Cygnus cygnus	Whooper Swan	31/12/2001
Cygnus olor	Mute Swan	31/12/2011
Delichon urbicum	House Martin	16/05/2021
Emberiza citrinella	Yellowhammer	18/01/2019
Erinaceus europaeus	West European Hedgehog	14/05/2021
Falco tinnunculus	Common Kestrel	31/07/1991
*Fallopia japonica**	Japanese Knotweed	06/03/2022

Scientific Name	**Common Name**	**Date of last record**
Fulica atra	Common Coot	31/12/2011
Gallinago gallinago	Common Snipe	31/12/2011
*Heracleum mantegazzianum**	Giant Hogweed	01/07/2005
Hirundo rustica	Barn Swallow	16/05/2021
Larus argentatus	Herring Gull	29/02/1984
Larus canus	Mew Gull	31/12/2001
Larus fuscus	Lesser Black-backed Gull	31/12/2001
Larus marinus	Great Black-backed Gull	29/02/1984
Larus ridibundus	Black-headed Gull	31/12/2011
Locustella naevia	Common Grasshopper Warbler	31/07/1972
Lutra lutra	European Otter	12/02/2015
Meles meles	Eurasian Badger	31/12/2015
Muscicapa striata	Spotted Flycatcher	31/12/2011
*Mustela vison**	American Mink	14/01/1992
Myotis daubentonii	Daubenton's Bat	01/09/2009
Nyctalus leisleri	Lesser Noctule	15/08/2012
*Oxyura jamaicensis**	Ruddy Duck	31/12/2001
Passer domesticus	House Sparrow	15/05/2021
Passer montanus	Eurasian Tree Sparrow	31/12/2011
Phalacrocorax carbo	Great Cormorant	31/12/2011
Phasianus colchicus	Common Pheasant	16/05/2021
Pipistrellus pipistrellus sensu lato	Pipistrelle	12/08/2014
Pipistrellus pygmaeus	Soprano Pipistrelle	24/07/2014
Plecotus auritus	Brown Long-eared Bat	08/09/2008
Pluvialis apricaria	European Golden Plover	31/12/2001
Podiceps cristatus	Great Crested Grebe	31/12/2011
*Prunus laurocerasus**	Cherry Laurel	01/07/2005
Rallus aquaticus	Water Rail	31/12/2001
Rana temporaria	Common Frog	22/03/2011
*Rhododendron ponticum**	Rhododendron ponticum	09/06/2005
Riparia riparia	Sand Martin	31/12/2011
*Sciurus carolinensis**	Eastern Grey Squirrel	31/12/2012
Scolopax rusticola	Eurasian Woodcock	31/12/2011
Sorex minutus	Eurasian Pygmy Shrew	15/08/2001
Streptopelia turtur	European Turtle Dove	16/05/2021
Sturnus vulgaris	Common Starling	16/05/2021
Tachybaptus ruficollis	Little Grebe	31/12/2001
Tyto alba	Barn Owl	31/12/2011
Vanellus vanellus	Northern Lapwing	31/12/2001

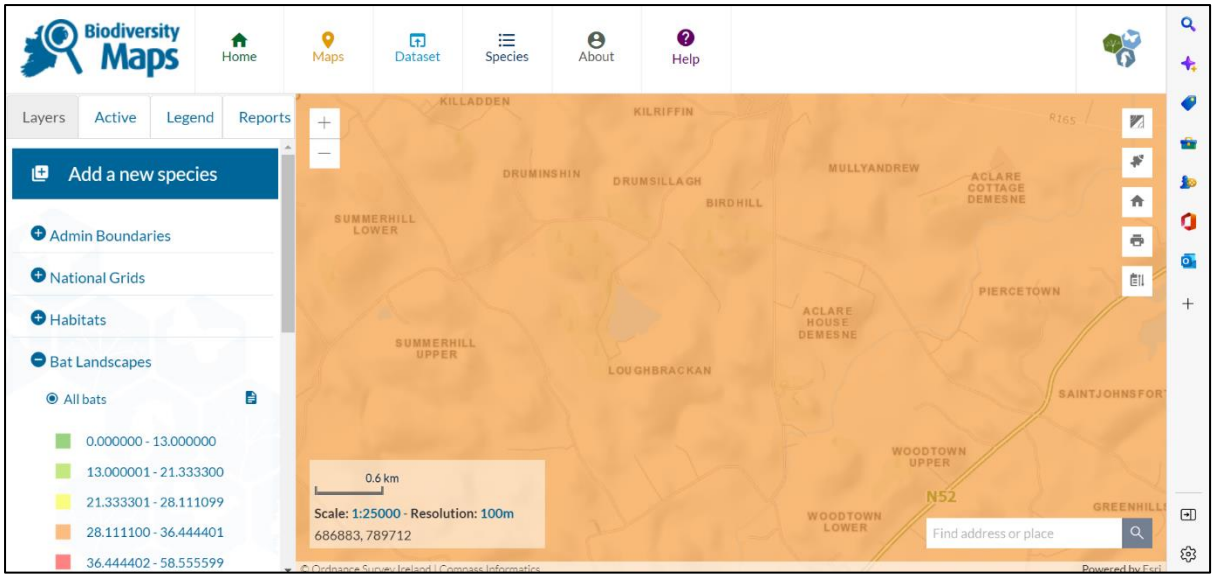

Figure 18:Excerpt from NBDC database online resource indicating Habitat Suitability index of general area

Lough Bracken and *environs* have the potential to support numerous species of conservation concern that have not been surveyed as a component of the ecological baseline, which concentrated on habitats and macroinvertebrates. It is recommended that further ecological surveys, in particular with regard to breeding and wintering birds, bats and non-volant mammals be undertaken to inform the proposed works.

2.4 Identification of Natura 2000 sites potentially impacted upon by the development

It is general practice, when screening a plan or project for compliance with the Habitats Directive, to identify all Natura 2000 sites within the functional area of the plan/project itself and within 15 km of the boundaries of the area the plan/project applies to (with an appropriate "Zone of Influence" identified from any Source-Pathway-Receptor linkages). This approach is currently recommended in the Department of the Environmental, Heritage and Local Government's document Guidance for Planning Authorities and as a precautionary measure, to ensure that all potentially affected Natura 2000 sites are included in the screening process. The maintenance of habitats and species within individual Natura 2000 sites at favourable conservation condition contributes to the overall maintenance of favourable conservation status of those habitats and species at a national level. It is therefore necessary to identify any potential impacts of the proposed development on the conservation status of Natura 2000 sites. The National Parks and Wildlife Service deem that the favourable conservation status of a habitat is achieved when:

- Its natural range, and area it covers within that range, is stable or increasing.
- The ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future.
- The conservation status of its typical species is favourable.

The National Parks and Wildlife Service deem that the favourable conservation status of a species is achieved when:

- Population data on the species concerned indicate that it is maintaining itself.
- The natural range of the species is neither being reduced, or likely to be reduced in the foreseeable future.
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

There is one area designated as a Special Protection Area within 15 km of Lough Bracken – Stabannan-Braganstown SPA. Of note, however, the Killadden watercourse, which flows into and out of Lough Bracken is a Tributary of the River Dee and water from this watercourse eventually discharges to Dundalk Bay, the primary constituent of the Dundalk Bay SAC and Dundalk Bay SPA. For this reason, these Natura 2000 sites are also assumed to be within the Zone of Influence (see Table 2, Figure 19 and Figure 20).

Table 2: Natura 2000 sites within 15km or zone of influence

SITE CODE	DESIGNATION	SITE NAME
004026	SPA	DUNDALK BAY
004091	SPA	STABANNAN-BRAGANSTOWN
000455	SAC	DUNDALK BAY

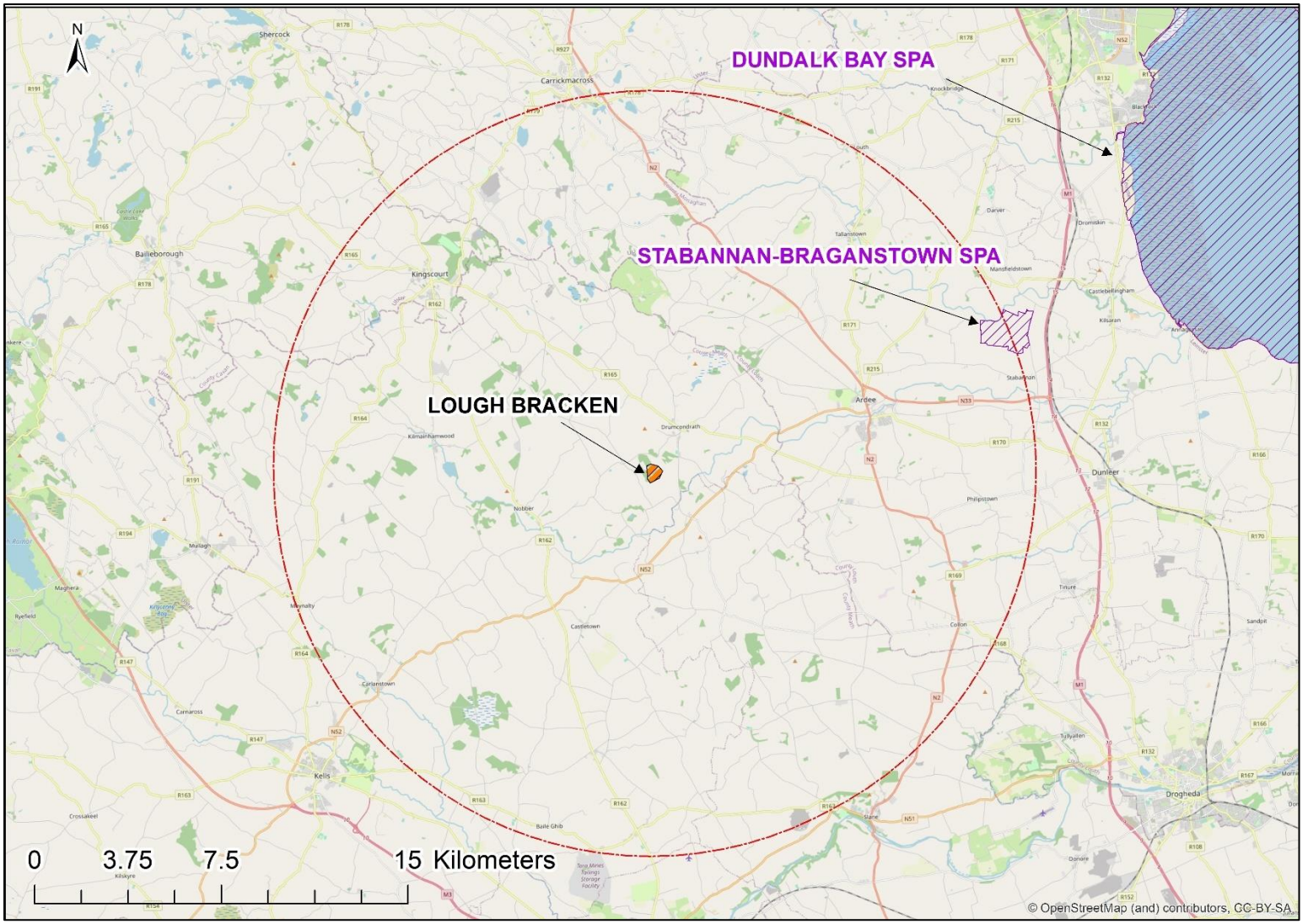

Figure 19: Location of SPAs within 15 km (Buffer – red line) or zone of influence

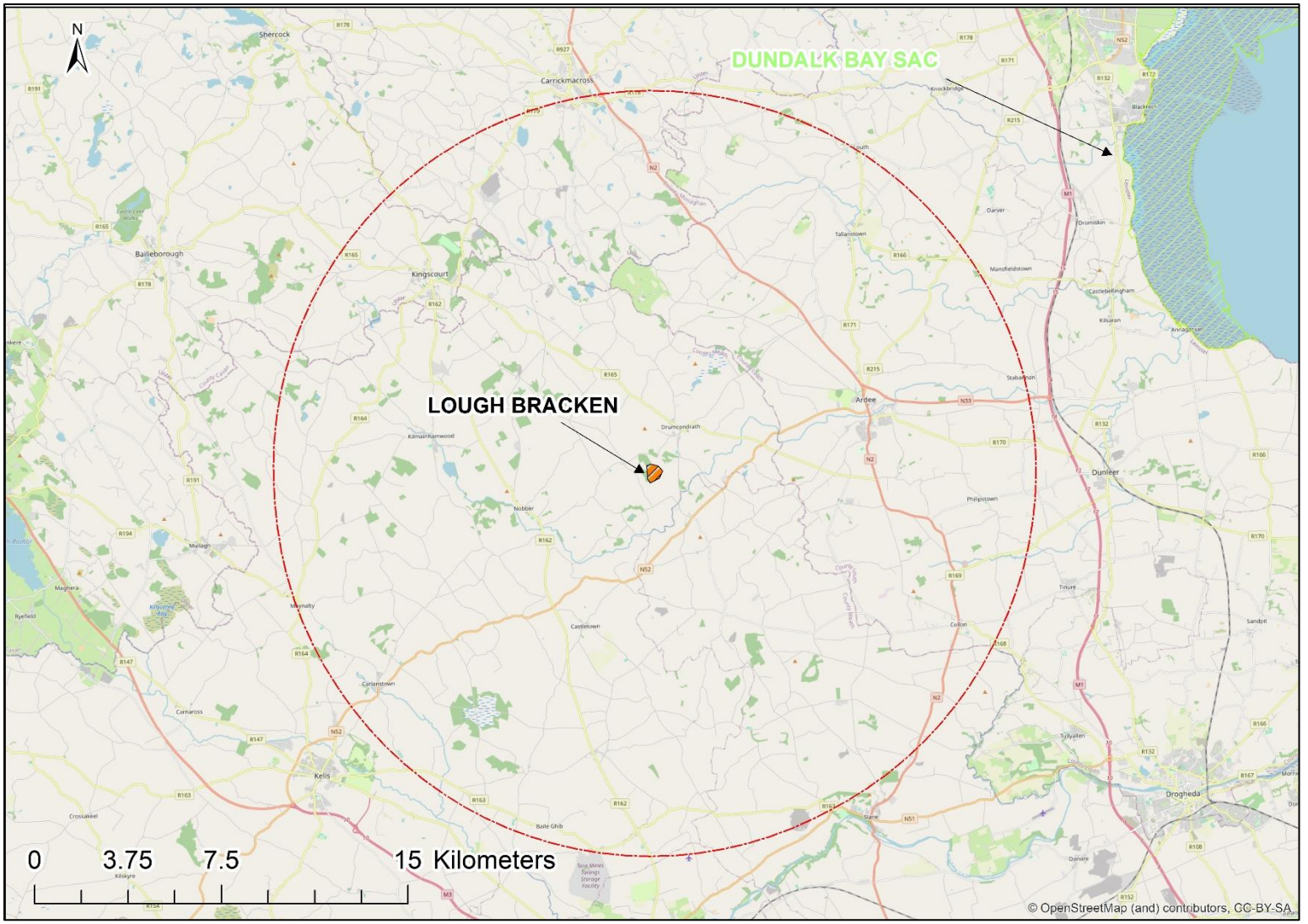

Figure 20: Location of SACs within 15 km (Buffer – red line) or zone of influence

2.5 Summary of Natura 2000 sites potentially impacted upon by the proposed development

There are three Natura 2000 sites within the potential zone of influence. Given the location, nature and scale of the proposed development, any potential impacts are likely to be limited to impacts on water quality.

It is the goal of NPWS to draw up conservation plans for all areas designated for nature conservation, and that these plans will, among other things, set clear objectives for the conservation of the features of interest within a site. Where a detailed Conservation Objectives Document is not available, NPWS have provided a site synopsis, generic Conservation Objectives and a Natura 2000 data form from which information is sourced.

In this section, the Natura 2000 sites potentially impacted upon by the proposed development are described according to:

1) General description of the site;
2) Qualifying Interests (QI) of the site;
3) Threats, pressures and activities with negative impacts on the site;
4) Conservation Objectives of the site; and
5) Conservation status of the site.

The codes utilized within the Natura 2000 forms are available from http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

2.5.1 Dundalk Bay SPA (Site synopsis version date 07/07/2014, Natura 2000 form update 10/2020, Conservation Objectives version 1)

2.5.1.1 General Description

According to the Natura 2000 Data form "*…The site is a large bay-like estuarine complex, extending c.15 km from north to south and on average of 4-5 km in width. It contains the estuaries of a number of moderately sized rivers, principally the Castletown, the Flurry, the Fane and the Glyde/Dee. These rivers drain fairly intensive agricultural catchments, and the Castletown flows through Dundalk town and serves the port. The site contains the largest expanse of intertidal flats on the east coast and has a very marked tidal range. The sediments are predominantly sands though fine muds or muddy sands occur in the sheltered areas at Dundalk and Ballymascanlan. Salt marshes are well represented, especially in the more sheltered areas such as the estuaries of the Castletown and Flurry rivers. Spartina*

is frequent in parts. Post-glacial raised beaches are a feature of the shoreline. Estuaries and particularly intertidal sand and mud flats are very well represented at this site and support the largest concentration of wintering waterfowl on the east coast (regularly in excess of 20,000 wintering waterfowl). The bay has internationally important populations of Branta bernicla hrota, Calidris canutus, Limosa limosa and Limosa lapponica. It is the top site in the country for Calidris canutus, with over 38% of the national total. A further 13 species have populations of national importance, with particular notable numbers for Haematopus ostralegus (12.4% of national total), Calidris alpina (8.4% of national total) and Vanellus vanellus (7.4% of national total). Dundalk Bay is an important roost site for Anser anser and small numbers of Anser albifrons flavirostris. Shallow bay waters support divers, grebes and diving duck, with nationally important populations of Podiceps cristatus and Mergus serrator. This bay is a regular site for passage waders such as Philomachus pugnax, Calidris ferruginea and Tringa erythropus. It is also an important site for wintering gulls, especially Larus ridibundus and Larus canus. The site provides both feeding and roosting areas for the waterfowl species and habitat quality for most of the estuarine habitats is very good. Wintering bird populations have been well monitored in recent years…"

2.5.1.2 Qualifying Interests

The Qualifying Interest (QI) of Dundalk Bay SPA are indicated in Table 3.

Table 3

004026	Dundalk Bay SPA	
QI	**Description**	
A005	Great Crested Grebe *Podiceps cristatus*	wintering
A043	Greylag Goose *Anser anser*	wintering
A046	Light-bellied Brent Goose *Branta bernicla hrota*	wintering
A048	Shelduck *Tadorna tadorna*	wintering
A052	Teal *Anas crecca*	wintering
A053	Mallard *Anas platyrhynchos*	wintering
A054	Pintail *Anas acuta*	wintering
A065	Common Scoter *Melanitta nigra*	wintering
A069	Red-breasted Merganser *Mergus serrator*	wintering
A130	Oystercatcher *Haematopus ostralegus*	wintering
A137	Ringed Plover *Charadrius hiaticula*	wintering
A140	Golden Plover *Pluvialis apricaria*	wintering
A141	Grey Plover *Pluvialis squatarola*	wintering
A142	Lapwing *Vanellus vanellus*	wintering
A143	Knot *Calidris canutus*	wintering
A149	Dunlin *Calidris alpina*	wintering
A156	Black-tailed Godwit *Limosa limosa*	wintering
A157	Bar-tailed Godwit *Limosa lapponica*	wintering
A160	Curlew *Numenius arquata*	wintering
A162	Redshank *Tringa totanus*	wintering
A179	Black-headed Gull *Chroicocephalus ridibundus*	wintering
A182	Common Gull *Larus canus*	wintering
A184	Herring Gull *Larus argentatus*	wintering
A999	Wetlands & Waterbirds	

2.5.1.3 Threats, pressures and activities with negative impacts on the site

Details as to the threats, pressures and activities with negative impacts on the site are identified from the Natura 2000 data form for the sites and are illustrated in Table 4.

Table 4: Threats, pressures and activities with impacts on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	D01.02		o
M	D03.02		i
H	E01		o
M	G01.02		i
L	A04		i
M	J02.11		i
M	F02.03		i
M	E01.03		o
H	I01		i
M	A08		o
M	G01.01		i
M	E02		o
M	E03		i
M	J02.12		i

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
M	F02.03		i
M	G01.01		i
M	D03.02		i
L	A04		i
H	D01.02		o
M	E01.03		o

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

2.5.1.4 Conservation Objectives

A detailed Conservation Objectives document for this site has been prepared and is available from www.npws.ie. Excerpts from the Conservation Objectives Document are presented in Table 5, Table 6, Table 7, Table 8, Table 9, Table 10, Table 11, Table 12, Table 13, Table 14, Table 15, Table 16, Table 17, Table 18, Table 19,Table 20, Table 21, Table 22, Table 23, Table 24, Table 25, Table 26, Table 27 and Table 28.

Table 5: Conservation objectives for [A005] occurring within this site

A005 Great Crested Grebe *Podiceps cristatus*

To maintain the favourable conservation condition of Great Crested Grebe in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 6: Conservation objectives for [A043] occurring within this site

A043 Greylag Goose *Anser anser*

To maintain the favourable conservation condition of Greylag Goose in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys.See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in section 5 of the SPA conservation objectives supporting document

Table 7: Conservation objectives for [A046] occurring within this site

A046 Light-bellied Brent Goose *Branta bernicla hrota*

To maintain the favourable conservation condition of Light-bellied Brent Geese in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 8: Conservation objectives for [A048] occurring within this site

A048 Shelduck *Tadorna tadorna*

To maintain the favourable conservation condition of Shelduck in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 9: Conservation objectives for A052 occurring within this site

A052 Teal *Anas crecca*			
To maintain the favourable conservation condition of Teal in Dundalk Bay SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 10: Conservation objectives for [A053] occurring within this site

A053 Mallard *Anas platyrhynchos*			
To maintain the favourable conservation condition of Mallard in Dundalk Bay SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 11: Conservation objectives for [A054] occurring within this site

A054 Pintail *Anas acuta*

To maintain the favourable conservation condition of Pintail in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 12: Conservation objectives for [A065] occurring within this site

A065 Common Scoter *Melanitta nigra*

To maintain the favourable conservation condition of Common Scoter in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment using (Generalised Additive Modelling (GAM)) could not be undertaken for this species due to an incomplete dataset. A measure of population change was calculated using the 'generic threshold' method. See Section 4 of the SPA conservation objectives supporting document for more details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 13: Conservation objectives for [A069] occurring within the site

A069 Red-breasted Merganser *Mergus serrator*

To maintain the favourable conservation condition of Red-breasted Merganser in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 14: Conservation objectives for [A130] occurring at this site

A130 Oystercatcher *Haematopus ostralegus*

To maintain the favourable conservation condition of Oystercatcher in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 15: Conservation objectives for [A137] occurring at this site

A137 Ringed Plover *Charadrius hiaticula*

To maintain the favourable conservation condition of Ringed Plover in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 16: Conservation objectives for [A140] occurring at this site

A140 Golden Plover *Pluvialis apricaria*

To maintain the favourable conservation condition of Golden Plover in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 17: Conservation objectives for [A141] occurring at this site

A141 Grey Plover *Pluvialis squatarola*

To maintain the favourable conservation condition of Grey Plover in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 18: Conservation objectives for [A142] occurring at this site

A142 Lapwing *Vanellus vanellus*

To maintain the favourable conservation condition of Lapwing in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 19: Conservation objectives for [A143] occurring at this site

A143 Knot *Calidris canutus*

To maintain the favourable conservation condition of Knot in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 20: Conservation objectives for [A149] occurring at this site

A149 Dunlin *Calidris alpina*

To maintain the favourable conservation condition of Dunlin in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 21: Conservation objectives for [A156] occurring at this site

A156 Black-tailed Godwit *Limosa limosa* **To maintain the favourable conservation condition of Black-tailed Godwit in Dundalk Bay SPA, which is defined by the following list of attributes and targets:**			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 22: Conservation objectives for [A157] occurring at this site

A157 Bar-tailed Godwit *Limosa lapponica* **To maintain the favourable conservation condition of Bar-tailed Godwit in Dundalk Bay SPA, which is defined by the following list of attributes and targets:**			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 23: Conservation objectives for [A160] occurring at this site

A160 Curlew *Numenius arquata*			
To maintain the favourable conservation condition of Curlew in Dundalk Bay SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 24: Conservation objectives for [A162] occurring at this site

A162 Redshank *Tringa totanus*			
To maintain the favourable conservation condition of Redshank in Dundalk Bay SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment (Generalised Additive Modelling (GAM)) was undertaken using waterbird count data collected through the Irish Wetland Bird Survey and other surveys. See the the SPA conservation objectives supporting document for further details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 25: Conservation objectives for [A179] occurring at this site

A179 Black-headed Gull *Chroicocephalus ridibundus*

To maintain the favourable conservation condition of Black-headed Gull in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment using (Generalised Additive Modelling (GAM)) could not be undertaken for this species due to an incomplete dataset. A measure of population change was calculated using the 'generic threshold' method. See Section 4 for more details of the SPA conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 26: Conservation objectives for [A182] occurring at this site

A182 Common Gull *Larus canus*

To maintain the favourable conservation condition of Common Gull in Dundalk Bay SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment using (Generalised Additive Modelling (GAM)) could not be undertaken for this species due to an incomplete dataset. A measure of population change was calculated using the 'generic threshold' method. See Section 4 of the SPA conservation objectives supporting document for more details
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 27: Conservation objects for [A184] occurring at this site

A184 Herring Gull *Larus argentatus*			
To maintain the favourable conservation condition of Herring Gull in Dundalk Bay SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trend assessment using (Generalised Additive Modelling (GAM)) could not be undertaken for this species due to an incomplete dataset. A measure of population change was calculated using the 'generic threshold' method. See Section 4 for more details of the SPA conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	As determined by regular low tide and other waterbird surveys. Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in Section 5 of the SPA conservation objectives supporting document

Table 28: Conservation for [A999] occurring at this site

A999 Wetlands & Waterbirds			
To maintain the favourable conservation condition of the wetland habitat in Dundalk Bay SPA as a resource for the regularly-occurring migratory waterbirds that utilise it. This is defined by the following attribute and target:			
Attribute	**Measure**	**Target**	**Notes**
Habitat area	Hectares	The permanent area occupied by the wetland habitat is stable and not significantly less than the areas of 8136, 4374 and 649 hectares respectively for subtidal, intertidal, and supratidal habitats, other than that occurring from natural patterns of variation. See map 6	As defined by SPA boundary to MLWM; MLWM to MHWM; and MHWM to SPA boundary (the latter value is minus the area of Lurgangreen Fields)

2.5.1.5 Conservation Status

A synopsis of the conservation status of this site is provided in Table 29.

Table 29: Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Gl
B	A054	Anas acuta			w	117	117	i		G	B	A	C	A
B	A052	Anas crecca			w	488	488	i		G	C	A	C	C
B	A050	Anas penelope			w	394	394	i		G	C	B	C	C
B	A053	Anas platyrhynchos			w	763	763	i		G	C	A	C	C
B	A395	Anser albifrons flavirostris			w	18	18	i		G	C	B	C	C
B	A043	Anser anser			w	435	435	i		G	B	B	C	A
B	A169	Arenaria interpres			w	56	56	i		G	C	B	C	C
B	A046	Branta bernicla			w	337	337	i		G	C	A	C	B
B	A067	Bucephala clangula			w	36	36	i		G	C	B	C	C
B	A149	Calidris alpina			w	11515	11515	i		G	B	A	C	A
B	A143	Calidris canutus			w	9710	9710	i		G	A	A	C	A
B	A147	Calidris ferruginea			c	16	16	i		G	C	B	C	B
B	A137	Charadrius hiaticula			w	147	147	i		G	C	A	C	B
B	A003	Gavia immer			w	9	9	i		G	C	B	C	C
B	A001	Gavia stellata			w	9	9	i		G	C	B	C	C
B	A130	Haematopus ostralegus			w	8712	8712	i		G	B	A	C	A
B	A182	Larus canus			w	555	555	i		G	C	A	C	B
B	A179	Larus ridibundus			w	6630	6630	i		G	C	A	C	B
B	A157	Limosa lapponica			w	1950	1950	i		G	B	A	C	A
B	A156	Limosa limosa			w	1067	1067	i		G	B	A	C	A
B	A069	Mergus serrator			w	121	121	i		G	B	A	C	A
B	A160	Numenius arquata			w	1234	1234	i		G	C	A	C	B
B	A017	Phalacrocorax carbo			w	97	97	i		G	C	A	C	C
B	A151	Philomachus pugnax			w	4	4	i		G	C	B	C	B
B	A151	Philomachus pugnax			c	9	9	i		G	C	B	C	B
B	A140	Pluvialis apricaria			w	5967	5967	i		G	B	A	C	A
B	A141	Pluvialis squatarola			w	204	204	i		G	B	A	C	A
B	A005	Podiceps cristatus			w	302	302	i		G	B	A	C	A
B	A048	Tadorna tadorna			w	492	492	i		G	B	A	C	A
B	A161	Tringa erythropus			c	3	3	i		G	C	B	C	C
B	A164	Tringa nebularia			w	16	16	i		G	C	B	C	C
B	A162	Tringa totanus			w	1489	1489	i		G	B	A	C	A
B	A142	Vanellus vanellus			w	14850	14850	i		G	B	A	C	A

2.5.2 Stabannan-Braganstown SPA (Site synopsis version date 06/09/10, Natura 2000 form update 09/2018, First Order Site-specific Conservation Objectives Version 1.0.

2.5.2.1 General Description

Stabannan-Braganstown SPA is situated approximately 4 km inland from Dundalk Bay in Co. Louth. It is a small, flat alluvial plain adjacent to the River Glyde and is bounded to the north and south by low, rolling hills. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Greylag Goose. The site is of ornithological importance as it supports an important population of Greylag Goose, which on occasion occurs in numbers of international importance. It is of note that three species that regularly occur at the site are listed on Annex I of the E.U. Birds Directive, i.e., Greenland White-fronted Goose, Whooper Swan and Golden Plover

2.5.2.2 Qualifying Interests

The Qualifying Interest (QI) of this site is

- Greylag Goose, *Anser anser*

2.5.2.3 Threats, pressures and activities with negative impacts on the site

Details as to the threats, pressures and activities with negative impacts on the site are identified from the Natura 2000 data form for the sites and are illustrated in Table 30.

Table 30: Threats, pressures and activities with impacts on the site

Negative Impacts

Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	A08		o
H	A08		i
H	A01		o
H	D01.02		i
H	A04		o

Positive Impacts

Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	A01		i
M	A01		o
M	A04		o
H	D01.02		i
H	A02		i
H	A04		i
H	A08		i
M	A08		o

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification, T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

2.5.2.4 Conservation Objectives

The primary conservation objective of this site (according to the First Order Site-specific Conservation Objectives Version 1.0) is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:

- Greylag Goose, *Anser anser*

2.5.2.5 Baseline Conservation Status

A synopsis of the conservation status of this site is provided in Table 31.

Table 31: Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
B	A395	Anser albifrons flavirostris			w	24	24	i		G	C	B	C	C
B	A043	Anser anser			w	1391	1391	i		G	A	A	C	A
B	A037	Cygnus columbianus bewickii			w	2	2	i		G	C	B	C	C
B	A038	Cygnus cygnus			w	60	60	i		G	C	B	C	C
B	A140	Pluvialis apricaria			w	876	876	i		G	C	B	C	C
B	A142	Vanellus vanellus			w	300	300	i		G	C	B	C	C

2.5.3 Dundalk Bay SAC (Site synopsis version date 31/01/14, Natura 2000 form update 10/2020, Conservation Objectives version 1.0)

2.5.3.1 General Description

This site is a large bay-like estuarine complex, extending c.15 km from north to south and on average between 2-3 km in width. It contains the estuaries of a number of moderately sized rivers, principally the Castletown, the Flurry, the Fane and the Glyde/Dee. These rivers drain fairly intensive agricultural catchments, and the Castletown flows through Dundalk town and serves the port. The site has a marked tidal range. The estuaries of the Castletown and Flurry rivers are well sheltered and have extensive salt marshes. Post-glacial raised beaches are a feature of the shoreline. Some agricultural fields which adjoin the bay are included in the site for ornithological interests. Estuaries and particularly intertidal sand and mud flats are well represented at this site. The site contains the largest expanse of intertidal flats on the east coast. The bay is fringed in places by salt marshes, with good examples of Salicornia sand flats, Atlantic salt meadows and, to a lesser extent, Mediterranean salt meadows. The quality of estuarine habitats is generally good. The site has excellent examples of perennial vegetation of stony banks with the Red Data Book plant Crambe maritima. The site is of high importance for wintering waterfowl, with internationally important populations of *Branta bernicla hrota*, *Calidris canutus* and *Limosa lapponica*. It also supports nationally important populations of a further 16 species including *Pluvialis apricaria*. The overall site is also of international importance as it regularly has in excess of 20,000 wintering waterfowl.

2.5.3.2 Qualifying Interests

The qualifying interests of the site are:

- [1130] Estuaries
- [1140] Mudflats and sandflats not covered by seawater at low tide
- [1220] Perennial vegetation of stony banks
- [1310] *Salicornia* and other annuals colonizing mud and sand
- [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- [1410] Mediterranean salt meadows (*Juncetalia maritimi*)

2.5.3.3 Threats, pressures, and activities with negative impacts on the site

Details as to the threats, pressures and activities with negative impacts on the site are identified from the Natura 2000 data form for the sites and are illustrated in Table 32.

Table 32: Threats, pressures, and activities with impacts on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
M	H05.01		b
M	H01.06		i
M	J02.04		b
L	H04.02		b
M	J02.01.03		b
M	J02.12.01		b
L	H05		b
M	K01.01		b
H	I01		b
M	K02		i
M	G05.02		b
M	G01		b
L	G01.01.01		b
M	J02.01.02		b
L	G02		b
M	K04.01		i
H	H01		b
H	E03.03		i
H	F02.03.01		b
M	J03.01		b
H	E03.01		i
M	F05		b
M	J03.02		b
M	J02.04.01		b
M	H02.06		b

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
M	M02.04		b
L	G02.09		i

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

2.5.3.4 Conservation Objectives of the site

A detailed Conservation Objectives Document has been prepared for this site and is available to download from:

https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000455.pdf

Details from this document are reproduced here. The Conservation Objectives of the site are outlined in Excerpts from the Conservation Objectives Document are presented in Table 33, Table 34, Table 35, Table 36, Table 37 and Table 38.

Table 33: Conservation objectives for [1130] within this site

1130 Estuaries			
To maintain the favourable conservation condition of Estuaries in Dundalk Bay SAC, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 2	Habitat area was estimated at 2799ha using OSI data and the defined Transitional Water Body area under the Water Framework Directive. See marine habitats supporting document for further information
Community distribution	Hectares	The Subtidal fine sand community complex should be conserved in a natural condition. See map 4	Habitat structure was elucidated from intertidal core and dig sampling undertaken in 2007 and 2008 combined with data obtained from subtidal grab samples obtained in 2009. See marine habitats supporting document for further information

Table 34: Conservation objectives for [1140] within this site

1140 Mudflats and sandflats not covered by seawater at low tide			
To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide at Dundalk Bay SAC, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 3	Habitat area was estimated at 4375ha using OSI data. See marine habitats supporting document for further information
Community distribution	Hectares	The Muddy fine sand community and Intertidal fine sand community complex should be conserved in a natural condition. See map 4	Habitat structure was elucidated from intertidal core and dig sampling undertaken in 2007 and 2008 combined with data obtained from subtidal grab samples obtained in 2009. See marine habitats supporting document for further information

Table 35: Conservation objectives for [1220} occurring within this site

1220 Perennial vegetation of stony banks

To maintain the favourable conservation condition of Perennial vegetation of stony banks in Dundalk Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable, subject to natural processes, including erosion and succession	Exact current area unknown, but shingle is known to occur almost continuously from Salterstown to Lurgan White House in the south bay and from Jenkinstown to east of Giles Quay in the north bay. Shingle is estimated to cover 12ha. Probably less than 25% of this would be vegetated. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes	See coastal habitats supporting document for further details
Physical structure: Functionality and sediment supply	Presence/absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Based on data from the national shingle beach survey conducted in 1999 (Moore and Wilson, 1999). See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of habitat zonations including transitional zones, subject to natural processes including erosion and succession. See map 5	Based on data from Moore and Wilson (1999). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain the presence of species-poor communities with characteristic species: *Honckenya peploides*, *Beta vulgaris* ssp. *maritima*, *Crithmum maritimum*, *Tripleurospermum maritimum*, *Glaucium flavum* and *Silene uniflora*	Based on data from Moore and Wilson (1999). See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Based on data from Moore and Wilson (1999). See coastal habitats supporting document for further details

Table 36: Conservation objectives for [1310] occurring within this site

1310 *Salicornia* and other annuals colonizing mud and sand

To restore the favourable conservation condition of *Salicornia* and other annuals colonizing mud and sand in Dundalk Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site surveyed: 35.00ha. See map 5	Based on data from the Saltmarsh Monitoring Project (McCorry and Ryle, 2009). One sub-site (Dundalk Bay) was mapped, giving a total estimated area of 35ha for Salicornia mudflat, which is one of the largest areas of this habitat in the country. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details.
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 5 for known distribution	See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions	See coastal habitats supporting document for further details
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession. See map 5	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from McCorry and Ryle (2009)
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry and Ryle (2009)
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with characteristic species listed in Saltmarsh Monitoring Project (McCorry & Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation structure: negative indicator species - *Spartina anglica*	Hectares	No significant expansion of *Spartina*. No new sites for this species and an annual spread of less than 1% where it is already known to occur	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details

Table 37: Conservation objectives for [1330] occurring at this site

1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

To maintain the favourable conservation condition of Atlantic salt meadows in Dundalk Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For the sub-site (357.57ha) and potential areas (22.42ha) mapped: 379.98ha. See map 5	Based on data from the Saltmarsh Monitoring Project (McCorry and Ryle, 2009). One sub-site (Dundalk Bay) was mapped and additional areas of potential saltmarsh were identified from an examination of aerial photographs, giving a total estimated area for Atlantic salt meadow of 379.98ha. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further information
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 5 for known distribution	See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions	See coastal habitats supporting document for further details
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession. See map 5	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from McCorry and Ryle (2009)
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry and Ryle (2009)
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with characteristic species listed in Saltmarsh Monitoring Project (McCorry & Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation structure: negative indicator species-*Spartina anglica*	Hectares	No significant expansion of *Spartina*. No new sites for this species and an annual spread of less than 1% where it is already known to occur	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details

Table 38: Conservation objectives for [1410] occurring at this site

1410 Mediterranean salt meadows (*Juncetalia maritimi*)

To maintain the favourable conservation condition of Mediterranean salt meadows in Dundalk Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: 0.045ha. See map 5	Based on data from the Saltmarsh Monitoring Project (McCorry and Ryle, 2009). One sub-site (Dundalk Bay) was mapped, giving a total estimated area of 0.045ha for Mediterranean salt meadow. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, subject to natural processes. See map 5 for known distribution	See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions	See coastal habitats supporting document for further details
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession. See map 5	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from McCorry and Ryle (2009)
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry and Ryle (2009)
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with characteristic species listed in Saltmarsh Monitoring Project (McCorry & Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation structure: negative indicator species- *Spartina anglica*	Hectares	No significant expansion of *Spartina*. No new sites for this species and an annual spread of less than 1% where it is already known to occur	Based on data from McCorry and Ryle (2009). See coastal habitats supporting document for further details

2.5.3.5 Baseline Conservation Status of the site

A synopsis of the conservation status of this site is provided in Table 39 and Table 40.

Table 39: Habitat types present on the site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A|B|C|D	A|B|C		
						Representativity	Relative Surface	Conservation	Globa
1130			2798.9715		M	B	B	B	B
1140			4374.8559		M	A	A	B	A
1220			52.36		M	A	C	B	A
1310			35.0037		M	B	C	B	B
1330			379.9836		M	A	C	B	A
1410			0.0447		M	C	C	B	C

Table 40: Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them (please note that this N2000 form is taken from the EU data-source, and information regarding Killarney Fern is absent

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Gl
B	A054	Anas acuta			w	100	100	i		G	B	A	C	A
B	A052	Anas crecca			w	359	359	i		G	C	B	C	C
B	A050	Anas penelope			w	565	565	i		G	C	B	C	C
B	A053	Anas platyrhynchos			w	657	657	i		G	C	A	C	B
B	A043	Anser anser			w	312	312	i		G	B	B	C	B
B	A169	Arenaria interpres			w	51	51	i		G	C	B	C	C
B	A046	Branta bernicla			w	366	366	i		G	C	A	C	A
B	A149	Calidris alpina			w	9112	9112	i		G	B	A	C	A
B	A143	Calidris canutus			w	11948	11948	i		G	A	A	C	A
B	A137	Charadrius hiaticula			w	133	133	i		G	C	A	C	B
B	A130	Haematopus ostralegus			w	6940	6940	i		G	B	A	C	A
B	A157	Limosa lapponica			w	2313	2313	i		G	B	A	C	A
B	A156	Limosa limosa			w	754	754	i		G	B	A	C	A
B	A070	Mergus merganser			w	148	148	i		G	B	A	C	B
B	A160	Numenius arquata			w	1593	1593	i		G	C	A	C	B
B	A017	Phalacrocorax carbo			w	91	91	i		G	C	B	C	C
B	A140	Pluvialis apricaria			w	4266	4266	i		G	B	A	C	B
B	A141	Pluvialis squatarola			w	218	218	i		G	B	A	C	A
B	A005	Podiceps cristatus			w	193	193	i		G	B	A	C	A
B	A048	Tadorna tadorna			w	463	463	i		G	B	A	C	B
B	A164	Tringa nebularia			w	20	20	i		G	B	A	C	B
B	A162	Tringa totanus			w	1455	1455	i		G	B	A	C	A
B	A142	Vanellus vanellus			w	4822	4822	i		G	B	A	C	B

2.6 Identification and evaluation of likely significant effects

2.6.1 Description of source-pathway-receptor linkages and identification of "Zone of Influence"

The basis for identifying potential impacts/significance thereof and defining the zone of influence is the "Source-Pathway-Receptor" (S-P-R) model. This model underpins all water-protection schemes in Ireland, as well as the EU Water Framework Directive on which both surface water and groundwater regulations are based. This model is applied to all possible impacts (i.e., not just water-based impacts). When examining S-P-R relationships in regard to impacts on Natura 2000 sites, the main questions to be considered are:

1) Source characterisation – Identification of potential source(s) of the impact(s);
2) Pathways analysis – Identification of means through which potential impacts could take place, for example is there a hydrogeological or hydrological link that can deliver a pollutant source to a nearby receptor; and
3) Receptor identification – identification of Natura 2000 sites/qualifying interests potentially affected.

Therefore, the key questions to be considered are:

1) Is there any source(s) of impact(s) associated with the proposed plan?
2) Is there a pathway present between the source of impact and a Natura 2000 site;
3) What are the Natura 2000 sites/qualifying interests potentially impacted upon?

2.6.1.1 Sources of potential impacts

Water in Lough Bracken eventually discharges to Dundalk Bay, the primary component of two Natura 2000 sites, the conservation status of the Qualifying Interests of which are directly, or indirectly dependent on water quality. The primary potential sources of impact are:

- Impacts associated with ground/surface water quality;

Lough Bracken is in a different catchment than the Stabannan-Braganstown SPA. As a result, there is no significant potential for impacts on this site associated with changes in water quality.

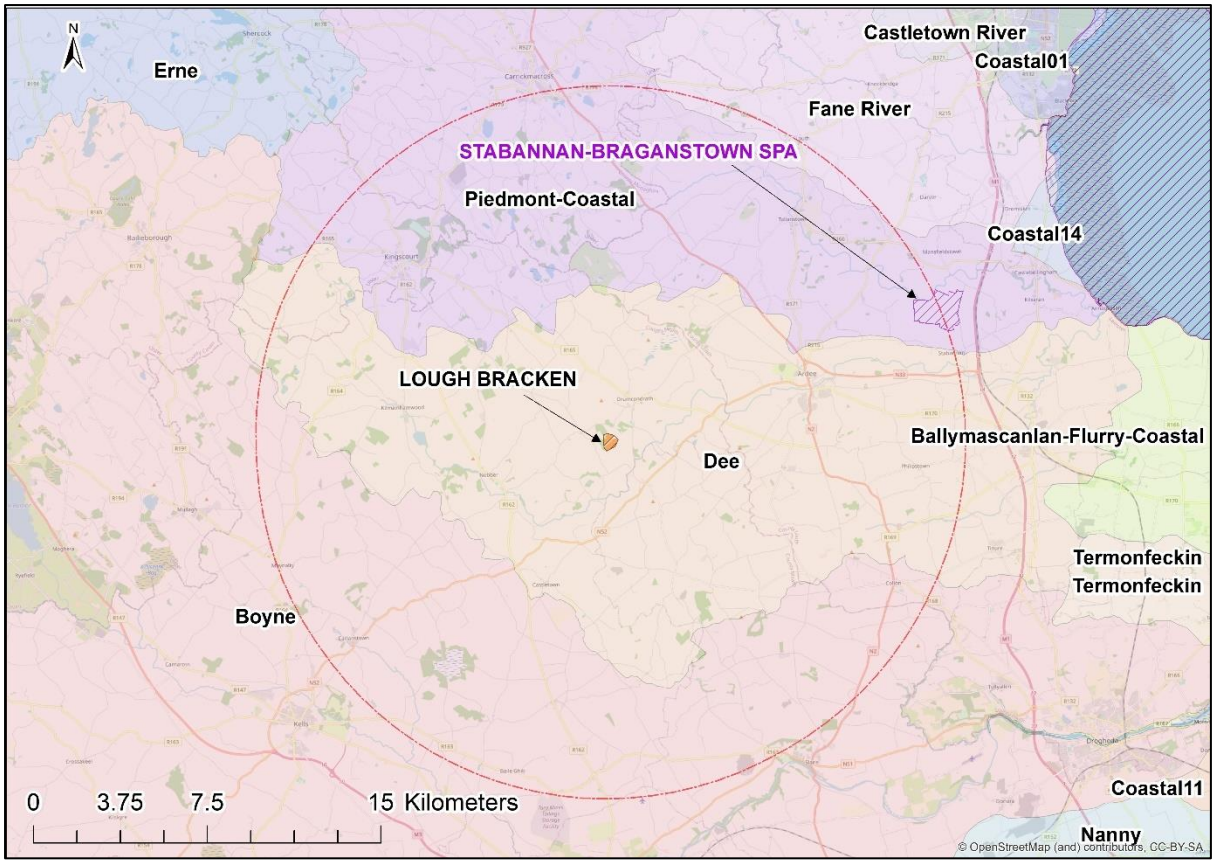

Figure 21: Map indicating location of Lough Bracken relative to catchments

The primary aspects of the plan and potential as regard source of impacts are outlined as follows

- Angling Stands - will encourage use of stands rather than the shore of the lake, reducing erosion and improving water quality;
- Walking Tracks – will encourage use of dedicated tracks, discouraging desire lines and reducing erosion of bank and improving water quality;
- Child-safe swimming area - A child safe swimming area is proposed. This floating pier will create an enclosure/edge at shallow depths to allow children ease of access and to ensure it is as safe as possible – no impacts on water quality foreseen;
- Bird Hides – installation of bird hides - no impacts on water quality foreseen;
- Fencing - Treated posts and rail fences are to be constructed along the lake's southern and eastern shoreline. These will be placed at a contour at least 600cm above the high-water level of the lake - no impacts on water quality foreseen;
- Picnic and Amenity areas - Adjacent to the existing car park, the area of unused amenity grassland is proposed as a picnic area with a toilet and changing room facility. Proposed is a universal access compost toilet. The use of composting toilets will not have any impact on water quality and will reduce the level of toileting in the general vicinity – possibly improving water quality;
- Carpark, cycling and signage - The car park is approximately 0.1 hectares of tarmac with kerbing surrounding the edges. The western edge of the car park is bounded by a small area of amenity grassland that appears to be unmanaged. This is fringed to the west by semi-mature and mature trees. The car park was seen to be in good condition overall. The surface is largely intact and suitable for use. The facilities should include a secure bicycle-parking rack. Signage is proposed to be installed to inform a range of visitors at Lough Bracken. The informing of the public that Lough Bracken is the source of drinking water for Drumconrath will likely decrease the instances of fly-tipping, etc., as people may be unaware of the importance of the lake;
- Playground - The current amenity grassland will also provide space for a universal access children's playground. Nature-based play structures will include slides, swings and a climbable castle structure – no negative impact on water quality foreseen; and
- Tree planting - Clearance of non-native commercial conifers around the car park and around the lake's eastern shoreline will provide opportunities for ecological enhancement, particularly tree planting. Opportunities exist for planting oaks along with other natives including Birch, Rowan and Holly. Tree planting of this nature will have a positive impact on water quality.

One of the aims of the measures comprising the plan are to "guide" visitors, which will indirectly reduce "off-track" impacts associated with erosion and/or disturbance. There are no potential negative impacts on water quality (of the Killadden watercourse) associated with the proposed plan.

2.6.1.2 Presence of pathway and receptor

The water in Lough Bracken eventually discharges to Dundalk Bay, the primary constituent of the Dundalk Bay SAC and SPA, there is therefore a pathway and receptor present.

2.6.1.3 Natura 2000 site(s) with potential to be impacted upon and Zone of Influence

Given the lack of source(s) of potential significant impacts, there is no potential for significant negative impacts on the Conservation Objectives of the Qualifying Interests of Stabannan-Braganstown SPA, Dundalk Bay SPA or Dundalk Bay SAC.

2.6.2 Sources of potential Direct, Indirect or Secondary Impacts

2.6.2.1 Direct Impacts

There is no habitat for which any relevant Natura 2000 sites are designated that will be lost through land-take, etc. associated with the proposed development. There are no direct impacts foreseen.

2.6.2.2 Indirect Impacts

There is no significant potential for indirect impacts given the nature, scale and location of the proposed plan area.

2.6.2.3 Secondary and or Residual Impacts

In the absence of any direct/indirect impacts, there is no potential for residual impacts

A summary of the potential for primary impacts upon Natura 2000 sites within the zone of influence of the proposed plan is summarized in Table 41 and Table 42.

Table 41: Summary of the potential for impacts upon Natura 2000 sites.

Site Name	Direct Impacts	Indirect/ Secondary Impacts	Resource requirements (water abstraction etc.)	Emissions (to land, water or air)	Excavation requirements	Duration of construction, operation and decommissioning
Stabannan-Braganstown SPA	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen
Dundalk Bay SPA	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen
Dundalk Bay SAC	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen

Table 42: Summary of the potential for changes to Natura 2000 sites.

Site Name	Reduction of habitat area	Disturbance to key species	Habitat/species fragmentation	Reduction in species density	Changes in Key Indicators of Conservation Value	Climate change
Stabannan-Braganstown SPA	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen
Dundalk Bay SPA	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen
Dundalk Bay SAC	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen

2.6.3 Potential cumulative/in-combination impacts in association with other plans

Article 6(3) of the Habitats Directive requires an assessment of a plan/project to consider other plans/projects that might, in combination with the proposed plan/project, have the potential to adversely impact upon Natura 2000 sites. Any plan/project with the potential to impact on water quality/hydrology within the zone of influence and any plan/project with the potential to have an impact through disturbance has the potential to have cumulative/in-combination impacts.

Table 43: Potential cumulative impacts.

Plan/Project	Purpose	Cumulative impact
EU Water framework Directive	Maintain and enhance water quality within the EU	None predicted
EU Freshwater Fish Directive	Protect freshwater bodies within the EU suitable for sustaining fish populations	None predicted
EU Groundwater Directive	Maintain and enhance the quality of groundwater within the EU	None predicted
EU Floods Directive	The Floods Directive applies to river basins and coastal areas at risk of flooding	None predicted
Nitrates Directive	Reducing water pollution within the EU	None predicted
Urban Waste-water treatment Directive	Protecting the environment from adverse impacts of waste-water discharge	None predicted
Sewage Sludge Directive	Regulate the use of sewage sludge	None predicted
The IPPC Directive	To achieve a high level of environmental protection	None predicted
National Development Plan	To promote more balanced spatial and economic development	None predicted
National Spatial Strategy	To achieve a better balance of social, economic and physical development across Ireland	None predicted
Eastern CRFAM	Long-term planning for reducing and managing flood risk	None predicted
Local Area Development Plans	Various	None predicted
Meath County Development Plans	Sustainable development of Counties Louth and Meath	None predicted
Quarrying activities, water abstraction, discharge, etc	Various	None predicted
Current and future planning permissions –	Various	None predicted
Part 8's	Various	None predicted
Land spreading of organic waste by farmers in the locality	Fertilising land, disposing of organic waste	None predicted

As regards any cumulative impacts, **all** future developments must be subject to the Appropriate Assessment process. Given the scale and nature of the proposed development, there is no potential for cumulative impacts. The proposed enhancements will almost certainly improve the water quality of Lough Bracken There are no recent (most recent is 2018) planning permission applications in the immediate vicinity of the Lough Bracken (see Figure 22).

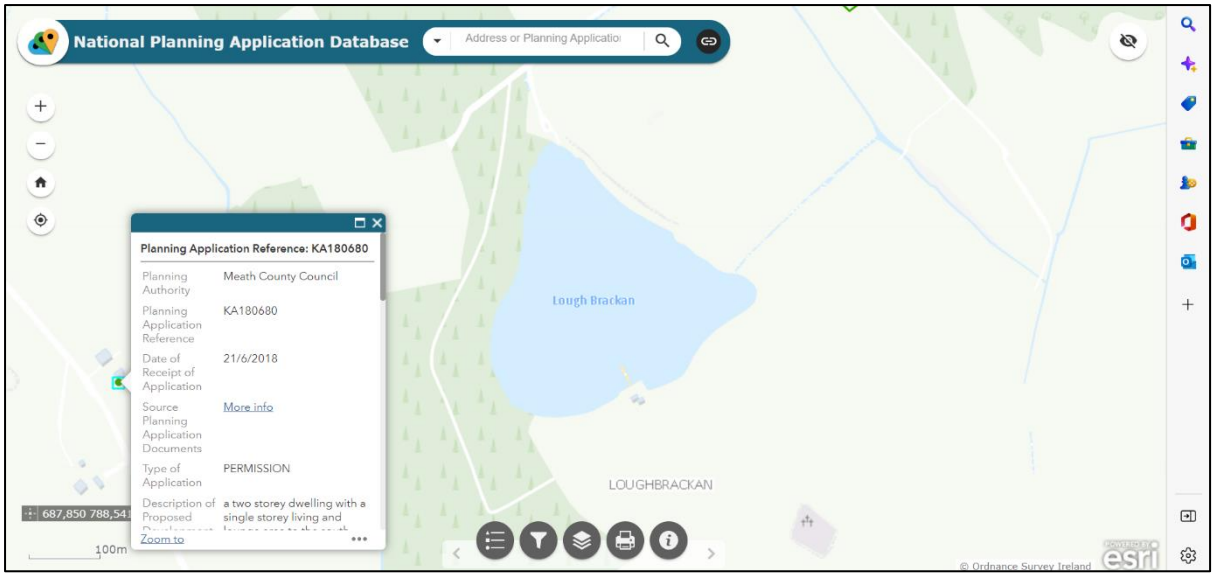

Figure 22: Excerpt from NAPD online resource illustrating planning permission applications

2.6.4 "Do nothing" scenario

There are no significant potential negative impacts identified. The do-nothing scenario will likely result in a long-term decrease in the ecological and amenity value of the site relative to the proposed plan.

2.6.5 Gauging of Impacts on Natura 2000 sites – Integrity of site checklist

The potential impacts of the proposed development on Natura 2000 sites are gauged using a checklist, which aids in determining the potential of development to have a significant impact on any Natura 2000 site. This checklist consists of a number of pertinent questions as set out in Table 44.

Table 44: Potential of the proposed development to impact on Natura 2000 sites in the absence of suitable mitigation/preventative measures

Does the Plan have the potential to:	**Yes/No**
Cause delays in progress towards achieving the conservation objectives of the Natura 2000 site?	NO
Interrupt progress toward achieving the conservation objectives of the Natura 2000 site?	NO
Disrupt those factors helping to maintain the favourable conditions at the Natura 2000 site?	NO
Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the Natura 2000 site?	NO
Cause changes to the vital defining aspects (e.g., nutrient balance) that determine how the Natura 2000 site functions as a habitat or ecosystem?	NO
Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the Natura 2000 site?	NO
Interfere with predicted or expected natural changes to the Natura 2000 site (such as water dynamics or chemical composition)?	NO
Reduce the area of key habitats within the Natura 2000 site?	NO
Reduce the population of key species of the Natura 2000 site?	NO
Alter the balance between key species of the Natura 2000 site?	NO
Reduce the biodiversity of the Natura 2000 site?	NO
Result in disturbance that could affect population size or density or the balance between key species within the Natura 2000 site?	NO
Result in fragmentation?	NO
Result in the loss or reduction of key features of Natura 2000 sites?	NO

2.7 Conclusions of screening

According to the guidance published by the NPWS (DoEHLG, 2009), Screening for Appropriate Assessment can either identify that a Natura Impact Statement (NIS) is not required where:

(1) A project/proposal is directly related to the management of the site; or

(2) There is no potential for significant impacts affecting the Natura 2000 network

Where the screening process identifies that significant impacts are certain, likely or uncertain the project must either proceed to Stage II Appropriate Assessment or be rejected.

The potential impacts that could arise from the proposed Lough Bracken enhancement feasibility study and Landscape Master Plan have been examined in the context of a number of factors that could potentially impact upon the integrity of the Natura 2000 network. On the basis of the findings of this Screening for Appropriate Assessment, it is concluded that the proposed plan:

(1) Is not directly connected with or necessary to the management of a Natura 2000 site and

(2) Does not have the potential to have significant negative impacts on the Natura 2000 network.

Following an examination, analysis and evaluation of the relevant information and the potential for significant effects on the conservation objectives of Natura 2000 sites, and applying the Precautionary Principle, it is, in the professional opinion of the author of this report, possible to exclude (on the basis of objective information and in the absence of specific prescribed precautionary/mitigation measures) that the proposed plan individually or in combination with other plans or projects, will have any significant potential to have negative impacts on the Natura 2000 network.

In accordance with Article 6(3) of the Habitats Directive, a Stage 2 Appropriate Assessment and the preparation of a Natura Impact Statement is not required in this instance.

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www.npws.ie – website of the National Parks and Wildlife Service, source of information for data regarding Natura 2000 sites and Article 17 Conservation Assessments.

www.europa.eu – official website of the European Union, source of information on EU Directives.