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OFFALY COUNTY COUNCIL LOCAL AUTHORITY BIODIVERSITY ACTION PLAN 2025-2030

Appropriate Assessment Screening Report

Prepared for:

Offaly County Council

Comhairle Chontae Uíbh Fhailí
Offaly County Council

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Local Authority Biodiversity Action Plan AA Screening Report for Offaly County Council

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Abstract: Fehily Timoney and Company is pleased to submit this AA Screening Report to Offaly County Council for their Local Authority Biodiversity Action Plan.

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

1.1 Introduction

Fehily Timoney and Company (FT) was commissioned by Offaly County Council to prepare an Appropriate Assessment Screening Report for their Local Authority Biodiversity Action Plan (LABAP) for the years 2025-2030. The aim of the LABAP is to promote biodiversity conservation at local authority level.

This report presents an examination of whether the LABAP is likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and is based on best available scientific knowledge. This report has been prepared to inform the competent authority in completing their statutory obligations in relation to Appropriate Assessment, as required by Article 6(3) under Council Directive 92/43/EEC (Habitats Directive).

1.2 Background to Biodiversity Action Plans

LABAPs must be prepared in accordance with The Heritage Council's Local Authority Biodiversity Action Plan Guidelines (2024). Thes guidelines provide best practice guidance to local authorities on preparing and implementing biodiversity conservation actions within their functional area. These guidelines advise that LABAPS 'should aim to record, conserve, restore and promote biodiversity, and to increase awareness, understanding and appreciation of it among the people of the area.'

LABAPS are designed to provide a structured approach to biodiversity conservation at local level. Local authorities are required to develop a compelling vision for their LABAP and a set of clear, measurable and achievable objectives for biodiversity conservation in their functional area. LABAPs are developed by local authority Biodiversity Officers with the support of a dedicated Biodiversity Working Group. Public engagement and consultation must be undertaken at the Pre-draft and Draft Plan stages of the Plan-making process. All submissions from stakeholders and members of the public should be considered during the development of a LABAP.

LABAPs should serve to define targeted and focussed action for promoting biodiversity conservation through the functions of a local authority in alignment with nature legislation and higher order policy such as the 4th National Biodiversity Action Plan and inter-related policy. LABAPs should be in harmony with and support the land use planning framework, including City and County Development Plans and Local Area Plans.

LABAPs are non-statutory land use plans that should be screened for the need for SEA and AA.

1.3 Legislative Context

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive) provides legal protection for habitats and species of European importance. The Directive requires that where a plan or project is likely to have a significant effect on a European Site, while not directly connected with or necessary to the nature conservation management of the site, it will be subject to 'Appropriate Assessment' to identify any implications for the European site in view of the site's Conservation Objectives. Specifically, Article 6(3) of the Habitats Directive states:

> *"6(3) Any plan or project not directly connected with or necessary to the management of the site (Natura 2000 sites) but likely to have 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."*

These requirements are implemented in the Republic of Ireland by the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) and the Planning and Development Act 2000 (as amended).

The competent authority must carry out a screening for appropriate assessment to assess, in view of best scientific knowledge, if the proposed plan, individually or in combination with another plan or project is likely to have a significant effect on the European site. If it cannot be excluded, on the basis of objective information, that the proposed plan, individually or in combination with other plans or projects, will have a significant effect on a European site, an appropriate assessment of its implications for the European Site(s) in view of the Site's conservation objectives must be carried out.

The provisions of Article 6(3) do not apply where the proposed plan or project is 'connected with or necessary to the management of the site'. In this case, the plan is not directly connected with or necessary to the management of any European site(s).

1.4 Guidance

The assessment was conducted in accordance with the following guidance:

- Fossitt, J. A. (2000). A guide to habitats in Ireland. Heritage Council/Chomhairle Oidhreachta.
- Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. National Parks and Wildlife Service (NPWS), Department of the Environment, Heritage and Local Government, Dublin (2009, updated 2010);
- Interpretation Manual of European Union Habitats. Version EUR 28. European Commission 2013;
- Scottish Natural Heritage. (2016). Assessing Connectivity with Special Protection Areas (SPAs) Guidance.
- Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC. European Commission (2019). Brussels, (2019/C 33/01). OJ C 33, 25.1.2019.

- 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, Office for Official Publications of the European Communities, Luxembourg (European Commission, 2002). This document was updated by Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Commission Notice (2021) Brussels, 28.9.2021 C (2021) 6913 final;
- OPR Practice Note PN01 Appropriate Assessment Screening for Development Management, Office of the Planning Regulator (2021).
- Atkinson, S., Magee, M., Moorkens, E.A. & Heavey, M. (2024). Guidance on Assessment and Construction Management in Margaritifera Catchments in Ireland. https://e-mussels.eu/europe/conservation-guidelines

1.5 Assessment Process and Approach

The process of determining the likelihood of significant effects from a proposed plan or project on European sites is an iterative process centred around a Source-Pathway-Receptor (S-P-R) model. In order for an effect to be established, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism is sufficient to conclude that a potential effect is not of any relevance or significance.

- Source(s) – e.g., pollutant run-off, noise, removal of vegetation etc.;
- Pathway(s) – functional link, or ecological pathway e.g., groundwater connecting to nearby qualifying wetland habitats; and,
- Receptor(s) –the qualifying habitats and species of European sites and ecological resources supporting those habitats/species.

In the context of this report, a source is any identifiable element of the proposed plan that is known to interact with the receiving environment. A receptor is the Qualifying Interests (QI)[1] for an SAC or Special Conservation Interests (SCI)[2] for an SPA or an ecological feature that is known to be utilised by the QI/SCI. In practice, the term Qualifying Interests also applies to SCIs (and is used in this document for simplicity). A pathway is any connection or link between the source and the receptor.

The assessment commences with a description of the plan, and the associated sources for impacts to the receiving environment. The type of impacts that are likely due to the plan (Source) are identified having regard to the spatial and temporal scale of the plan, resource requirements and likely emissions. These sources are then used to define the zone of influence (ZoI) of the plan.

[1] SACs are areas designated under the Habitats Directive to conserve habitats listed in Annex I of the Directive and plant and animal species listed in Annex II. Collectively these are referred to as the 'Qualifying Interests' or 'QIs' of the SAC.
[2] SPAs are sites classified under the Birds Directive to protect rare or vulnerable bird species listed in Annex I to the Directive as well as regularly occurring migratory species and wetlands. Wetland habitats that support internationally important populations of migratory birds may be coastal or inland. Collectively, these species and habitats are referred to as the 'Special Conservation Interests' of the SPA.

The European Commission Notice (2021) on the 'Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC, states that in identifying European sites (Natural 2000 sites), which may be affected by a plan or project, the following should be identified:

- Any European sites geographically overlapping with any of the actions or aspects of the plan or project in any of its phases, or adjacent to them;
- Any European sites within the likely zone of influence of the plan or project. European sites located in the surroundings of the plan or project (or at some distance) that could still be indirectly affected by aspects of the plan project, including as regards the use of natural resources (e.g., water) and various types of waste, discharge or emissions of substances or energy;
- European sites whose connectivity or ecological continuity can be affected by the plan or project.

The zone of influence of a plan is the geographical area over which it could affect the receiving environment in a way that could have potential effects on the Qualifying Interests of a European site. The OPR (2021) practice note states that the Zone of Influence must be established on a case-by-case basis using the Source-Pathway-Receptor (S-P-R) framework and not by arbitrary distances (such as 15 km). Section 3.3 sets out the detailed rationale for the identification of relevant European sites within the ZoI based on the sources of impacts arising from the proposed plan. Subsequently, an assessment is undertaken with respect to potential connectivity (Pathways) to European Sites and their qualifying interests/special conservation interests are identified.

The potential for in-combination impacts with other plans and projects is also assessed having regard to the identified impacts of the proposed plan along the ecological pathways identified to European sites.

The likelihood of significant effects on the European Sites within the ZoI is examined having regard to the sensitivity of each European site with pathways for impacts associated with the proposed plan on its own and in combination with other plans and projects.

Having regard to the European Commission Communication on the Precautionary Principle (European Commission, 2021) the:

"absence of scientific evidence on the significant negative effect of an action cannot be used as justification for approval of this action. When applied to Article 6(3) procedure, the precautionary principle implies that the absence of a negative effect on Natura 2000 sites has to be demonstrated before a plan or project can be authorised. In other words, if there is a lack of certainty as to whether there will be any negative effects, then the plan or project cannot be approved."

Where significant effects are determined to be likely, or where there is uncertainty regarding the likelihood of significant effects, the plan will be required under law to be subjected to Appropriate Assessment.

2. DESCRIPTION OF THE LOCAL AUTHORITY BIODIVERSITY ACTION PLAN

2.1 Local Authority Biodiversity Action Plan

The overarching aim of the LABAP is to record, conserve, restore and promote biodiversity, and to increase awareness, understanding and appreciation of it among the people of the area.

The following Strategic Objectives are defined in the LABAP:

- Surveys + Monitoring
- Action for Biodiversity
- Alien Invasive Species
- Building Resilience
- Awareness + Engagement

A series of Actions have been defined in the LABAP under each Strategic Objective. The higher-level Objectives are broader in scope, while the Actions underpinning the Objectives are more defined and measurable. These are presented in Table 2-1.

Table 2-1: LABAP Strategic Objectives and Actions

Objective	Action Code	Action
Surveys + Monitoring	1	Support Citizen Science Initiatives to encourage awareness and recording of species together with the National Biodiversity Data Centre.
	2	Commission a full county wetland survey.
	3	To conduct baseline surveys/assessments and develop a masterplan for management of biodiversity at/along new amenity infrastructure (i.e. greenways, bike trails)
	4	Create "Offaly Ecological Network" map + site list, of all sites of ecological importance in the county to include, Natura 2000 sites, NHA/pNHAs and locally important sites.
	5	Implement a process to monitor the changes resulting in the implementation of the All-Ireland Pollinator Plan actions at council level.
	6	Commission ecological surveys to help inform county policy and related projects.
	7	Work to enhance quarry habitats for biodiversity following the end of commercial extraction through the planning process.
Action for Biodiversity	8	Establish Offaly County Council Biodiversity Action Plan Implementation Group.
	9	Create an Offaly County Council flagship site managed for biodiversity in the Edenderry MD, akin to that of Tullamore Wetlands and Syngefield Demesne.
	10	Create Management Plans for Syngefield Demesne, Bludndell Park and Tullamore Wetlands.
	11	Formalise policy to ban glyphosate-based herbicide by OCC (except for specific circumstances - Invasive Species eradication).
	12	Enhance biodiversity potential of OCC parks (creating site specific plans where required).
	13	Create and agree 10-year plans for burial grounds to protect and improve species diversity.
	14	Support local communities with the creation + implementation of Biodiversity Action Plans.
	15	Work with faith communities to identify lands within respective dioceses suitable to implement biodiversity measures in collaboration with local parish and communities.
	16	Implement the recommendations of the Offaly Hedgerow Survey 2024.
	17	Implement the recommendations of the Offaly Tree Guidelines 2023 - 2028.
	18	Support ENGOs, landowners and local communities in the delivery of conservation initiatives for priority species.

Objective	Action Code	Action
	19	Support ENGOs, landowners and local communities in the conservation of existing wetlands and creation of new aquatic habitats.
	20	Implement actions of the All-Ireland Pollinator Plan for Councils.
	21	Support initiatives under the Water Framework Directive that contribute to the restoration of ecology in water bodies, and the Blue Dot Catchments Programme.
	22	Protect existing and maximise nesting opportunities arising from new developments for Swift, House Sparrow, House Martin, Swallow, bats & insects.
Alien Invasive Species	23	Continue control of invasive flora and fauna species - Japanese Knotweed and Himalayan Balsam being the two main AIS plant species of concern in Offaly.
	24	Prioritise the assessment and management of new IAS discoveries in the county in collaboration with other counties + agencies.
	25	Support research and monitoring projects focusing on AIS in Offaly
	26	Upgrade the county alien invasive species management strategy/GIS Mapping
Building Resilience	27	Undertake review of Ecological Network Map (see Action 4) to identify important biodiversity corridors/stepping stones and gaps and pinch-points which may be addressed to create and enhance connectivity for biodiversity between sites.
	28	Work with relevant agencies annually to continue to assess wildfire risk to bogs and upland habitats and management of same.
	29	Consider provision being made for Biodiversity Net Gain (BNG) for planning applications, to be included in the next County Development Plan.
	30	Include climate resilience and future proofing into new biodiversity projects, plans and policies.
	31	Undertake study to identify the habitats and species most at risk from climate change in the county.
	32	Explore funding models for carbon offsetting to fund local wetland and woodland development.
	33	Develop targeted county policies which will result in improved habitats and benefit biodiversity (e.g. Light and Nocturnal Species).
	34	Promote the use of Nature Based Solutions (NBS) in local authority projects.

Objective	Action Code	Action
Awareness + Engagement	35	Support the establishment and work of voluntary biodiversity groups carrying out citizen science projects in Offaly, such as an Offaly Bat Group.
	36	Create county policy on bat friendly lighting.
	37	Plan annual schedule of OCC staff biodiversity training.
	38	Plan an annual schedule of biodiversity training and awareness raising events for relevant community groups/public.
	39	Pilot a biodiversity initiatives in a social housing scheme which may include; green roofs, green walls, wetland & ponds SUDS, green carparking, nest boxes in facades, wildflower meadows and wildlife friendly shrubs and trees in open space.
	40	All Council housing, parks and infrastructure projects to include biodiversity enhancement proposals.
	41	Research + support the creation of a biodiversity demonstration garden with a community partner.
	42	Initiate a project in collaboration with farming groups to highlight and celebrate the importance of farmland for biodiversity.
	43	Promote and expand the delivery of the Green Schools Programme in the county.
	44	Promote and expand the delivery of the Heritage in Schools Programme in the county.
	45	Advocate for the protection + enhancement of nature and spaces for nature in Offaly through print, broadcast, social media and through other media such as podcasts, online video and short films.
	46	Work with Local Enterprise Office Offaly to promote biodiversity friendly initiatives as part of sustainable economic development.
	47	Work with OCC Culture and Creativity Team to promote biodiversity through creative projects, and with support from the Creative Ireland programme.
	48	Work with all OCC sections to make biodiversity enhancements where opportunities arise (e.g. Regeneration, Roads).
	49	Conduct awareness campaign on the importance of stone walls/structures for biodiversity
	50	Build links with sports clubs and promote adoption of biodiversity positive measures on club grounds (i.e. through the GAA Green Clubs Programme).

2.2 Relationship with other relevant Plans and Programmes

The LABAP sits within a hierarchy of plans and has been informed by and is consistent with the aims and objectives of other plans, programmes and strategies developed at national, regional and local levels. These include, but are not limited to, the following:

National Level

- Project Ireland 2040 : National Planning Framework (2018).
- Heritage Ireland 2030: A Framework for Heritage (2022).
- Heritage Council Strategic Plan 2023-2028 (2023).
- The 4th National Biodiversity Plan 2023 - 2030 (2024) (discussed further in Section 2.1.1 below).
- Climate Action Plan (2024).

Regional and Local Level

- Regional Spatial and Economic Strategy for the region.
- The County Development Plan for the local authority functional area.
- The Local Authority Climate Action Plan for the local authority functional area.
- The Heritage Plan for the local authority functional area.

2.2.1 The 4th National Biodiversity Action Plan 2023-2030

Ireland's 4th National Biodiversity Action Plan (NBAP) sets the national biodiversity agenda for the period 2023-2030 and aims to deliver the transformative changes required to protect and value nature. The aim is to ensure that every citizen, community, business, local authority, semi-state and state agency has an awareness of biodiversity and its importance, and of the implications of its loss, while also understanding how they can act to address the biodiversity emergency as part of a renewed national effort to 'act for nature.' This plan provides the overarching arching framework for delivering biodiversity conservation through LABAPs.

This National Biodiversity Action Plan 2023-2030 builds upon the achievements of the previous Plan. The five overarching objectives to address new and emerging issues include the following:

- Objective 1 - Adopt a Whole of Government, Whole of Society Approach to Biodiversity
- Objective 2 - Meet Urgent Conservation and Restoration Needs
- Objective 3 - Secure Nature's Contribution to People
- Objective 4 - Enhance the Evidence Base for Action on Biodiversity
- Objective 5 - Strengthen Ireland's Contribution to International Biodiversity Initiatives

The NBAP contains actions pertaining to the preparation to LABAPs under *Objective One: Adopt a Whole-of-Government, Whole-of-Society Approach to Biodiversity* and *Objective Three: Secure Nature's Contribution to People*, including the following:

Table 2-2: NBAP Actions pertaining to the preparation to Local Biodiversity Plans

Action Number	Action
1C5	The Heritage Council will publish updated guidelines for the production of Local Biodiversity Action Plans and their integration with City and County Development Plans
1C6	All Local Authorities will have a Biodiversity Action Plan adopted by the end of 2026 which is subject to regular review and revision processes in line with relevant guideline standards
3A3	Local Authorities will work to identify and respond to opportunities for enhancing the biocultural value of GBUE through appropriate design strategies, the use of visual and performing arts, and enhancing equity of access and promoting use of GBUE by community groups, and integrating cultural services in local biodiversity action plans

Local Authorities are expected to align their LABAPs with national commitments defined in the NBAP to ensure a cohesive approach to biodiversity conservation across the country.

3. SCREENING FOR APPROPRIATE ASSESSMENT

3.1 Introduction to Screening

This section of the report examines if the plan is likely to have a significant effect upon European Sites, either alone or in combination with other projects or plans. The screening phase is progressed in the following stages. A series of questions are asked during the Screening Stage of the AA process in order to determine:

- Whether the plan or project introduces any sources of environmental or ecological impact
- Whether a plan or project can be excluded from AA requirements because it is directly connected with or necessary to the management of a European Site.
- Whether the plan or project will have a likely significant effect on a European Site, either alone or in combination with other projects or plans, in view of the site's conservation objectives or if residual uncertainty exists regarding potential effects.

Plans are screened out based on one or a combination of the following criteria:

- Where it can be shown that there are no sources of environmental impact associated with a plan or project.
- Where there are no pathways such as hydrological links between a plan or project area, and relevant European sites
- Where a European site is located at a distance from the plan or project area such that effects are not foreseen;
- Where known threats or vulnerabilities at a European site cannot be linked to potential effects that may arise from a plan or project.

Having regard to the European Commission (2021) guidance document and the OPR (2021) practice note, the potential impacts of the LABAP actions on the receiving environment at source are considered based (in Table 3.1) on the following criteria:

- Habitat destruction/fragmentation/deterioration;
- Surface water run-off carrying suspended silt and contaminants, into local watercourses;
- Changes to groundwater quality, yield and/or flow paths associated with the proposed project;
- Plan related activities (noise, vibration, lighting, human presence, structures, etc) leading to disturbance / displacement of species;
- Plan related activities leading to a reduction in species populations / density;
- Air pollution due to dust and other airborne emissions; and
- Disturbance and potential spread of invasive species

These impacts are further examined in defining the Zone of Influence (ZoI) of the plan to identify likely significant effects through the Source-Pathway-Receptor assessment (Section 3.3).

Table 3-1: Evaluation of Potential Sources of Impact from LABAP Actions

Objective	Action Code	Action	Potential Sources of Impact
Surveys + Monitoring	1	Support Citizen Science Initiatives to encourage awareness and recording of species together with the National Biodiversity Data Centre.	Citizen science initiatives enable data collection by members of the public to contribute to research and add to the national dataset on Ireland's biodiversity and biological data. Such research can help identify trends in biodiversity and improve understanding of the ecological baseline in the Plan Area. The action has the potential to improve awareness and knowledge of local biodiversity in County Offaly, which will underpin and support improvements in the area. In isolation, the action, in and of itself, does not have the potential to generate a source of impact on the receiving environment.
	2	Commission a full county wetland survey.	The action proposes the carrying out of surveys for wetland habitats in the Plan Area, which will underpin and support the effective implementation of the BAP and potentially lead to focussed and targeted biodiversity improvements. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	3	To conduct baseline surveys/assessments and develop a masterplan for management of biodiversity at/along new amenity infrastructure (i.e. greenways, bike trails)	The action proposes the carrying out of baseline surveys and assessments for the management of biodiversity situated within proximity of amenity infrastructure in the Plan Area. This will underpin and support the effective implementation of the BAP and potentially lead to focussed and targeted biodiversity improvements. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	4	Create "Offaly Ecological Network" map + site list, of all sites of ecological importance in the county to include, Natura 2000 sites, NHA/pNHAs and locally important sites.	The creation of 'Offaly Ecological Network' will define and highlight the extents of the ecological assets within County Offaly. The action will enable the local authority in decision-making through augmented knowledge of the baseline in the Plan Area, and can underpin and support the effective implementation of the Plan. This can then potentially lead to more focused and targeted biodiversity initiatives and improvements. The action, in and of itself, will not generate a source of impact on the receiving environment.
	5	Implement a process to monitor the changes resulting in the implementation of the All-Ireland Pollinator Plan actions at council level.	The All-Ireland Pollinator Plan is a cross-sectoral framework to create landscapes and environmental conditions where pollinator species can survive and thrive. The action is centred around the development of a process to monitor the progress of the implementation of the All-Ireland Pollinator Plan, which will then inform and support focused and target pollinator-friendly biodiversity initiatives in County Offaly. The action, being research/reviewed-based, will not generate a source of negative impact on the receiving environment..
	6	Commission ecological surveys to help inform county policy and related projects.	The action proposes the carrying out of surveys for the management of biodiversity situated within proximity of amenity infrastructure in the Plan Area, which will underpin and support the effective implementation of the BAP and potentially lead to focussed and targeted biodiversity improvements. The action, in and of itself, will not generate a source of negative impact on the receiving environment.

Objective	Action Code	Action	Potential Sources of Impact
	7	Work to enhance quarry habitats for biodiversity following the end of commercial extraction through the planning process.	Quarries can provide important roosting and nesting sites for bird species. They can also serve as habitats for bees and other invertebrates. Quarries with shallow and temporary ponds can host amphibians, and dry grassland surrounding such sites can support a wide variety of broad-leaved herbs and grasses. The action supports collaboration with quarry operators through the planning process to enhance the biodiversity potential in such sites at the end of extraction operations. This will contribute to the rehabilitation of disturbed habitats and augmentation of flora and fauna, and also generate positive effects for population and human health, air and climate, and the water and soils environments. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
Action for Biodiversity	8	Establish Offaly County Council Biodiversity Action Plan Implementation Group.	The formation of an Implementation Group with the relevant authority and credibility for the County Council's Biodiversity Action Plan will underpin and support biodiversity improvements within the Plan Area, which has positive implications for biodiversity and other interacting environmental components, such as population and human health, the water and soils environments, and air and climate. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	9	Create an Offaly County Council flagship site managed for biodiversity in the Edenderry MD, akin to that of Tullamore Wetlands and Syngefield Demesne.	Edenderry has an abundant stock of natural assets which, upon management, can serve as ecosystem services for residents and visitors. The action has the potential to result in an improvement in baseline conditions through enhancement measures, which will generate positive effects on habitats and key species at the site and its environs. This will result in additional co-benefits for other environmental components, without the potential to generate any negative impacts on the receiving environment.
	10	Create Management Plans for Syngefield Demesne, Bludndell Park and Tullamore Wetlands.	Management Plans for council-owned sites, including Syngefield Demesne, Bludnell Park and Tullamore Wetlands, will ensure appropriate protection and conservation of these sites while also opening up access for people to enjoy and experience their natural and ecological heritage. These plans are subject to their own separate screening for Appropriate Assessments. The action has the potential to result in positive effects on biodiversity (through ongoing management of these sites and increased awareness within the general community) and population and human health (through access to these sites for educational and recreational purposes). The action, in and of itself, will not generate a source of impact on the receiving environment.
	11	Formalise policy to ban glyphosate-based herbicide by OCC (except for specific circumstances - Invasive Species eradication).	Glyphosate is a commonly-used pesticide, which has been documented to be carcinogenic for human health. Glyphosate-based herbicides/pesticides can impact wildlife through exposure to non-target organism, with aquatic and marine ecology being affected particularly. The action has the potential to result in direct positive effects for biodiversity and population and human health, and indirect positive effects for the water and soils environments, without affecting any environmental receptor in a negative fashion. The action, in and of itself, will not generate a source of negative impact on the receiving environment.

Objective	Action Code	Action	Potential Sources of Impact
	12	Enhance biodiversity potential of OCC parks (creating site specific plans where required).	The action pertains to the augmentation of biodiversity potential in the parks and green spaces in County Offaly, preparing site-specific plans where required. This has the potential to generate positive effects on biodiversity components, such as habitats and key species, and additional co-benefits for other environmental receptors. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	13	Create and agree 10-year plans for burial grounds to protect and improve species diversity.	Faith communities often own large areas of land, such as churchyards and burial grounds, which provide an opportunity to enhance biodiversity at these sites through a suite of management measures. The action is in support of biodiversity conservation, particularly key species that may exist at these sites. The action has the potential to result in co-benefits for other environmental receptors, such as population and human health and soils. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	14	Support local communities with the creation + implementation of Biodiversity Action Plans.	This action will create and foster a collaborative approach to forming and implementing the Biodiversity Action Plan in County Offaly, which in turn contributes to the effective and targeted delivery of the Plan and biodiversity improvements in general. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	15	Work with faith communities to identify lands within respective dioceses suitable to implement biodiversity measures in collaboration with local parish and communities.	Faith communities often own large areas of land, such as churchyards and burial grounds, which provide an opportunity to enhance biodiversity at these sites through a suite of management measures. The action is in support of biodiversity conservation, particularly key species that may exist at these sites. The action has the potential to result in co-benefits for other environmental receptors, such as population and human health and soils. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	16	Implement the recommendations of the Offaly Hedgerow Survey 2024.	The County Council has commissioned a hedgerow survey to understand the unique significance that these habitats offer, and monitor trends and changes within them. Hedgerows hold features of archaeological, geological, social and natural heritage, and are important wildlife corridors and habitats, serving as refuges for biodiversity. The findings and recommendations of the Offaly Hedgerow Survey 2024 will underpin and support the effective implementation of the Plan and potentially lead to more focused and targeted biodiversity improvements. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	17	Implement the recommendations of the Offaly Tree Guidelines 2023 - 2028.	The Offaly Tree Guidelines are centred around the management of trees within the Plan Area by defining the appropriate guidance and policy to ensure environmental benefits, and minimise intrusion and risks to members of public. This action is in support of protecting and enhancing biodiversity in the Plan Area, with the potential to generate co-benefits for other environmental components. The action, in and of itself, will not generate a source of negative impact on the receiving environment.

Objective	Action Code	Action	Potential Sources of Impact
	18	Support ENGOs, landowners and local communities in the delivery of conservation initiatives for priority species.	The action is centred around supporting the delivery of biodiversity initiatives being undertaken by other stakeholders such as environmental NGOs, landowners and local communities. The action has the potential to generate positive effects on biodiversity components, including sensitive habitats and priority species. This will additional have co-benefits for other environmental receptors such as population and human health, the water and soils environments, and air and climate. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	19	Support ENGOs, landowners and local communities in the conservation of existing wetlands and creation of new aquatic habitats.	The action is centred around supporting the delivery of biodiversity initiatives being undertaken by other stakeholders such as environmental NGOs, landowners and local communities. The action has the potential to generate positive effects on biodiversity components, including sensitive habitats and priority species. This will additional have co-benefits for other environmental receptors such as population and human health, the water and soils environments, and air and climate. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	20	Implement actions of the All-Ireland Pollinator Plan for Councils.	The National Biodiversity Data Centre coordinates the implementation of the All-Ireland Pollinator Plan, which has a sub-document (Councils: Actions to Help Pollinators. All Ireland Pollinator Plan, Guidelines 4) aimed at Councils containing focused actions that can aid local authorities in carrying out pollinator-friendly actions in the context of their Plan Areas. The implementation of the All-Ireland Pollinator Plan will create an environment where pollinators can thrive, which creates co-benefits for species diversity in the wider ecosystem. This action has the potential to generate positive effects for biodiversityIt will not, in and of itself, generate a source of negative impact on the receiving environment.
	21	Support initiatives under the Water Framework Directive that contribute to the restoration of ecology in water bodies, and the Blue Dot Catchments Programme.	The Water Framework Directive is a framework for ensuring the good qualitative and quantitative health of all water bodies. Blue Dot Catchments Programme is a collaborative programme focused on directing resources towards the protection and restoration of sensitive, high-status objective water bodies. This action will support these frameworks to maintain, and where required, restore water bodies to 'Good Status' (both chemically and ecologically). The action, therefore, has the potential to generate direct positive effects on biodiversity, the water environment, and population and human health, and by way of interaction, indirect positive effects on the soils environment. The action, in and of itself, will not generate a source of negative impact on the receiving environment.

Objective	Action Code	Action	Potential Sources of Impact
	22	Protect existing and maximise nesting opportunities arising from new developments for Swift, House Sparrow, House Martin, Swallow, bats & insects.	Nesting opportunities for volant species can be constrained by modern building practices and reduced through the destruction or removal of natural nesting structures. The action will protect existing structures and encourage new development to include suitable artificial alternatives such as nest boxes and insect hotels. The action has the potential to result in positive effects on biodiversity. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
Alien Invasive Species	23	Continue control of invasive flora and fauna species - Japanese Knotweed and Himalayan Balsam being the two main AIS plant species of concern in Offaly.	The action will prevent and control the spread of invasive species, namely Japanese Knotweed and Himalayan Balsam, in the Plan Area. The action has the potential to preserve ecosystems with native flora and fauna by preventing disturbances to native habitats and/or undue ecological competition for native species. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	24	Prioritise the assessment and management of new IAS discoveries in the county in collaboration with other counties + agencies.	The action is centred around investigating, in collaboration with other relevant agencies and stakeholders, whether previously undiscovered invasive species exist in the Plan Area. The action will assist in the management of such invasive species if identified, which will then enable the control of their spread. The action has the potential to benefit local flora and flora by potentially preventing disturbances to native habitats and undue competition for native species for resources. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	25	Support research and monitoring projects focusing on AIS in Offaly	The action pertains to supporting projects focused on the research and monitoring of invasive species in County Offaly, with the intention to prevent and control their spread. The action will have positive effects on biodiversity, flora and fauna by potentially preventing disturbances to native habitats and undue competition for native species for resources. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	26	Upgrade the county alien invasive species management strategy/GIS Mapping	The action pertains to process improvement for invasive species management, which includes strategy design and mapping. The action has the potential to result in positive effects on local flora and fauna through the prevention of invasive species spread. The action, in and of itself, will not generate a source of impact on the receiving environment.
Building Resilience	27	Undertake review of Ecological Network Map (see Action 4) to identify important biodiversity corridors/stepping stones and gaps and pinch-points which may be addressed to create and enhance connectivity for biodiversity between sites.	The creation of 'Offaly Ecological Network' will define and highlight the extents of the ecological assets within County Offaly. The action will enable the local authority in decision-making through augmented knowledge of the baseline in the Plan Area, and can underpin and support the effective implementation of the Plan. This can then potentially lead to more focused and targeted biodiversity initiatives and improvements. Being reviewed-based, the action will not generate any sources of negative impact on the receiving environment.

Objective	Action Code	Action	Potential Sources of Impact
	28	Work with relevant agencies annually to continue to assess wildfire risk to bogs and upland habitats and management of same.	Bogs in poor conditions (i.e., low moisture content) have a higher risk of wildfires, which can result in significant financial, anthropological, environmental and ecological losses. Drier areas of bog are generally dominated by heather (a highly flammable species in dry weather), which provides cover for protected bird species such as Red Grouse, Snipe and Curlew. The management of such habitats to minimise wildfire risk is therefore crucial. The action has positive implications for a range of environmental receptors, including biodiversity, flora and fauna, population and human health, air and climate, and material assets. No negative effects have been identified in relation to the implementation of this action. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	29	Consider provision being made for Biodiversity Net Gain (BNG) for planning applications, to be included in the next County Development Plan.	Biodiversity Net Gain is an approach to development which centres around improving biodiversity at a site by encouraging developers to provide an increase in appropriate natural habitat and ecological features and therefore arrest the loss of biodiversity and restore ecological networks. The action supports the integration of biodiversity considerations and improvements within the land-use framework and development planning process. The action has the potential to contribute to realisation of positive effects on biodiversity and generate co-benefits for other environmental components. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	30	Include climate resilience and future proofing into new biodiversity projects, plans and policies.	The inclusion of climate resilience and future-proofing into biodiversity projects, plans and policies is particularly important to slow down the decline of biodiversity and minimise loss of habitat and species diversity. The action is in support of biodiversity conservation and enhancement in the Plan Area, and has the potential to generate co-benefits for population and human health and air and climate. The action, in and of itself, will not generate a source of negative impact on the receiving environment
	31	Undertake study to identify the habitats and species most at risk from climate change in the county.	The action is research/review-based to identify sensitive habitats and species in the Plan Area that may be disproportionately affected from climate change. The action will underpin and support effective implementation of the Plan, potentially leading to focused and targeted biodiversity measures. However, in isolation, the action does not have the potential to result in a source of negative impact on the receiving environment.
	32	Explore funding models for carbon offsetting to fund local wetland and woodland development.	The action is review-based to explore funding models for the development of local wetlands and woodlands. While the action is in support of biodiversity conservation and enhancement within the Plan Area, in isolation, it does not have the potential to result in a a source of negative impact on the receiving environment.

Objective	Action Code	Action	Potential Sources of Impact
	33	Develop targeted county policies which will result in improved habitats and benefit biodiversity (e.g. Light and Nocturnal Species).	The action supports the integration of biodiversity considerations and enhancement opportunities within county policies. The action has the potential to contribute to the realisation of positive effects on biodiversity and result in co-benefits for other environmental receptors. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	34	Promote the use of Nature Based Solutions (NBS) in local authority projects.	Nature Based Solutions (NBS) involve assimilating nature into addressing societal issues to support human and biodiversity wellbeing. The integration of NBS into local authority projects will underpin and support biodiversity improvements within the Plan Area. The action will not generate any significant adverse effects on European Sites. The development of any NBS infrastructure will be undertaken under the land use planning framework and will require appropriate planning consent. Statutory land use plans are subject to their own SEA and AA.
Awareness + Engagement	35	Support the establishment and work of voluntary biodiversity groups carrying out citizen science projects in Offaly, such as an Offaly Bat Group.	Citizen science enables data collection by members of the public to contribute to research and add to the national dataset on Ireland's biodiversity and biological data. Such research can help identify trends in biodiversity and improve understanding of ecological systems, therefore fostering interest within members of the public. Public engagement will also be boosted and lead to an improvement in general awareness and knowledge of local biodiversity. The action has positive effects on biodiversity and additionally population and human health. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	36	Create county policy on bat friendly lighting.	This action supports the control and management of lighting in the plan area. It will contribute to preventing and reducing the impact of lighting on light sensitive species, particularly bat species. This action has the potential to have positive effects for biodiversity The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	37	Plan annual schedule of OCC staff biodiversity training.	This action promotes biodiversity related training within the Local Authority's staff members. It has the potential to improve biodiversity related expertise and underpin and support biodiversity improvements within the plan area by improving knowledge and awareness across different functions of the local authority. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	38	Plan an annual schedule of biodiversity training and awareness raising events for relevant community groups/public.	This action promotes biodiversity related training. It has the potential to improve biodiversity related expertise and underpin and support biodiversity improvements within the plan area. The action, in and of itself, will not generate a source of negative impact on the receiving environment.

Objective	Action Code	Action	Potential Sources of Impact
	39	Pilot a biodiversity initiatives in a social housing scheme which may include; green roofs, green walls, wetland & ponds SUDS, green carparking, nest boxes in facades, wildflower meadows and wildlife friendly shrubs and trees in open space.	Council development projects, including social housing schemes, provide an opportunity to enhance biodiversity by integrating enhancement measures into the design of the proposed development. The action supports the integration of biodiversity improvements into the planning process, which will potentially contribute to the realisation of positive effects on biodiversity and co-benefits for other environmental components. The action, in and of itself, will not result in any significant adverse effects on European Sites. The development of any green infrastructure will be undertaken under the land use planning framework and will require appropriate planning consent. Statutory land use plans are subject to their own SEA and AA.
	40	All Council housing, parks and infrastructure projects to include biodiversity enhancement proposals.	Any council development project provides an opportunity to enhance biodiversity by integrating enhancement measures into proposed development. The action supports integration of biodiversity improvements into the planning process, which will potentially contribute to the realisation of positive effects on biodiversity and co-benefits for other environmental components. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	41	Research + support the creation of a biodiversity demonstration garden with a community partner.	Accessible community gardens can provide a range of benefits to individuals and communities, including improved health and wellbeing and access to healthy food. Community gardens also provide opportunities for enhancing biodiversity by creating habitats for pollinators and other wildlife. The action has the potential to result in positive effects for biodiversity, population and human health, the water and soils environments, and to an extent, air and climate. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	42	Initiate a project in collaboration with farming groups to highlight and celebrate the importance of farmland for biodiversity.	The action is centred around a collaborative approach to acknowledging and featuring the significance of farmlands for supporting biodiversity. The action is awareness-oriented and has the potential to improve biodiversity-related expertise and underpin and support biodiversity improvements within County Offaly. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	43	Promote and expand the delivery of the Green Schools Programme in the county.	The Green Schools Programme is a student-led programme for environmental engagement, education and advocacy. The programme aims to equip students and teachers with the knowledge and skills for environmental sustainability through various projects and initiatives. The action has the potential to foster biodiversity protection and enhancement through these projects, leading to positive effects for both biodiversity and population and human health. The action, in and of itself, will not generate a source of negative impact on the receiving environment.

Objective	Action Code	Action	Potential Sources of Impact
	44	Promote and expand the delivery of the Heritage in Schools Programme in the county.	The Heritage in Schools Scheme provides for a panel of Heritage Specialists who interact with school students on a range of natural and cultural heritage subjects. The scheme is in support of the aims and objectives of the Social, Scientific and Environmental Education curriculum, providing an additional educational tool and resource for educators and students. The action has the potential to promote biodiversity-related knowledge and awareness, which can underpin and support biodiversity improvements within the Plan Area. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	45	Advocate for the protection + enhancement of nature and spaces for nature in Offaly through print, broadcast, social media and through other media such as podcasts, online video and short films.	This action will promote awareness of biodiversity and biodiversity related initiatives through media engagement and disseminate nature-oriented communications to various audiences. It has the potential to foster further interest in biodiversity protection and enhancement throughout the local authority as an organisation and the wider community. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	46	Work with Local Enterprise Office Offaly to promote biodiversity friendly initiatives as part of sustainable economic development.	The action proposes to integrate biodiversity initiatives into the sustainable economic development of County Offaly, through the operations of the Local Enterprise Office. The action has the potential to foster a collaborative approach to implementing biodiversity initiatives and improving biodiversity and sustainable development in the Plan Area, contributing to the effective implementation of the Plan. This is positive for both biodiversity and population and human health. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	47	Work with OCC Culture and Creativity Team to promote biodiversity through creative projects, and with support from the Creative Ireland programme.	The Offaly Creative Ireland programme is aimed at supporting communities and artists to present aspects of Offaly's heritage through various art forms. The action proposes integrating biodiversity into creative and interpretive expression of the art funded by the programme. The action has the potential to promote biodiversity-related initiatives and awareness and boost community engagement, therefore creating positive benefits for biodiversity, population and human health and cultural heritage. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	48	Work with all OCC sections to make biodiversity enhancements where opportunities arise (e.g. Regeneration, Roads).	The action is aimed at identifying opportunities for integrating biodiversity considerations into all functions of the local authority, particularly where there is new development being carried out. The action has the potential to generate positive effects on biodiversity components, such as habitats and key species, in addition to creating co-benefits for other environmental components. The action, in and of itself, will not generate a source of negative impact on the receiving environment.

Objective	Action Code	Action	Potential Sources of Impact
	49	Conduct awareness campaign on the importance of stone walls/structures for biodiversity	Stonewalls and stone structures can host a number of fungi, lichens and bryophytes. Due to their sensitivity to environmental changes in their microhabitat characteristics and conditions, these cryptogam species are considered effective indicators of ecological health. Cryptogams play important roles in the ecosystem, such as the formation of soils, breakdown of organic matter and nutrient cycling. This action will promote awareness of biodiversity and biodiversity-related initiatives. It has the potential to foster further interest in biodiversity protection and enhancement throughout the local authority as an organisation and the wider community. The action, in and of itself, will not generate a source of negative impact on the receiving environment.
	50	Build links with sports clubs and promote adoption of biodiversity positive measures on club grounds (i.e. through the GAA Green Clubs Programme).	The action proposes to integrate biodiversity considerations on sports grounds to enhance the current baseline. The action will promote awareness and engagement pertaining to biodiversity-related initiatives, and foster further interesting in protection and enhancement through collaboration between the local authority and the wider community. The action, in and of itself, will not generate a source of negative impact on the receiving environment.

3.2.1 Summary of the interactions of the Proposed Plan on the receiving environment

The LABAP provides a general framework for biodiversity protection and enhancement on lands in the plan area. It defines the biodiversity actions that support and promote:

- Best practice biodiversity management and improvement,
- Local authority biodiversity protection and enhancement initiatives,
- The improvement of biodiversity on local authority controlled lands,
- Biodiversity training and awareness events,
- Biodiversity education and training,
- Planting of native species (i.e. trees, shrubs, plants etc.)
- Ecological surveying and mapping to identify areas of risk from threats and pressure and areas for targeted biodiversity protection/enhancement action,
- Collaborating with key stakeholders and the public to achieve biodiversity aims.

The range of actions defined in the LABAP have the potential to have a range of positive environmental effects on biodiversity, including habitats, key species, designated sites and locally important non-designated sites.

All actions in the LABAP are aimed at protecting and enhancing biodiversity. They have been carefully reviewed and it has been concluded that these actions do not have the potential to have unintended negative effects on the receiving environment.

The actions in the LABAP do not support intensive land use or development projects sitting outside the land use planning framework that can cause significant negative environmental effects. The LABAP will not in and of itself set the context for future development consent. There is no real likelihood of significant negative environmental effects occurring as result of the implementation of the LABAP.

The implementation of the LABAP will not introduce any sources of negative environmental impact, such as

- Land take;
- Resource Requirements (Drinking Water Abstraction Etc.);
- Emissions (Disposal to Land, Water or Air);
- Excavation Requirements;
- Transportation Requirements;
- Construction, Operation, Decommissioning.

The LABAP will not introduce any source of negative environmental impact which could result in or contribute to the following types of effects on a European site:

- Reduction of habitat area, habitat degradation or fragmentation
- Disturbance to species, reduction in species population and density
- Changes in ecological functions and/or features that are essential for the ecological requirements of habitats and species (e.g. water quality and quantity)
- Interference with key relationships that define the structure and function of the site.

The implementation of the LABAP will not result in any source of negative environmental impacts that may combine with environmental effects occurring due to other plans or projects to create an 'in-combination' significant effect on a European site.

It is clear the LABAP will not generate any source of negative environmental impact that may result in a negative effect on any European site.

3.3 European Sites within the Zone of Influence (ZoI)

The OPR (2021) AA Screening practice note states that the Zone of Influence must be established on a case-by-case basis using the Source-Pathway-Receptor model. The S-P-R model has been used to identify the ZoI to ensure that relevant European sites are identified. The S-P-R model minimises the risk of overlooking distant or obscure effect pathways, while also avoiding an over reliance on buffer zones (e.g. 15 km), within which all European sites should be considered. This approach follows the DoEHLG (2009 rev 2010) guidance on AA which states that:

> *"For projects, the distance could be much less than 15 km, and in some cases less than 100m, but this must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, and the sensitivities of the ecological receptors, and the potential for in combination effects"*

As detailed in section 1.5, in order for an effect to occur, all three elements of this mechanism must be in place. The absence of one of the elements of the mechanism means there is no likelihood for the effect to occur. The potential impacts of the plan are set out in Section 3.2 of this report. The impact is essentially the 'source' in the S-P-R model.

These impacts may be very localised and confined to defined area with no potential connectivity to a European site and therefore no potential for effects. Alternatively, where an ecological or functional pathway exists they may give rise to a potential effect to a Qualifying Interest of a European site.

The dominant ecological pathways to consider are:

- Direct physical interactions or changes to the local environment;
- Air dispersal (noise, dust, odour emissions etc.);
- Hydrological interactions; and
- Dispersal patterns of mobile species

Based on the precautionary principal, the Zone of Influence of the proposed plan has been defined as:

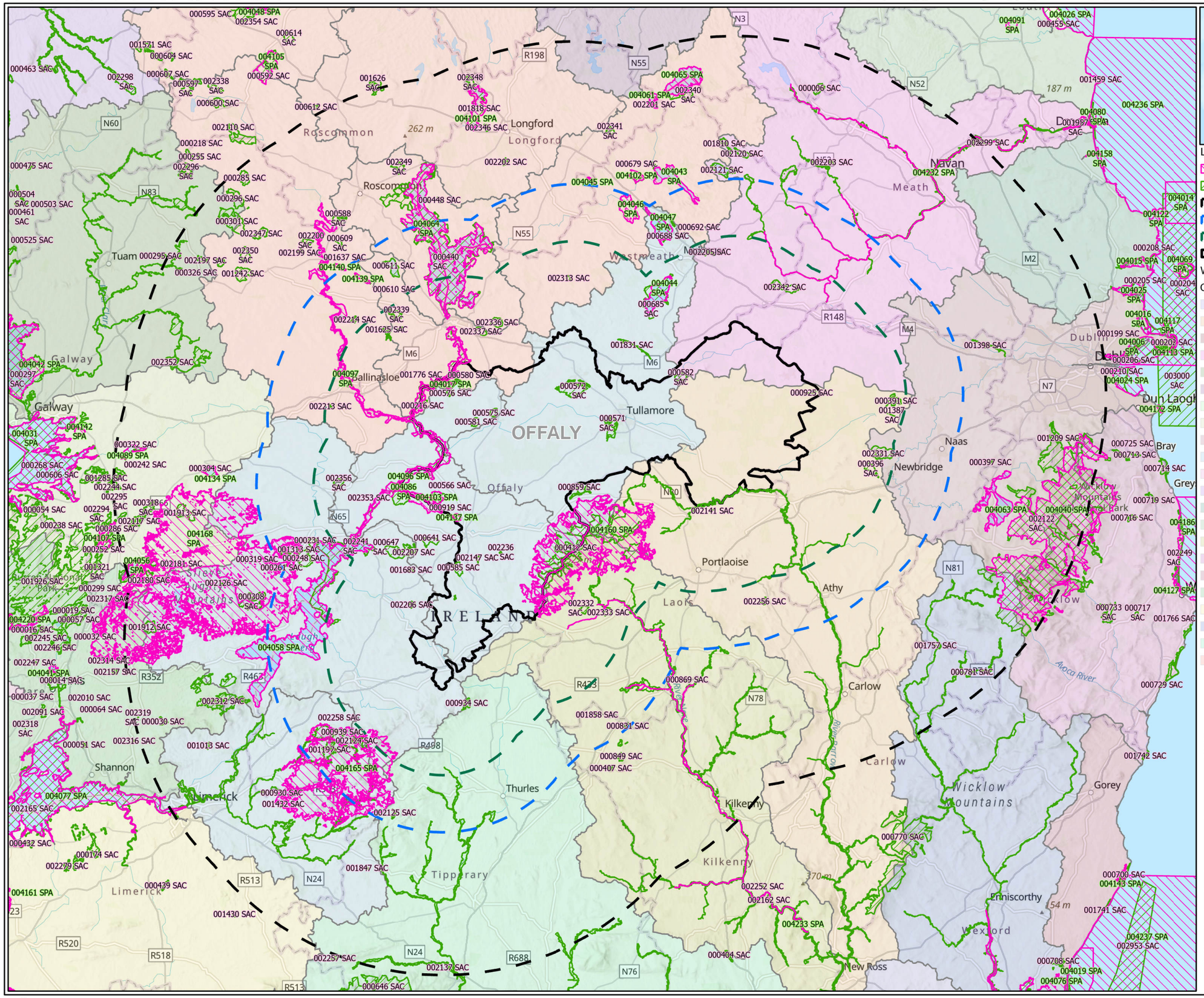
- All European sites located either solely or partially in County Offaly,
- All hydrologically connected European Sites to waterbodies within County Offaly; and
- All European sites within a 15km buffer of County Offaly

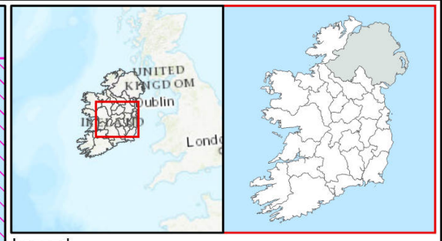
All European sites within the Zone of Influence of the Plan area or which are connected to the Plan area ecologically, hydrologically or through hydrogeology have been identified - having appropriate regard to the interaction criteria defined in Section 1.5.

A map showing these European sites in or connected to the plan area is presented in Figure 3-1. Background information on these European sites is presented in Appendix 1, including:

- Quality and site characteristics of European sites considered in the assessment.
- Background data for European sites considered in the assessment; including the Qualifying features (Qualifying Interests or Special Conservation Interests) and the known threats and pressures as recorded by the National Parks and Wildlife Services.
- Known threats and pressures related to the qualifying interests from each Special Area of Conservation as per article 17 reporting from the National Parks and Wildlife Services.
- Known threats and pressures related to the qualifying interests from each Special Area of Conservation as per article 17 reporting from the National Parks and Wildlife Services.

Path: R:\Map Production\2024\P24-005\Workspaces\P24_005_BAP_Figures\P24_005_BAP_Figures.aprx





Legend

- Special Protection Areas
- Special Area of Conservation
- 50km Buffer
- 25km Buffer
- 15km Buffer
- CountyBoundaries

WFD Catchments

Catchment Name

- Ballyteigue-Bannow
- Barrow
- Blackwater (Munster)
- Boyne
- Corrib
- Erne
- Galway Bay North
- Galway Bay South East
- Liffey and Dublin Bay
- Lower Shannon
- Mal Bay
- Moy & Killala Bay
- Nanny-Delvin
- Newry, Fane, Glyde and Dee
- Nore
- Ovoca-Vartry
- Owenavorragh
- Shannon Estuary North
- Shannon Estuary South
- Slaney & Wexford Harbour
- Suir
- Upper Shannon

Note: A full list of European sites within, overlapping or connected to the Plan Area is provided in Screening for Appropriate Assessment section of this document.

TITLE: European sites with connectivity to the Plan area			
PROJECT: Offaly Local Authority Biodiversity Action Plan			
FIGURE NO:	3.1		
CLIENT:	Offaly County Council		
SCALE:	1:650,000	**REVISION:**	0
DATE:	9/27/2024	**PAGE SIZE:**	A3

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3.4 Consideration of in-combination Effects with other Plans or Projects

Article 6(3) of the Habitats Directive requires that:

> *"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".*

It is therefore required that the likely significant effects of the plan are considered in-combination with other plans or projects within the zone of influence.

The consideration of in-combination effects with other plans or projects, focused on the sources of impacts identified for the plan in Section 3.2. The principal plans that are related to the LABAP are defined in Section 2-2.

The LABAP is in harmony and consistent with all inter-related plans, including land use plans relevant to the plan area, higher order heritage related plans, the Local Authority Climate Action Plan, the national Climate Action Plan and the 4th National Biodiversity Action Plan. The range of positive effects that may be realised by the implementation of the LABCAP have the potential to interact and combine with positive effects associated with biodiversity measures defined in these inter-related plans to create larger, more significant positive effects.

All actions in the LABAP are aimed at protecting and enhancing biodiversity. The implementation of the LABAP will not give rise to likely significant negative effects on the environment that have the potential to interact and combine with negative effects associated with measures defined in these inter-related plans or projects to create larger, more significant negative effects.

The Plan does not therefore have any potential to contribute to in-combination likely significant effects on European sites that may occur due to the wider implementation of inter-related plans or projects.

3.5 Assessment of Likely Significant Effects

Table 3-2 examines whether there is potential for Likely Significant Effects on identified European sites considering information provided above and the background information on the relevant European sites provided in Appendix 1.

Table 3-2: Assessment of Likely Significant Effects to European Sites within the Zone of Influence of the Draft Plan

Site Code	Site Name	Distance (km)	Qualifying Feature (Qualifying Interests and Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects	Likely Significant Effects (Y/N)
000216	River Shannon Callows SAC	0	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410], Alkaline fens [7230], Limestone pavements [8240], Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0], Otter (Lutra lutra) [1355], Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) [6510]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
000412	Slieve Bloom Mountains SAC	0	Blanket bogs * if active bog [7130], Northern Atlantic wet heaths with Erica tetralix [4010], Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
000566	All Saints Bog and Esker SAC	0	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210], Active raised bogs [7110], Bog woodland [91D0], Depressions on peat substrates of the Rhynchosporion [7150], Degraded raised bogs still capable of natural regeneration [7120]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
000571	Charleville Wood SAC	0	Desmoulin`s whorl snail (Vertigo moulinsiana) [1016], Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects

Site Code	Site Name	Distance (km)	Qualifying Feature (Qualifying Interests and Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects	Likely Significant Effects (Y/N)
000572	Clara Bog SAC	0	Active raised bogs [7110], Depressions on peat substrates of the Rhynchosporion [7150], Degraded raised bogs still capable of natural regeneration [7120], Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210], Bog woodland [91D0]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
000575	Ferbane Bog SAC	0	Active raised bogs [7110], Degraded raised bogs still capable of natural regeneration [7120], Depressions on peat substrates of the Rhynchosporion [7150]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
000576	Fin Lough (Offaly) SAC	0	Geyer`s whorl snail (Vertigo geyeri) [1013], Alkaline fens [7230]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
000580	Mongan Bog SAC	0	Active raised bogs [7110], Depressions on peat substrates of the Rhynchosporion [7150], Degraded raised bogs still capable of natural regeneration [7120]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
000581	Moyclare Bog SAC	0	Depressions on peat substrates of the Rhynchosporion [7150], Active raised bogs [7110], Degraded raised bogs still capable of natural regeneration [7120]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
000582	Raheenmore Bog SAC	0	Active raised bogs [7110], Depressions on peat substrates of the Rhynchosporion [7150], Degraded raised bogs still capable of natural regeneration [7120]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
000585	Sharavogue Bog SAC	0	Degraded raised bogs still capable of natural regeneration [7120], Depressions on peat substrates of the Rhynchosporion [7150], Active raised bogs [7110]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects

Site Code	Site Name	Distance (km)	Qualifying Feature (Qualifying Interests and Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects	Likely Significant Effects (Y/N)
000859	Clonaslee Eskers and Derry Bog SAC	0	Alkaline fens [7230], Geyer`s whorl snail (Vertigo geyeri) [1013]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
000919	Ridge Road, SW of Rapemills SAC	0	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
000925	The Long Derries, Edenderry SAC	0	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
001776	Pilgrim's Road Esker SAC	0	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002147	Lisduff Fen SAC	0	Geyer`s whorl snail (Vertigo geyeri) [1013], Alkaline fens [7230], Petrifying springs with tufa formation (Cratoneurion) [7220]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002236	Island Fen SAC	0	Alkaline fens [7230], Juniperus communis formations on heaths or calcareous grasslands [5130]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002162	River Barrow and River Nore SAC	0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0], White-clawed crayfish (Austropotamobius pallipes) [1092], Desmoulin`s whorl snail (Vertigo moulinsiana) [1016], Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330], Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430], Reefs [1170], Nore Pearl Mussel (Margaritifera durrovensis) [1990], Mudflats and sandflats not covered by seawater at low tide [1140], Killarney fern (Trichomanes speciosum) [1421], Estuaries [1130],	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects

Site Code	Site Name	Distance (km)	Qualifying Feature (Qualifying Interests and Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects	Likely Significant Effects (Y/N)
			Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260], Salicornia and other annuals colonising mud and sand [1310], Mediterranean salt meadows (Juncetalia maritimi) [1410], Sea lamprey (Petromyzon marinus) [1095]. River lamprey (Lampetra fluviatilis) [1099], Petrifying springs with tufa formation (Cratoneurion) [7220], Atlantic salmon (Salmo salar) [1106], Twaite shad (Alosa fallax) [1103], Freshwater pearl mussel (Margaritifera margaritifera) [1029], Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0], Otter (Lutra lutra) [1355], European dry heaths [4030], Brook lamprey (Lampetra planeri) [1096]				
004017	Mongan Bog SPA	0	Greenland White-fronted Goose (Anser albifrons flavirostris) [A395]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
004086	River Little Brosna Callows SPA	0	Pintail (Anas acuta) [A054], Lapwing (Vanellus vanellus) [A142], Black-headed Gull (Chroicocephalus ridibundus) [A179], Black-tailed Godwit (Limosa limosa) [A156], Whooper Swan (Cygnus cygnus) [A038], Greenland White-fronted Goose (Anser albifrons flavirostris) [A395], Wigeon (Anas penelope) [A050], Wetland and Waterbirds [A999], Teal (Anas crecca) [A052], Shoveler (Anas clypeata) [A056], Golden Plover (Pluvialis apricaria) [A140]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
004096	Middle Shannon Callows SPA	0	Lapwing (Vanellus vanellus) [A142], Corncrake (Crex crex) [A122], Golden Plover (Pluvialis apricaria) [A140], Black-tailed Godwit (Limosa limosa) [A156], Wigeon (Anas penelope) [A050], Wetland and Waterbirds [A999], Whooper Swan (Cygnus cygnus) [A038], Black-headed Gull (Chroicocephalus ridibundus) [A179]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects

Site Code	Site Name	Distance (km)	Qualifying Feature (Qualifying Interests and Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects	Likely Significant Effects (Y/N)
004097	River Suck Callows SPA	0	Wetland and Waterbirds [A999], Whooper Swan (Cygnus cygnus) [A038], Lapwing (Vanellus vanellus) [A142], Greenland White-fronted Goose (Anser albifrons flavirostris) [A395], Wigeon (Anas penelope) [A050], Golden Plover (Pluvialis apricaria) [A140]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
004103	All Saints Bog SPA	0	Greenland White-fronted Goose (Anser albifrons flavirostris) [A395]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
004137	Dovegrove Callows SPA	0	Greenland White-fronted Goose (Anser albifrons flavirostris) [A395]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
004160	Slieve Bloom Mountains SPA	0	Hen harrier (Circus cyaneus) [A082]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002353	Redwood Bog SAC	0.21	Degraded raised bogs still capable of natural regeneration [7120], Active raised bogs [7110], Depressions on peat substrates of the Rhynchosporion [7150]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002141	Mountmellick SAC	0.94	Desmoulin`s whorl snail (Vertigo moulinsiana) [1016]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002206	Scohaboy (Sopwell) Bog SAC	2.3	Degraded raised bogs still capable of natural regeneration [7120]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
000641	Ballyduff/Clonfinane Bog SAC	3.42	Bog woodland [91D0], Active raised bogs [7110], Degraded raised bogs still capable of natural regeneration [7120], Depressions on peat substrates of the Rhynchosporion [7150]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
001831	Split Hills and Long Hill Esker SAC	3.55	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects

Site Code	Site Name	Distance (km)	Qualifying Feature (Qualifying Interests and Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects	Likely Significant Effects (Y/N)
000934	Kilduff, Devilsbit Mountain SAC	4.03	European dry heaths [4030], Species-rich Nardus grasslands, on siliceous substrates in mountain areas - and submountain areas in Continental Europe [6230]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
001683	Liskeenan Fen SAC	5.19	Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002337	Crosswood Bog SAC	5.32	Active raised bogs [7110], Degraded raised bogs still capable of natural regeneration [7120]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002207	Arragh More (Derrybreen) Bog SAC	5.58	Degraded raised bogs still capable of natural regeneration [7120]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
004233	River Nore SPA	5.63	Kingfisher (Alcedo atthis) [A229]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002332	Coolrain Bog SAC	6.15	Degraded raised bogs still capable of natural regeneration [7120], Depressions on peat substrates of the Rhynchosporion [7150], Active raised bogs [7110]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
000647	Kilcarren-Firville Bog SAC	6.66	Active raised bogs [7110], Depressions on peat substrates of the Rhynchosporion [7150], Degraded raised bogs still capable of natural regeneration [7120]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002336	Carn Park Bog SAC	6.79	Active raised bogs [7110], Degraded raised bogs still capable of natural regeneration [7120]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects

Site Code	Site Name	Distance (km)	Qualifying Feature (Qualifying Interests and Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects	Likely Significant Effects (Y/N)
004064	Lough Ree SPA	7.98	Teal (Anas crecca) [A052], Wetland and Waterbirds [A999], Golden Plover (Pluvialis apricaria) [A140], Wigeon (Anas penelope) [A050], Goldeneye (Bucephala clangula) [A067], Common tern (Sterna hirundo) [A193], Mallard (Anas platyrhynchos) [A053], Coot (Fulica atra) [A125],Shoveler (Anas clypeata) [A056], Lapwing (Vanellus vanellus) [A142], Tufted Duck (Aythya fuligula) [A061], Common Scoter (Melanitta nigra) [A065], Whooper Swan (Cygnus cygnus) [A038], Little Grebe (Tachybaptus ruficollis) [A004]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
000440	Lough Ree SAC	7.99	Otter (Lutra lutra) [1355], Degraded raised bogs still capable of natural regeneration [7120], Alkaline fens [7230], Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation [3150], Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0], Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210], Active raised bogs [7110], Limestone pavements [8240], Bog woodland [91D0]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002313	Ballymore Fen SAC	8.14	Transition mires and quaking bogs [7140]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002342	Mount Hevey Bog SAC	8.32	Active raised bogs [7110], Depressions on peat substrates of the Rhynchosporion [7150], Degraded raised bogs still capable of natural regeneration [7120]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
000685	Lough Ennell SAC	8.71	Alkaline fens [7230]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects

Site Code	Site Name	Distance (km)	Qualifying Feature (Qualifying Interests and Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects	Likely Significant Effects (Y/N)
004044	Lough Ennell SPA	9.37	Wetland and Waterbirds [A999], Tufted Duck (Aythya fuligula) [A061], Coot (Fulica atra) [A125], Pochard (Aythya ferina) [A059]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002356	Ardgraigue Bog SAC	9.7	Depressions on peat substrates of the Rhynchosporion [7150], Degraded raised bogs still capable of natural regeneration [7120], Active raised bogs [7110]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
001625	Castlesampson Esker SAC	9.96	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210], Turloughs [3180]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
000396	Pollardstown Fen SAC	10.28	Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210], Alkaline fens [7230], Geyer`s whorl snail (Vertigo geyeri) [1013], Petrifying springs with tufa formation (Cratoneurion) [7220], Narrow-mouthed whorl snail (Vertigo angustior) [1014], Desmoulin`s whorl snail (Vertigo moulinsiana) [1016]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002333	Knockacoller Bog SAC	10.37	Active raised bogs [7110], Degraded raised bogs still capable of natural regeneration [7120], Depressions on peat substrates of the Rhynchosporion [7150]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002241	Lough Derg, North-East Shore SAC	11.03	Limestone pavements [8240], Juniperus communis formations on heaths or calcareous grasslands [5130], Alkaline fens [7230], Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210], Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0], Taxus baccata woods of the British Isles [91J0]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
004058	Lough Derg (Shannon) SPA	11.03	Wetland and Waterbirds [A999], Cormorant (Phalacrocorax carbo) [A017], Common tern (Sterna hirundo) [A193], Tufted Duck (Aythya fuligula) [A061], Goldeneye (Bucephala clangula) [A067]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects

Site Code	Site Name	Distance (km)	Qualifying Feature (Qualifying Interests and Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects	Likely Significant Effects (Y/N)
002299	River Boyne and River Blackwater SAC	11.06	Alkaline fens [7230], River lamprey (Lampetra fluviatilis) [1099], Otter (Lutra lutra) [1355], Atlantic salmon (Salmo salar) [1106], Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
004232	River Boyne and River Blackwater SPA	11.06	Kingfisher (Alcedo atthis) [A229]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002331	Mouds Bog SAC	11.13	Depressions on peat substrates of the Rhynchosporion [7150], Active raised bogs [7110], Degraded raised bogs still capable of natural regeneration [7120]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
001387	Ballynafagh Lake SAC	11.44	Desmoulin`s whorl snail (Vertigo moulinsiana) [1016], Alkaline fens [7230], Marsh Fritillary (Euphydryas aurinia) [1065]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002205	Wooddown Bog SAC	12.26	Degraded raised bogs still capable of natural regeneration [7120]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
004165	Slievefelim to Silvermines Mountains SPA	12.35	Hen harrier (Circus cyaneus) [A082]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002339	Ballynamona Bog and Corkip Lough SAC	12.36	Depressions on peat substrates of the Rhynchosporion [7150], Degraded raised bogs still capable of natural regeneration [7120], Turloughs [3180], Active raised bogs [7110], Bog woodland [91D0]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects

Site Code	Site Name	Distance (km)	Qualifying Feature (Qualifying Interests and Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects	Likely Significant Effects (Y/N)
000391	Ballynafagh Bog SAC	12.4	Active raised bogs [7110], Degraded raised bogs still capable of natural regeneration [7120], Depressions on peat substrates of the Rhynchosporion [7150]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002137	Lower River Suir SAC	13.61	Otter (Lutra lutra) [1355], Taxus baccata woods of the British Isles [91J0], Twaite shad (Alosa fallax) [1103], Mediterranean salt meadows (Juncetalia maritimi) [1410], Brook lamprey (Lampetra planeri) [1096], Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260], White-clawed crayfish (Austropotamobius pallipes) [1092], Atlantic salmon (Salmo salar) [1106], Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0], Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330], Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430], Freshwater pearl mussel (Margaritifera margaritifera) [1029], Sea lamprey (Petromyzon marinus) [1095], Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0], River lamprey (Lampetra fluviatilis) [1099]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002213	Glenloughaun Esker SAC	13.81	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
002165	Lower River Shannon SAC	17.54	Brook lamprey (Lampetra planeri) [1096], Coastal lagoons [1150], Bottlenose dolphin (Tursiops truncatus) [1349], River lamprey (Lampetra fluviatilis) [1099], Reefs [1170], Vegetated sea cliffs of the Atlantic and Baltic Coasts [1230], Subtidal sandbanks	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects

Site Code	Site Name	Distance (km)	Qualifying Feature (Qualifying Interests and Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects	Likely Significant Effects (Y/N)
			(Sandbanks which are slightly covered by sea water all the time) [1110], Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260], Perennial vegetation of stony banks [1220], Atlantic salmon (Salmo salar) [1106], Mudflats and sandflats not covered by seawater at low tide [1140], Atlantic salt meadows (Atlantic salt meadows (Glauco-Puccinellietalia maritimae)) [1330], Otter (Lutra lutra) [1355], Sea lamprey (Petromyzon marinus) [1095], Large shallow inlets and bays [1160], Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410], Estuaries [1130], Salicornia and other annuals colonizing mud and sand [1310], Freshwater pearl mussel (Margaritifera margaritifera) [1029]				
004077	River Shannon and River Fergus Estuaries SPA	47.3	Ringed plover (Charadrius hiaticula) [A137], Eurasian oystercatcher (Haematopus ostralegus) [A130], Mew gull (Larus canus) [A182], Whooper swan (Cygnus cygnus) [A038], Bar-tailed godwit (Limosa lapponica) [A157], Eurasian curlew (Numenius arquata) [A160], Greylag goose (Anser anser) [A043], Northern pintail (Anas acuta) [A054], Greylag goose (Anser anser) [A043], Eurasian teal (Anas crecca) [A052], Common shelduck (Tadorna tadorna) [A048], Great crested grebe (Podiceps cristatus) [A005], Common greenshank (Tringa nebularia) [A164], Northern shoveler (Anas clypeata) [A056], Grey plover (Pluvialis squatarola) [A141], Greater scaup (Aythya marila) [A062], Mallard (Anas platyrhynchos) [A053], Eurasian wigeon (Anas penelope) [A050], Red knot (Calidris canutus) [A143], Red-breasted merganser (Mergus serrator) [A069], Black-headed gull (Larus ridibundus) [A179].	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects

Site Code	Site Name	Distance (km)	Qualifying Feature (Qualifying Interests and Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects	Likely Significant Effects (Y/N)
			Common redshank (Tringa totanus) [A162], European golden plover (Pluvialis apricaria) [A140], Great cormorant (Phalacrocorax carbo) [A017], Ruddy turnstone (Arenaria interpres) [A169], Northern lapwing (Vanellus vanellus) [A142]				
001957	Boyne Coast and Estuary SAC	62.23	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes") [2120], Annual vegetation of drift lines [1210], Estuaries [1130], Atlantic salt meadows (Atlantic salt meadows (Glauco-Puccinellietalia maritimae)) [1330], Mudflats and sandflats not covered by seawater at low tide [1140], Salicornia and other annuals colonizing mud and sand [1310], Shifting dunes (Embryonic shifting dunes) [2110], Fixed coastal dunes with herbaceous vegetation ("grey dunes") [2130]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects
004080	Boyne Estuary SPA	63.38	Ringed plover (Charadrius hiaticula) [A137], Black-headed gull (Larus ridibundus) [A179], Northern lapwing (Vanellus vanellus) [A142], Little tern (Sterna albifrons) [A195], Common redshank (Tringa totanus) [A162], Common shelduck (Tadorna tadorna) [A048], Ruddy turnstone (Arenaria interpres) [A169], Eurasian teal (Anas crecca) [A052], Eurasian wigeon (Anas penelope) [A050], Common greenshank (Tringa nebularia) [A164], Mew gull (Larus canus) [A182], Eurasian oystercatcher (Haematopus ostralegus) [A130], Eurasian curlew (Numenius arquata) [A160], Mallard (Anas platyrhynchos) [A053], Red knot (Calidris canutus) [A143], Red-breasted merganser (Mergus serrator) [A069], Great cormorant (Phalacrocorax carbo) [A017], Bar-tailed godwit (Limosa lapponica) [A157], European golden plover (Pluvialis apricaria) [A140], Sanderling (Calidris alba) [A144], Grey plover (Pluvialis squatarola) [A141]	The LABAP will not generate any source of negative environmental impacts that may result in a negative significant effect on this European Site.	No	No	No likely significant effects

4. SCREENING CONCLUSION

This report presents an examination of whether the LABAP is likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and is based on best available scientific knowledge. This report has been prepared to inform the competent authority in completing their statutory obligations in relation to Appropriate Assessment, as required by Article 6(3) under Council Directive 92/43/EEC (Habitats Directive).

It can be concluded beyond reasonable scientific doubt, in view of best scientific knowledge, on the basis of objective information, that the plan, individually or in combination with other plans and projects, is not likely to have a significant effect on European sites. The principal reasons for this are as follows:

- The LABAP does not introduce any source of impacts that have potential for interactions with the receiving environment.
- All actions in the LABAP are aimed at protecting and enhancing biodiversity. There is no requirement to integrate further environmental considerations into the LABAP given its intrinsic nature, its stated aims and objectives, and the potential positive effects associated with its actions.
- The LABAP is in alignment with nature legislation and higher order policy such as the 4th National Biodiversity Action Plan and inter-related plans and programmes.
- The actions in the LABAP do not support intensive land use or development projects sitting outside the land use planning framework that can cause likely significant negative environmental effects.
- The LABAP is not a statutory land use plan. The LABAP will not in and of itself set the context for future development consent. Any lower-order plans and projects supported by plan shall be subject to Appropriate Assessment Screening, where necessary, in accordance with the requirements of European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) or the Planning and Development Act 2000 (as amended), as the case may be.

FEHILY TIMONEY

DESIGNING AND DELIVERING
A SUSTAINABLE FUTURE

APPENDIX 1

Background Information on European Sites

Appendix 1 - Table 1 Quality and site characteristics of European sites considered in the assessment

Site Code	Site Name	Quality of Site	Other Site Characteristics
000571	Charleville Wood SAC	The woodland is one of a very few ancient woodlands in Ireland with some parts undisturbed for at least 200 years. Notable for its size and the occurrence of several rare insect species particularly Mycetobia obscura. The lake attracts locally to regionally important numbers of waterfowl. The site supports a large population of the rare snail Vertigo moulinsiana.	A large oak woodland on deep glacial deposits surrounded by estate parkland and agricultural grassland. Site includes a small lake partially overgrown by reed swamp with a wooded island and a stream bordering the western site margin.
000581	Moyclare Bog SAC	Moyclare Bog is a small raised bog site which contains examples of the Annex I habitats active raised bog degraded raised bog and depressions on peat substrates (Rhynchosporion). Much of the bog surface is wet and has a moderate to high cover of Sphagnum moss. It supports Rhynchospora fusca a relatively rare species. Perhaps the most striking feature of this bog is the high proportion of active raised bog within the uncut dome (c.60%). The site occurs in close proximity to a number of important raised bogs close to the flood-plain of the River Shannon.	The site is underlain by low permeability Waulsortian Carboniferous limestones. The subsoil geology is dominated by silty/stoney till. Sections to the north indicate that shell marl underlies the peat in places. Most of the raised bogs in the vicinity have been cut away by Bord na Móna over the past 50 years. Part of the cutaway bog has been converted to improved grassland but is included in the site for hydrological reasons.
000925	The Long Derries Edenderry SAC	This is an important site for several reasons. It supports good quality dry calcareous esker grassland in which occurs a substantial population of the rare and protected Orchis morio. An interesting transition between this habitat and acid peaty grassland is found on the eastern side of the site. Gravel quarries on the site support other rare plant species: Acinos arvensis (a protected species) and Erigeron acer as well as the uncommon introduced Minuartia hybrida. The site is an important ornithological site; the most notable species Caprimulgus europaeus (Nightjar) of which only about thirty pairs are known to breed in Ireland breeds on the site. Several other important bird species also occur.	The site forms part of a low esker ridge which primarily consists of glacial gravels interspersed with loam and peat soils. The site comprises a mosaic of dry esker grassland (calcareous) Cretaegus scrub gravel quarries (used and disused) and humid grassland. The north-eastern side of the site grades into peatland and here an interesting mixture of acid and base loving plants occurs. Much of the western half of the site was previously used as a golf course. A wide variety of activities occur on the site and the western half is the most disturbed.

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001387	Ballynafagh Lake SAC	Alkaline fen is a main habitat at this site occurring in mosaic with a range of swamp and transitional bog communities as well as fen woodland. The fen is well-developed and of good quality and represents one of the best examples in eastern Ireland. The site also contains a relict population of Vertigo moulinsiana. Confirmed record for 1997 and noted to be a large population.All recently surveyed sites with confirmed populations of this species are considered important. The site supports a population of Euphydryas aurinia and contains a number of other rare invertebrate species some of which are good wetland indicator species including the mollusc Pisidium pseudosphaerium the lepidopterans Ectoedemia argyropeza and Apomyelois bistriatella subcognata and the coleopterans Chlaenius tristis and Philonthus corvinus. Of some local importance for wintering waterfowl.	The site comprises a former reservoir (generally called Ballynafagh Lake) and an associated canal feeder (Blackwood feeder) the latter now disused and mostly dry. The lake is shallow and is now very overgrown with various wetland vegetation types with only a small area of open water remaining. Fen is the predominant habitat with reed-swamp wet grassland and some bog or heath also occurring. A strip of deciduous woodland occurs on some drier ground. The main habitats along the canal feeder are dry grassland (partly improved) wet grassland swamp vegetation and scrub.
001683	Liskeenan Fen SAC	The site supports a good though small example of Cladium mariscus fen. It occurs in association with alkaline fen and Phragmites reed beds. Cutover raised bog scrub and woodland add diversity to the site and the close proximity of the fen and bog habitats is of ecological interest. The site supports a stand of Orchis morio a Red Data Book species. Fen habitats such as at this site are nowadays scarce in Co. Tipperary.	This site is located approximately 7 km north-east of Borrisokane in north Co. Tipperary. It comprises a shallow wet basin dominated by fen vegetation which is adjacent to cutover raised bog. While the fen still floods somewhat in winter it may have been more 'turlough' in character in the past - a former inflow has been diverted to a major drainage channel which drains the western part of the basin. A swallow hole does not appear to be active. The substrate of the wetland area is peat over marl. The cutover bog is quite wet and has a good Sphagnum cover. Scrub occurs over part of the cutover bog while a stand of mixed woodland occurs at the eastern end of the site. Improved grassland occurs around the west and south-west margins of the site along with some wet grassland and unimproved dry grassland.
001776	Pilgrim's Road Esker SAC	The importance of the site lies in the relatively large area of high quality species-rich calcareous grassland that occurs. This grassland supports a suite of orchid species including Orchis morio of which this site holds probably the largest population of the species in the country. The occurrence of woodland on the site is notable; esker woodland is becoming increasingly rare in Ireland.	The site comprises an impressive steep-sided esker ridge which is composed of glacial sands and gravels and situated on the north side of Mongan raised bog and to the east of the River Shannon. Species-rich calcareous grassland is the dominant vegetation of the site; areas of Corylus avellana/Fraxinus excelsior woodland scrub improved grassland and gravel pit are also included in the site.

Site Code	Site Name	Quality of Site	Other Site Characteristics
002213	Glenloughaun Esker SAC	Although small in area this is an excellent example of dry calcareous grassland which is largely unimproved. Of particular note is the species diversity. The orchid interest lies in the occurrence of a large population of Orchis morio a Red Data Book plant species. Orchis mascula also occurs.	This small site is situated on an esker ridge approximately 5 km south-west of Ballinasloe in Co. Galway. It comprises mostly unimproved dry grassland. A feature of the site is the somewhat unusual mixture of calcicole and calcifuge species. Leaching of the base-rich substrate of the esker is likely to have given rise to soil conditions suitable for colonisation by calcifuge species. Some scrub and hedgerows are also present within site along with a small area of deciduous woodland. Main landuse is grazing.
002332	Coolrain Bog SAC	This site is one of the most southerly relatively intact raised bogs in the country. Although pool systems are absent the bog surface is relatively wet and flat and a significant proportion is classified as active bog. There is a high Sphagnum cover which includes the relatively rare species S. imbricatum and S. fuscum. Four small wet flushes dominated by Pinus contorta occur in the active bog area. The area of degraded raised bog is small in extent though shows a typical range of plant communities. Rhychosporian vegetation is represented mainly in the area of active bog. The location of this site close to the southern limits of raised bog distribution in Ireland makes it of high biogeographical interest.	The site is located 9 km south-west of the village of Mountrath Co. Laois. The bog overlies Old Red Sandstone bedrock in contrast to most Irish raised bogs which overlie Carboniferous limestone. Uncut high bog occupies almost half the site area and a high proportion of this is classified as active bog. Substantial areas of the surrounding cutover bog have been afforested with conifers and a portion of this area has been included within the site for to preserve the integrity of the high bog. Other areas of cutover have been converted to pasture grassland of varying quality.
002339	Ballynamona Bog and Corkip Lough SAC	This site displays an excellent diversity of bog and wetland habitats. While the uncut high bog is mainly classified as degraded raised bog there is a small area of active raised bog within a central wet flush zone. Rhynchosporion vegetation is also represented with the presence of the scarce Rhynchospora fusca of some note. However the presence of bog woodland is of particular note as it is considered as one of the best-formed and most extensive areas of bog woodland in the country. Corkip Lough constitutes a good example of a turlough system containing both a permanent water area and an extensive area of seasonally inundated turlough grassland. In addition there are areas of species-rich calcareous grassland and fen which are of ecological interest. Overall the quality of the habitats occurring at this site is generally good with the areas of bog woodland and turlough being of particularly high	Ballynamona Bog and Corkip Lough is a diverse site situated in Co. Roscommon some 8 km west of Athlone. The site and surrounding land overlies limestone bedrock and the soils present are derived from limestone drift. The western half of the site is dominated by a turlough while the eastern half is dominated by a small raised bog complex a significant part of which is uncut high bog. Much of the site is surrounded by low esker ridges which contain areas of species-rich calcareous grassland and scrub. Corkip Lough fluctuates markedly throughout the year and during the summer the water level drops revealing a species-rich wetland flora.

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		ecological value.A number of relatively rare plant and animal species occur these include the rare aquatic invertebrate Eurycercus glacialis and the wetland plant Teucrium scordium. In general this site ranks as one of the most diverse and species-rich small sites in Co. Roscommon.	
002353	Redwood Bog SAC	This extensive site contains good examples of active raised bog degraded raised bog and Rhynchosporion vegetation. The area of active raised bog present is one of the largest in counties Tipperary and Offaly. The location of the bog within the flood-plain of the Shannon and Little Brosna rivers adds to its interest. Redwood Bog is a feeding site for the Little Brosna flock of Anser albifrons flavirostris though its usage nowadays appears to be low. Overall this site part of which is a state-owned nature reserve is considered as one of the most important relatively intact raised bogs along the banks of the River Shannon.	Redwood Bog is a large raised bog site located along the eastern banks of the River Shannon in the most northerly corner of Co. Tipperary. The bog is a good example of a flood-plain bog lying at the confluence of the Shannon and Little Brosna rivers. Approximately one-third of the site is uncut high bog though much of this is classified as degraded bog. Cutover bog accounts for approximately 55% of the site area. Commercial peat-cutting still continues within this site dominating the western half. Small parts of the cutover have been invaded by Betula pubescens scrub while other parts have been converted to wet pasture grassland.
004064	Lough Ree SPA	Lough Ree is one of the most important Midland sites for wintering waterfowl with nationally important populations of Anas penelope Anas crecca Anas acuta Anas clypeata Aythya fuligula and Bucephala clangula. Nationally important populations of Pluvialis apricaria and Vanellus vanellus are also associated with the lake. Regionally important numbers of Cygnus cygnus and Anser albifrons flavirostris are also found in the vicinity of the lake. The site supports a nationally important population of Sterna hirundo. Larus ridibundus breeds (nationally important) and Larus fuscus and Larus canus have bred in the past (recent census information is poor). Lough Ree is an important site for breeding duck and grebes with Aythya fuligula and Podiceps cristatus having populations of national importance. Of particular note is that it is one of the two main sites in the country for breeding Melanitta nigra a Red Data Book species. The woodland around the lake is a stronghold for Sylvia borin and this scarce species probably occurs on some of the islands within the SPA. Lutra lutra is frequent within the site and the fish Coregonus autumnalis pollan occurs.	Situated on the River Shannon between Lanesborough and Athlone Lough Ree is the third largest lake in the Republic of Ireland. It lies in an ice-deepened depression in Carboniferous Limestone. Some of its features (including the islands) are based on glacial drift. The main inflowing rivers are the Shannon Inny and Hind and the main outflowing river is the Shannon. The greater part of Lough Ree is less than 10 m in depth but there are six deep troughs running from north to south reaching a maximum depth of about 36 m just west of Inchmore. The lake has a very long indented shoreline and hence has many sheltered bays. It also has a good scattering of islands most of which are included in the site. The lake is classified as a mesotrophic system. The water of Lough Ree tends to be strongly peat-stained restricting macrophytes to depths of less than 2 m. Swamp vegetation especially of Phragmites australis occurs in the sheltered areas around the lake. The swamp often grades to species-rich calcareous fen or freshwater marsh. Lowland wet grassland some of which floods in winter is found in abundance around the shore. Some of the islands are wooded.
004137	Dovegrove Callows SPA	Dovegrove Callows is of importance as a high water feeding site for the internationally important Little Brosna population of Anser albifrons	The site is situated on the Little Brosna River approximately 2 km downstream of Birr and 11 km from the confluence with the River

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		flavirostris. Of particular significance is that it can support the entire flock when most other feeding sites are submerged by floodwater.	Shannon. It is typical wet callow grassland that floods regularly. Grazing is the principal landuse.
000575	Ferbane Bog SAC	Ferbane Bog is an example of a relatively small raised bog site which contains good examples of the Annex 1 habitats active raised bog degraded raised bog and depressions on peat substrates (Rhynchosporion). Uncut high bog dominates the site and is surrounded by a narrow band of cutover. approximately 35% of the high bog surface consists of very wet active bog with the remainder degraded but capable of regeneration. Areas of poor-fen vegetation and birch woodland occur on cutover surfaces along the margins of the site and add to the habitat diversity.	This site is underlain by low permeability Waulsortian limestone bedrock. The subsoils are predominantly low permeability clay rich tills. The bog developed in a basin. This site represents a range in the variation seen in geomorphological setting.
000576	Fin Lough (Offaly) SAC	A diversity of habitats showing the transition from open water fen fen carr and raised bog are exhibited at the site and give rise to a rich diversity of plants and animals. One of the few open water areas in the county the lake is of value for wintering waterfowl. Site supports a population of Vertigo Geyeri and is also important for Chrysogaster macquarti and Platycheirus perpallidus.	A limestone lake surrounded by fen marsh fen carr and grading into surrounding pasture grassland. Drainage works to facilitate peat milling activities adjoining the site have accelerated the seral development from open water to fen and raised bog with large areas of the former lake basin now overgrown by reedswamp and scrub woodland.
000585	Sharavogue Bog SAC	Sharavogue Bog SAC is a site of considerable conservation significance comprising two subsites: Sharavogue Bog and Cangort (Kilfrancis) Bog which contain raised bog a rare habitat in the EU and one that is becoming increasingly scarce and under threat in Ireland. It contains good examples of the EU Habitats Directive Annex I habitats Active Raised Bog (7110) Degraded Raised Bog (7120) and Depressions on peat substrates of the Rhynchosporion (7150). The site already supports a good diversity of raised bog microhabitats including some hummock/hollow complexes and rewetted cutover bog. Ireland has a high proportion of the total EU resource of Atlantic raised bog (over 50%) and so has a special responsibility for its conservation at an international level. Along the eastern margins of Sharavogue there is upwelling of base-rich water into the lagg zone and these areas now support carr woodland and calcareous fen vegetation.	Sharavogue Bog (SAC) (236.55 ha) is located about 8km south of Birr Co. Offaly in the Little Brosna Valley. It consists of 2 raised bog sites. The main area Sharavogue Bog covers 223.43 ha while a smaller outlier Cangort (Kilfrancis) Bog is located 4km further south and comprises 13.12 ha. Sharavogue Bog is situated between the River Little Brosna and an elevated ridge of Carboniferous limestone. Sharavogue includes 137 ha of uncut raised bog and 86.43 ha of surrounding areas which include cutover bog wet grassland semi-natural woodland and an area of wet lagg vegetation in the cutover along the eastern margin of the bog. The bog is underlain by low permeability limestone and limestone till. Groundwater upwells at the base of the ridge that occurs to the east of the bog. Cangort (Kilfrancis) Bog is the part of Cangort Bog NHA (000890) and it has been restored as part of an EU LIFE project. The site consists of

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		Areas of wet lagg vegetation such as this are very rare in Western Europe and the lagg system at Sharavogue is one of the best developed in the country. The protected semi-aquatic plant species Slender Cottongrass (Eriophorum gracile) is growing in fen vegetation in the lagg zone while the nationally rare shrub Alder Buckthorn (Frangula alnus) occurs in dry bog woodland on cutaway. Although the Cangort (Kilfrancis) Bog subsite of the SAC is small (13.12 ha) and currently lacks annex habitats full restoration measures have been implemented and it has the potential to support the retention of Degraded Raised Bog in Cangort Bog NHA (000890).	2.53 ha of high bog and 10.59 ha of cutover most of which was afforested in the 1970s. The underlying geology is carboniferous limestone. Sharavogue Bog is one of the few remaining raised bogs in Ireland situated on a floodplain. It has a well-developed dome of uncut peat which is long and relatively narrow. Active Raised Bog (ARB) is confined to the more southern central part of the dome covers 25.8 ha but lacks any areas of central ecotope as a result of long-term drying out caused by peat cutting and marginal and river drainage. In addition drains were inserted across about 60% of the high bog dome in the early 1990s. All the drains on the high bog and many of the drains on the south eastern area of the cutover were dammed in the late 1990s as part of an EU Cohesion project to restore peat forming conditions on the high bog and cutover. The bog surface has also been damaged by burning in the past and there are invasive native and non-native species are present on the bog dome. The dominant micro-topography consists of Sphagnum hummocks and hollows. Pools are scarce and Sphagnum cuspidatum filled lawn-like depressions are very occasional. Rhynchosporion depressions (7150) are open pioneer type vegetation communities of wet depressions on acid peat in both natural and man modified situations. Rhynchosporion vegetation occurs along pool edges (very scarce in Sharavogue Bog) on lawns and hollows underlain by deep wet and quaking peat. Cangort Bog NHA is a remnant of a larger area of bog much of which has now been cutover and reclaimed for forestry and agriculture. In the SAC section of the NHA all the afforested areas on the high bog and cutover were clear-felled and the associated drains blocked in 2014. Site specific conservation objectives have been set for Sharavogue Bog SAC for Active Raised Bog. One of the key targets is to restore the area of Active Raised Bog to 40.9 ha and it has been determined using modelling techniques that there is potential for 14.7 ha of Degraded Raised Bog to be restored to Active Raised Bog on the high bog following restoration measures.

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			There is also long-term potential for 0.4 ha of Bog peat-forming habitats (BPFH) to develop if restoration measures are undertaken on cutover areas. A restoration plan has been developed to achieve these targets. Detailed objectives have yet to be developed for the Cangort (Kilfrancis) subsite of the SAC but will be produced as part of the restoration plan for the Cangort Bog NHA site. Cangort (Kilfrancis) Bog is being actively managed for conservation by the landowner Coillte as part of an EU LIFE Project and most of the required restoration measures have already been carried out. Sharavogue Bog is part of the current NPWS Restoring Active Raised Bog in Irelands SAC Network 2016-2020 (LIFE NAT/IE/000032).
000641	Ballyduff/Clonfinane Bog SAC	Ballyduff/Clonfinane Bog is a medium sized raised bog which contains good examples of the Annex I habitats active raised bog degraded raised bog depressions on peat substrates (Rhynchosporion) and bog woodland. The central parts of both sub-sites are very wet and there are very good pool complexes especially at Clonfinane. At Clonfinane there is some potential for the development of lagg vegetation along the northern margins of the site where the peat depth appears to be naturally shallow. Although parts of the site have been drained in the past there has been significant restoration of the high bog areas in the Clonfinane portion of the site. The nationally rare shrub Frangula alnus grows in tall Betula pubescens woodland along the northern margins of Clonfinane.	This site is underlain by low permeability Waulsortian limestones. Clayey tills black lake clays and laminated lake clays dominate the subsoils. The bog has developed in a number of former shallow laustrine basins which coalesced over low ridges.
000647	Kilcarren-Firville Bog SAC	Kilcarren-Firville Bog is a relatively large raised bog site which contains good examples of the priority Annex I habitat active raised bog and the non-priority habitats degraded raised bog and depressions on peat substrates (Rhynchosporion). The quality of these habitats is good and in addition there is a large area of surrounding cutover which contains a number of regenerating areas and some areas of well-developed scrub. These scrub areas provide habitat for a population of the nationally rare shrub Frangula alnus. Of particular hydrological note is the presence of	This site is underlain by low permeability Waulsortian limestone bedrock with low permeability clayey limestone tills dominating the subsoil. Peat developed in a number of basins which coalesced over low ridges. This has led to the development of infiltration areas along the northern edges.

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		infiltration zones along the margins of the site. These could potentially be developed into lagg areas in the future.	
001625	Castlesampson Esker SAC	The importance of this site lies in its almost intact structure something that is very rare in Irish eskers in its relatively undisturbed nature and in the presence of good quality species-rich dry calcareous grassland. The absence of large blocks of scrub on the esker is notable. This grassland vegetation supports a rich variety of species some of which are rare on eskers or in the midlands including four orchid species. The rare Erigeron acer a Red Data Book species is found in the three gravel pits on the site. The protected Acinos arvensis occurs in a gravel pit on the site north of the main road. The site includes a series of turloughs.	The site is dominated by a steep-sided esker composed of glacial gravels. The vegetation of most of the esker is of dry grassland with small amounts of scrub scattered throughout. Improved grassland occurs commonly on the site; this is found mainly on the level ground at the base of the esker. Three gravel pits occur within the site. These support mainly open vegetation including two rare plant species. One of the gravel pits supports a number of fen species.
002206	Scohaboy (Sopwell) Bog SAC	Scohaboy (Sopwell) Bog SAC is a site of considerable conservation significance comprising raised bog a rare habitat in the EU and one that is becoming increasingly scarce and under threat in Ireland. It contains good examples of the EU Habitats Directive Annex I habitat Degraded raised bog (capable of regeneration) which is being restored to the priority Annex 1 habitat Active raised bog. The site already supports a good diversity of raised bog microhabitats including some hummock/hollow complexes tear pools and rewetted cutover bog and is one of the more southerly raised bogs in the south Midlands which adds significantly to its ecological importance. Ireland has a high proportion of the total EU resource of raised bog (over 50%) and so has a special responsibility for its conservation at an international level. The site is being actively managed for conservation as part of the Coillte EU LIFE Project and most of the required restoration measures have already been carried out. Those measures that remain or are ongoing should be achievable with average effort. An After LIFE management plan is being developed by Coillte for the future conservation management of the SAC. The SAC is located within the raised bog Scohaboy Bog NHA (000937) the conservation management of which should support the redevelopment of Active Raised Bog in the SAC. The presence of White-clawed Crayfish (Austropotamobius pallipes) a species listed in Annex II	Scohaboy (Sopwell) Bog SAC (002206) comprises 71.91 ha of raised bog (62.36 ha of high bog and over 9.55 ha cutover) which occupies the central section of the northern end of Scohaboy Bog NHA (000937). Scohaboy Bog is a Midland type raised bog developed in a basin. The site is bounded by peatland on all margins apart from the north where a stream flows along the northern margin. Cutover bog occurs in the south-east of the site and an area of approximately 19 ha of clear-felled coniferous plantation is present on the high bog to the north of the site. Over 43 ha of the high bog was never afforested but a considerable proportion of that area was subjected to intensive but shallow drainage. That drainage was not maintained and in some areas has naturally partly infilled by bog moss Sphagnum species regrowth over the years. The afforested area was planted in the 1980s and was all clearfelled by 2013. Much of the unafforested high bog has vegetation typical of Midland Raised Bog type. The two scarce hummock forming bog mosses Sphagnum fuscum(sensu lato) and S. austinii occur with the latter being locally frequent in places. Some of the recovering pool systems are quite large with Bog Bean (Menyanthes trifoliata) and Great Sundew (Drosera anglica) present.

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		of the EU Habitats Directive adds to the diversity and scientific value of the site. The population at this site is considered to have a favourable conservation status with the presence of adults and juveniles. The presence of this species increases the overall scientific interest of the site.	When the conifer plantation in the SAC were removed the intensive drainage system associated with it was blocked by 2014 as part of an EU funded LIFE project so as to raise the water table and restore Active raised bog (ARB) on the site. Prior to the felling there was relatively few bog species present. With the clear-felling of conifers and blocking of drains the high bog appears to be re-wetting with some areas of wet flats and hollows already developing and water-levels now much higher throughout the year. However the majority of the former plantation will not develop vegetation characteristic of the wettest conditions as the surface slopes in this area are too steep and there is a considerable amount of conifer and birch regeneration occurring in these areas. The main benefit of the tree removal and the drain blocking will be to improve the hydrology of the adjacent areas of unafforested high bog to the south of the plantation. There three areas covering over 11.6 ha have been identified by hydrological modelling as Degraded Raised Bog (7120) habitat (DRB). These now have standing surface water in the drains hollows and pools for most of the year and considerable areas of regenerating Sphagnum species. It is considered that this area will rapidly develop into Active Raised Bog within 10 years. Much of the cutover to the south-east of the site is dominated by Purple Moor-grass (Molinia caerulea) with scattered scrub of Gorse (Ulex europaeus) and Downy Birch (Betula pubescens) in places. Peat cutting ceased in the area in 2015 and the cutover drains were all blocked in late 2015. The area has now rewetted and should eventually support raised bog communities and species. It is estimated that approximately 1.6 ha of this cutover has the potential to support Active Raised Bog in the medium to long term (i.e. over 30 years period).
002207	Arragh More (Derrybreen) Bog SAC	The large area of Degraded Raised Bog habitat in Arragh More Bog SAC is of significant conservation value as it has the potential for restoration to over 10 ha of Active Raised Bog which is a priority habitat in the E.U. and one that is scarce and under threat in Ireland. The restoration actions undertaken to date are resulting in active redevelopment of the habitat towards Active Raised Bog which add to the diversity and	Arragh More (Derrybreen) Bog SAC (002207) comprises 90.58 ha of raised bog (57.9 ha of high bog and 32.68 ha cutover) which occupies the north-western section of Arragh More Bog NHA (000640). Arragh More Bog NHA developed originally in at least 3 basins aligned in a north south direction which were initially separated by low ridges of relatively impermeable glacial till overlying limestone bedrock. As these bogs grew

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		scientific value of the site. Large sections of the Degraded Raised Bog in the more flushed parts of the bog may also develop directly or via Active Raised Bog into the very rare priority habitat Bog Woodland (91D0) which would add further to the scientific interest of the site. The site is being actively managed for conservation as part of the Coillte E.U. LIFE Project. The SAC is located within the raised bog Arragh More Bog NHA (000640) the conservation management of which should support the redevelopment of Active Raised Bog in the SAC while the management of the SAC will support the retention of 3 ha of Active Raised Bog in the NHA. Overall there is a large area of bog with good restoration potential for two priority habitats and most of the required restoration measures have already been carried out. While some significant threats remain the size and potential of the site makes it of international importance.	they eventually coalesced over these low ridges to form one bog with a very complex shape. Arragh More Bog NHA is therefore the remnant of a large bog that was originally part of a system of interconnecting bogs which are now separated by roads and cutover that has been reclaimed for agriculture. The SAC occupies the western parts of the two most northerly basins. The surface of the high bog in the central basin is lower than that to the east and south and receives significant amounts of runoff from them resulting in the development of an internal flush system. The SAC is bordered by forest plantations on cutover to the north raised bog and cutover to the east and south and agricultural grassland to the east. The SAC was mostly afforested in in the 1970s with just over 12 ha (13%) of high bog in the north-east and south of the site being left unplanted. The remaining areas of intact high bog have vegetation typical of a Midland Raised Bog. Some hummocks of the relatively scarce S. austinii and S. fuscum (sensu lato) have been recorded. Two main areas of high bog covering 11.4 ha have been identified as Degraded Raised Bog (DRB) and thus with potential to develop peat forming habitats (Active Raised Bog and Bog Woodland). These consist of a large area (9.9 ha) to the east with two large lobes and a much smaller one (1.5 ha) to south-east section of the SAC. There is a small area of Bog Woodland to the east just outside the site to provide the characteristic species for that habitat.
002236	Island Fen SAC	This site is important as it supports fine examples of the Annex 1 habitat Juniper scrub formations over calcareous grasslands/heath along with some small though species rich areas of alkaline fen - also an Annex 1 habitat. This Juniperus communis site is the only site proposed for this habitat type east of Lough Derg.	The geology of the site is of Lower Carboniferous Limestone and the principle soil is grey brown podzolic. The site overlies an old lake bed lined with shelly marl. Soil cover is generally thin with some rocks protruding locally. Much of the site is dominated by Phragmites australis reedbeds which merge northwards into calcareous grasslands/heath with upright Juniper scrub formations. To the west and south small zones of alkaline fen occur along with a small hazel and ash woodland.
002336	Carn Park Bog SAC	Although a relatively large proportion of this site has been afforested it still contains a substantial area of active raised bog. This is typical of the midland raised bog type with hummock/hollow complexes pools and	Carn Park Bog lies approximately 8 km east of Athlone. It comprises an area of uncut high bog and surrounding cutover areas. Part of the high bog is active raised bog though the greater part is classified as degraded.

Site Code	Site Name	Quality of Site	Other Site Characteristics
		Sphagnum lawns. The diversity of Sphagnum species is notably high and includes the nationally rare Sphagnum pulchrum. Degraded raised bog is also well represented though part of this has been afforested. The areas of cutover bog which have not been planted add to the biodiversity of the site.	A substantial area of the degraded high bog and the cutover bog has been planted with conifers. Part of the cutover bog has been invaded by Betula pubescens scrub. Further afforestation occurs adjacent to the site.
002342	Mount Hevey Bog SAC	Mount Hevey Bog is one of the most easterly relatively intact raised bogs in Ireland and represents one of the largest bog areas in the eastern half of the country. Although more than half of the site area consists of cutover bog there is a large area of active raised bog. The active areas support well-developed pool areas and have a high Sphagnum cover which include the rare species Sphagnum fuscum and S. imbricatum. A soak area which has developed from an infilled lake and now supports some Betula pubescens trees adds diversity to the bog surface. A substantial area of uncut high bog that is classified as degraded raised big is present. The degraded bog supports a wide range of plant communities depending on factors such as height of water table and past burning events. The bog and especially the active parts contains substantial areas of Rhynchosporion vegetation which have a typical species composition and generally exist in a well-preserved condition. The cutover areas which surround the high bog contain large areas of scrub woodland dominated by Betula pubescens.	Mount Hevey is a large midland raised bog which is situated 3 km north-east of Kinnegad village and lies on the border of counties Meath and Westmeath. The bog overlies Carboniferous limestone bedrock and occurs in four sections. Two of these are small and lie to the north of a railway line while two larger lobes lie to the south of the railway line. These two larger lobes are of higher ecological value due to the presence of active bog. Cutover bog surrounds the uncut high bog. Part of the high bog and also part of the cutover has been afforested with conifers. Other parts of the cutover has been invaded by Betula pubescens scrub and small amounts of broad-leaved woodland. Some of the cutover has been converted to semi-improved grassland.
004058	Lough Derg (Shannon) SPA	Lough Derg is of importance for both breeding and wintering birds. The islands support nationally important breeding colonies of Sterna hirundo Phalacrocorax carbo Podiceps cristatus and probably Aythya fuligula. It is a traditional site for nesting Larus ridibundus but there is no recent survey information. In winter the lake is particularly important for diving ducks with nationally important populations of Aythya fuligula and Bucephala clangula occurring. Cygnus olor also has a population of national importance whilst a range of other species occur in lesser numbers including Cygnus cygnus Anas crecca Fulica atra and Vanellus vanellus. A flock of Anser albifrons flavirostris has	Lough Derg is the largest of the Shannon Lakes being some 40 km long. Its maximum breadth across the Scarriff Bay-Youghal Bay transect is 13 km but for most of its length it is less than 5 km wide. The lake is relatively shallow at the northern end being mostly 6 m in depth but in the middle region it has an axial trench and descends to over 25 m in places. The narrow southern end of the lake has the greatest average depth with a maximum of 34 m. The greater part of the lake lies on Carboniferous limestone but the narrow southern section is underlain by Silurian strata. Most of the lower part of the lake is enclosed by hills on both sides the Slieve Aughty Mountains to the west and the Arra Mountains to the east. The northern end is bordered by relatively flat agricultural country. The

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		traditionally used the site where they feed on grassy islands but birds have seldom been recorded in recent years.	lake shows the high hardness levels and alkaline pH to be expected from its mainly limestone catchment basin and it has most recently been classified as a mesotrophic system. The lake has many small islands especially on its western and northern sides. The shoreline is often fringed with swamp vegetation. Aquatic vegetation includes a range of charophyte species.
004086	River Little Brosna Callows SPA	This site is of international importance because it regularly supports in excess of 30000 waterfowl and is rated among the top five sites in the country for numbers of wintering birds. At a species level it supports internationally important populations of Anser albifrons flavirostris and Limosa limosa. The Anser albifrons flavirostris flock is the largest outside of the Wexford Slobs whilst the Limosa limosa population accounts for over 15% of the national total and is the largest in the country. It has nationally important populations of a further seven species: Cygnus cygnus Anas penelope Anas crecca Anas acuta Anas clypeata Pluvialis apricaria and Vanellus vanellus. The Anas penelope population is over 10% of the national total whilst the Anas acuta Anas clypeata and Pluvialis apricaria populations are over 5% of the respective totals The Calidris alpina population is notable as inland populations of this species are rare. It has substantial nesting populations of Gallinago gallinago and Tringa totanus though the numbers of nesting waders has decreased since the 1980s. Crex crex formerly bred but not since the early 1990s. This site provides one of the few remaining examples in the country of a large river system which still floods in a fairly natural way.	The site follows the River Brosna from its confluence with the River Shannon for approximately 9 km south-eastwards to just beyond New Bridge. The main habitat present is grassland that is improved to varying extents and which is seasonally flooded. The less improved areas are species-rich. The grassland is used mainly for pasture but some is used for hay-making. The river channel is fringed by swamp and marsh vegetation. The site adjoins several raised bogs and cutover bogs.
004096	Middle Shannon Callows SPA	This site is the largest area of semi-natural floodplain grassland in Ireland and has very many features of a natural ecosystem. Along with its main tributaries the River Suck and River Brosna it represents one of the most important wetland systems in the country. It is of International Importance for wintering waterfowl as numbers regularly exceed the 20000 threshold (mean of 34985 for the 5 winters 1994/94-	The site follows the River Shannon from Athlone just below Lough Ree to Portumna just above Lough Derg a distance of over 50 km. It includes much of the flood plain of the river varying in width from approximately 0.5 km to up to 1.5 km in places. A weir at Meelick divides the flooding regime. The main habitat present is humid grassland improved to varying extents that is seasonally flooded. The less improved areas are species-

Site Code	Site Name	Quality of Site	Other Site Characteristics
		1998/99). Of particular note is the presence of an Internationally Important population of Cygnus cygnus. A further five species have populations of national importance: Cygnus olor Anas penelope Pluvialis apricaria Vanellus vanellus and Limosa limosa. There is a well documented spring passage of Limosa limosa along the river valley. The Shannon callows are also of high importance for breeding birds. In particular it has the largest concentration of Crex crex in Ireland. Since 1991 a conservation programme involving annual monitoring of population size practical habitat management and publicity has been in operation. Coturnix coturnix a very rare species in Ireland also breeds in the grasslands. Several wader species notably Vanellus vanellus Gallinago gallinago and Tringa totanus have important breeding populations though these have declined substantially since the 1980s. The scarce breeding species Anas clypeata nests in small numbers each year. The callows is one of the very few sites in Ireland where Limosa limosa has bred. The habitats also support a range of ground nesting passerine species notably Locustella naevia and Alauda arvensis. In autumn and winter Circus cyaneus is a regular visitor.	rich. The grassland is used mainly for pasture but some is used for hay-making. The river channel is fringed by swamp and marsh vegetation. There is an extensive system of drainage channels many of which support a diverse flora. The callows often border raised bogs some of which are still intact.
000216	River Shannon Callows SAC	This site is the largest area of semi-natural floodplain grassland in Ireland and Britain and has very many features of a natural ecosystem. It has been placed among the most 'natural' floodplains in western Europe. It is subject to regular and prolonged annual winter flooding. Wooded alluvial islands which flood regularly occur at one location. A number of Red Data Book and scarce plant species occur on the site the scarce species including Leucojum aestivum Sium latifolium Botrychium lunaria and Lemna gibba. In addition the site contains a very wide variety of native plant species. A small area of limestone pavement at Clorhane is of particular importance as it is the only example of this habitat in the region. Along with its tributary the Little Brosna (designated separately) this is one of the great waterfowl sites in Ireland with huge numbers of a wide range of species occurring in	The River Shannon is the largest river in Ireland and its central route drains a large percentage of the whole country. It has proved too powerful to be tamed by drainage schemes in the past and this central section is still free to flood the surrounding lowlands in winter. It is a well-used agricultural resource of low intensity during the summer. This floodplain functions as a semi-natural meadow/marsh habitat (used for grazing or hay-making). There is an extensive system of surface drains. The site is linear running for about 50 km at an average width of about 0.75 km (but reaching 1.5 km in several places). For about half its length it borders raised bogs most of which are in the process of large-scale peat harvesting. Esker ridges lie adjacent to the callows in some places. There are areas of both relict and active levees. A weir at Meelick divides the flooding regime. Ecological diversity is caused and maintained by multiple

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		winter with a mean peak of 34985 waterbirds recorded from 1995/96 to 1999/00. This is the third highest for an inland site in Ireland. The highest is the Little Brosna which is an extension to the Middle Shannon Callows. Only three estuarine sites are higher. In 1996/97 one species was of International Importance (Whooper Swan) and six species were of National Importance. A small flock of Anser albifrons flavirostris regularly use a few locations on the site and these are part of the Internationally Important flocks of both the Little Brosna and the River Suck. It is one of very few significant inland sites in Britain or Ireland for Calidris alpina. It is the top site in the country for Cygnus olor and close to that for Cygnus cygnus Vanellus vanellus and Pluvialis apricaria. The E.U. Birds Directive Annex I species Circus cyaneus regularly uses the site for hunting in autumn and winter. Perhaps even more important are its nesting Crex crex Coturnix coturnix and breeding waders. In 1987 1204 pairs of breeding waders were recorded (including adjacent parts of the Shannon) mainly Vanellus vanellus Gallinago gallinago Numenius arquata and Tringa totanus. Crex crex has one of its last strongholds here with 70 and 66 calling birds present in 1998 and 1999 respectively. The Shannon Callows is one of the few areas in Ireland where Coturnix coturnix breeds. Numbers vary between years but up to 14 males have been heard.There are high populations of ground-nesting passerines such as Alauda arvensis Anthus pratensis Locustella naevia and Emberiza schoeniclus on the site. The River Shannon Callows is a breeding site for two Red Data Book waterbird species: Limosa limosa islandica and Anas clypeata. The Red Data Book species Anas acuta has also bred on the site though its current status is unknown. The E.U. Birds Directive Annex I species Falco columbarius bred on the site in 1996. Large rivers flowing unfettered through lowland floodplains are now rare anywhere in Europe. This river and its associated habitats are of the highest conservation importance.	ownership variation in the flooding regime due to the topography of the callows hundreds of kilometres of drainage ditches differences in the amount of peat and alluvium in the soils and by the extensive nature of the site. The main habitat on the site is humid grassland managed for hay and pasture and these areas have the same management regime as the lowland hay meadows and Molinia meadows.
000391	Ballynafagh Bog SAC	Ballynafagh Bog is a small raised bog site which contains examples of the Annex 1 habitats active raised bog degraded raised bog and	This area is directly underlain by muddy fossiliferous limestones interbedded with calcareous shales. A reverse fault runs directly under

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		Rhynchosporion vegetation. The bog is one of the most easterly examples of a relatively intact raised bog in Ireland and together with Mouds Bog is one of only two such systems in Co. Kildare. A central depression on the high bog dome supports a substantial area of active raised bog with a locally high Sphagnum cover. The site is also of ornithological interest being within the breeding territory of a pair of Falco columbarius and providing habitat for breeding Gallinago gallinago and Numenius arquata. Lepus timidus hibernicus occurs within the site.	the bog so that the NW of the bog is underlain by fossiliferous mudmounds. Both have low permeabilities. The subsoils are predominantly clay rich tills of low permeability. Part of the site has been planted with conifers.
000396	Pollardstown Fen SAC	The largest spring-fed fen in Ireland largely intact and responding well to restoration measures. Supports one of the largest stands of Cladium fen and is one of the most studied examples of its kind in Ireland. Type locality for the Cirsio dissecti-Schoenetum nigricantis and contains a significant number of rare and threatened species. A number of internationally important invertebrates have been recorded and rare sub-aquatic invertebrates are particularly well represented. Pollardstown is the only known site in Ireland (or Europe) to support all three Annex II Vertigo species (V.geyeri V.angustior V. moulinsiana) and thus provides unique opportunity to study their different habitat and hydrological requirements. Re-flooding of reclaimed areas has increased the ornithological value of the site.	A large spring-fed fen situated in a shallow basin composed of up to 6m of marl/peat overlying clay. The fen contains the feeder channel of the Grand Canal and has survived several attempts at drainage and reclamation. Supports extensive areas of Cladium fen Schoenus fen reed and sedge swamp Molinia grassland and species-rich seepage areas. Restoration of the central fen area following partial reclamation in 1979 has caused re-flooding and allowed the re-establishment and expansion of aquatic and reedswamp vegetation and their associated fauna.
000412	Slieve Bloom Mountains SAC	One of the best and least disturbed mountain blanket bogs in Ireland representing an important biogeographical link in the east/west gradient of bog variation. Contains transitional elements between raised and blanket bogs notably Andromeda polifolia and Vaccinium oxycoccus and includes extensive heaths and headwater streams. Wet heath is well represented within the site. Alluvial woodland occurs within the Camcor River valley - this is of variable quality due to afforestation but quality will be improved with sensitive management	An isolated inland mountain range composed of Old Red Sandstone forming an elongated ridge extending for 25km in a North-east/South-west direction supporting extensive mountain blanket bog development. Site includes the headwaters of several river systems including the river Barrow. Surrounding lands are extensively afforested with conifer monocultures.

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		by the forestry agency. The Slieve Blooms is a stronghold for breeding Circus cyaneus.	
000440	Lough Ree SAC	One of the largest and most important lakes in Ireland Lough Ree is an excellent example of a natural eutrophic system. The woodlands at the site are considered the best in the midlands. The site also contains very good examples of degraded raised bog much of which retain a typical raised bog flora and which could be improved by restoration works. Bog woodland is also represented though some of this is planted Pinus species. A further area of wet woodland on cutover peat is notable for the abundance of Frangula alnus. Good to moderate examples of alkaline fens and calcareous dry grasslands also occur. Limestone pavement with species-rich woodland occurs at Rathcline. Several Red Data plant species occur. Lutra lutra is frequent on the site and the fish Coregonus autumnalis pollan has been recorded. It is an important bird site for wintering and breeding waterfowl and has a colony of Sterna hirundo. It is of particular importance for the breeding population of Melanitta nigra as it is one of only three sites for the species in Ireland. Water quality of the lake is considered good.	A large mesotrophic moderate-eutrophic lake situated in an ice deepened depression in carboniferous limestone on the River Shannon. Greater part is less than 10 m in depth but there are deep troughs from north to south of depths between 17-33 m. Lough Ree has a long and much indented shoreline mostly stony with some gravel and sand. In parts reed swamp alkaline fen bog freshwater marshes wet and dry grassland and wet woodland occurs. Numerous islands some wooded occur in the lake. Dry broad-leaved woodland of good quality is included in site. Lough Ree is surrounded by agricultural land of moderate to high intensity and is close to Athlone town. Eutrophication may be a problem but at present Lough Ree is less affected than other midland lakes notably Lough Derg.
000572	Clara Bog SAC	Clara Bog is a very good example of a large midland raised bog which contains examples of the Annex I habitats active raised bog degraded raised bog bog woodland depressions on peat substrates (Rhynchosporion) and orchid-rich calcareous grassland. One of the most unusual features of the bog is the presence of an infilling lake which supports mesotrophic fen vegetation. There is an associated soak area which is dominated by a well-developed wet birch woodland. This area of bog woodland is one of the best examples of the habitat in the country and supports a rich invertebrate flora which includes Parhelophilus consimilis and Ampedus pomorum. The moss Tetraplodon angustatus has its only Irish station on the bog while it is also the last known site for the vascular plant species Scheuchzeria	Most of the site is underlain by low permeability Waulsortian limestone. The southern section is underlain by relatively impermeable massive limestone. This bedrock is overlain by sands gravels and boulder clays which in turn are overlain by a layer of lacustrine clay. Shell marl is seen in a few places. The peat layer developed on top of this. An esker ridge runs roughly east-west along the northern edge of the site and a till mound is seen to the south. The raised bog developed in a former lake. Part of the old cutover bog has been converted to improved pasture which is included in the site for hydrological reasons. A conifer plantation will eventually be removed.

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		palustris (transplanted to the site and now thought to be extinct). The site also provides habitat for important bird species such as Lagopus lagopus and breeding Falco columbarius. Clara Bog has been subject to detailed hydrological and ecological studies.	
000582	Raheenmore Bog SAC	Raheenmore Bog is a medium-sized midland raised bog site which contains good examples of the priority Annex I habitat active raised bog and the non-priority habitats degraded raised bog and depressions on peat substrates (Rhynchosporion). These habitats are generally of good quality. Most of the site is owned by the National Parks and Wildlife Service and there has been considerable research and restoration carried out on the site over the past 15 years. In addition to the presence of a well-developed flora the site provides habitat for important animal species such as Rana temporaria Lacerta vivipara Lagopus lagopus and is within a breeding territory of Falco columbarius.	This site is underlain by muddy limestone with low permeability. This is overlain by sands gravels and boulder clays. A layer of lacustrine clay lies over this on which the peat layer developed. The bog developed in a basin between low hills in which a lake would initially have been present. Part of the cutover bog has been converted to improved grassland which is included in the site for hydrological reasons.
000859	Clonaslee Eskers and Derry Bog SAC	The alkaline fen at this site is a good representative of the habitat and has a diverse flora. The site contains a relict population of Vertigo geyeri and is one of a small number of known sites for this mollusc in the country. The site also contains two legally protected and Red Data plant species Vicia orobus and Acinos arvensis plus a number of scarce species such as Erigeron acer Sesleria albicans and Ophrys insectifera.	This site comprises a series of glacial esker ridges situated c.5 km west of the town of Clonaslee and to the north of the Slieve Bloom Mountains. Calcareous grassland mostly unimproved is a principal habitat and is noted for high species diversity. Calcareous springs at the base of the esker ridges have resulted in the formation of alkaline fen. Native deciduous woodland also occurs on the ridges. A raised bog Derry Bog now mostly cutaway is included in site. Owing to the diversity of habitats present the site is noted for its unusual mixture of calcicole and calcifuge species.
000919	Ridge Road SW of Rapemills SAC	The importance of this site lies in the unimproved herb-rich esker grassland. As well as supporting vegetation communities in which several notable herb species are found the site also supports a large population of Orchis morio a Red Data Book species. Sites such as this are becoming increasingly rare in Ireland through grassland improvement or removal of the sites for gravel.	A relatively extensive unimproved grassland site situated on steep-sided twin esker ridge formed from glacial gravels. The main vegetation type on the site is unimproved dry grassland in which several notable herb species are found. Open scrub and hazel scrub woodland is found in many parts of the site. The western end of the site has some improved grassland.
000934	Kilduff Devilsbit Mountain SAC	The main importance of the site lies in the fairly extensive area of good quality species-rich Nardus grassland that occurs and in the large	The site is situated on the north-eastern slopes of Devilsbit Mountain a flat-topped ridge composed of silurian grits. The main vegetation type

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		population of the nationally rare and protected orchid Pseudorchis albida that it supports. The site is relatively diverse and includes a small area of good quality dry heath. Undamaged unimproved upland grassland sites such as this are becoming increasingly rare in Ireland.	found on the site is species-rich heathy grassland. Degraded Molinia-dominated wet heath dry heath and stands of Quercus sp./Fagus sylvatica woodland occur in the upper sections of the site. Light scrub is scattered throughout the lower sections of the site and here several streams and flushes are found. A wet broad-leaved Alder woodland in the wet area at the eastern side of the site.
001831	Split Hills and Long Hill Esker SAC	This is one of the finest wooded esker ridges remaining in the country and constitutes one of the few woodlands in the area. In places a very rich ground flora is found in the woods. This includes several scarce species including the protected Cardamine impatiens which has not been recorded as a native elsewhere in Ireland. The site is very diverse and includes examples of many habitats. Species-rich calcareous grassland is found in many areas of the site. The protected plant Galeopsis angustifolia has been recorded from the site.	A linear site approximately 7km long which comprises for the most part an esker ridge composed of glacial sand and gravel. The main habitat is semi-natural deciduous woodland but this diverse site also contains significant areas of bog scrub improved and wet grasslands. Sand and gravel are extracted from three areas of the site. Roads and a river cross the site in several places.
002137	Lower River Suir SAC	This site contains a range of Annex I habitats including floating river vegetation eutrophic tall herbs alluvial forest old oak woods yew woods and salt meadows. The site is very important for the presence of a number of scarce and specialised Annex II animal species with particularly important populations of the fish species Salmo salar and Alosa fallax fallax. Lutra lutra is widespread on the system as is Austropotamobius pallipes. The site supports two Annex I priority and five non-priority Annex I habitats. There are four Annex I species of birds present within the site. The rare lichen Lobaria pulmonaria an ancient woodland indicator occurs at Portlaw Oak Woods within the site.	The Suir River system flows through the counties of Tipperary Kilkenny and Waterford. The site consists of all of the freshwater stretches of the Suir immediately south of Thurles the tidal stretches as far as the confluence with the Barrow/Nore immediately east of Cheekpoint in Co. Waterford and many of the tributaries including the Clodiagh the Lingaun Anner Nier Tar Aherlow and Multeen. Much of the system flows through Carboniferous limestone though towards Waterford the geology changes to Old Red Sandstone and Ordovician bedrocks. The site supports a diverse range of habitats including marsh reedbeds wet and dry grasslands broad-leaved semi-natural woodlands salt marshes tidal rivers and estuarine channels. Substantial areas of improved grassland and arable lands are included for water quality reasons.
002299	River Boyne and River Blackwater SAC	The main channel of the Boyne contains a good example of alluvial woodland of the Salicetum albo-fragilis type which has developed on three alluvium islands. Alkaline fen vegetation is well represented at Lough Shesk where there is a very fine example of habitat succession from open water to raised bog. The Boyne and its tributaries is one of Ireland's premier game fisheries and offers a wide range of angling from fishing for spring salmon and grilse to sea trout fishing and extensive	This site comprises most of the freshwater element of the River Boyne from upriver of the Boyne Aqueduct at Drogheda the Blackwater River as far as Lough Ramor and the principal Boyne tributaries notably the Deel Stoneyford and Tremblestown Rivers. This system drains a considerable area of Cos. Meath and Westmeath and smaller areas of Cavan and Louth. The underlying geology is Carboniferous Limestone for the most part with areas of Upper Lower and Middle well represented. In the vicinity of Kells

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		brown trout fishing. The site is one of the most important in eastern Ireland for Salmo salar and has very extensive spawning grounds. The site also has an important population of Lampetra fluviatilis though the distribution or abundance of this species is not well known. Lutra lutra is widespread throughout the site. Some of the grassland areas along the Boyne and Blackwater are used by a nationally important winter flock of Cygnus cygnus. Several Red Data Book plants occur within the site with Pyrola rotundifolia Poa palustris and Juncus compressus. Also occurring are a number of Red Data Book animals notably Meles meles Martes martes and Rana temporaria. The River Boyne is a designated Salmonid Water under the EU Freshwater Fish Directive.	Silurian Quartzite is present while close to Trim are Carboniferous Shales and Sandstones. The rivers flow through a landscape dominated by intensive agriculture mostly of improved grassland but also cereals. Much of the river channels were subject to arterial drainage schemes in the past. Natural flood-plains now exist along only limited stretches of river though often there is a fringe of reed swamp freshwater marsh wet grassland or deciduous wet woodland. Along some parts notably between Drogheda and Slane are stands of tall mature mixed woodland. Substantial areas of improved grassland and arable land are included in site for water quality reasons. There are many medium to large sized towns adjacent to but not within the site.
002313	Ballymore Fen SAC	The site supports a good example of transition mire vegetation that occurs in association with alkaline fen and incipient raised bog. It has many of the expected plant species for the habitat including the locally rare Carex limosa and an excellent diversity of bryophytes. The site supports the Red Data Book species Pyrola rotundifolia and has the legally protected amphibian species Rana temporaria and Triturus vulgaris as well as a diverse invertebrate fauna with at least five Odonta species. Quality of habitats is good and the site is in a fairly natural state.	Ballymore Fen occupies a relatively wide and deep depression in drift deposits that are underlain by Carboniferous Limestone. The site is fed on both the east and west by springs and there are small streams flowing from the north-east and south of the site. The area may at one stage have been a lake of some size but at present is occupied by a transition mire complex with the characteristic lagg fen at the edges. In the wetter areas towards the centre and south of the site the vegetation is characterised by a scraw. A mosaic of fen and incipient bog vegetation occurs elsewhere with transition mire vegetation present as part of this. Scrub dominated by Salix spp. is invading the drier areas. The site includes fields of semi-improved grassland which surround the wetland - much of this is species-rich calcareous grassland that is lightly grazed by cattle.
002331	Mouds Bog SAC	Mouds Bog is the largest relatively intact raised bog in Co. Kildare and thus is the most easterly site remaining in the country. Although there is extensive industrial peat extraction in the west of the site there is still a fairly large area of wet bog surface present including some active raised bog with a small soak system. The degraded bog is typical of the habitat but displays some diversity by way of a number of dry flushes.	Mouds Bog is a large raised bog complex located 3 km north-west of Newbridge Co. Kildare. The bog occurs as two basins separated by a central mineral ridge. Approximately half the site comprises uncut high bog though this is predominantly degraded bog. Much of the western end of the site is affected by industrial extraction of peat. Old cutover surrounds the remainder of the high bog though some of this has been reclaimed for pasture grassland. Part of the cutover has been invaded by Betula pubescens scrub.

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		Rhynchosporion vegetation is well represented in the wetter areas and includes Drosera anglica a relatively scarce species in Co. Kildare. The site contains one of the few Irish populations of the introduced insectivorous plant species Sarracenia purpurea. Lagopus lagopus a Red listed species in Ireland has been recorded.	
002337	Crosswood Bog SAC	Although there is a relatively large amount of disturbance along the margins of the high bog the high bog supports a relatively large area of wet active raised bog. This is characterised by a high Sphagnum cover which includes an abundance of the rare species S. pulchrum and S. fuscum. The site also has a substantial area of degraded raised bog which exhibits a wide range of vegetation types indicative of degradation including a partially wooded flush. Crosswood bog is one of the better quality medium-sized raised bogs in Co. Westmeath and is one of a number of important medium-sized raised bogs to the east of Athlone.	Crosswood Bog is a medium-sized midland raised bog located 5 km east of the town of Athlone. The site consists of a core of uncut high bog surrounded by cutover surfaces. Approximately one-third of the high bog is active bog the remainder being degraded. Along the southern margins of the cutover there has been extensive afforestation with conifers. Scrub woodland dominated by Betula pubescens is frequent in the south-western part of the cutover.
002356	Ardgraigue Bog SAC	This relatively small site contains good examples of active raised bog degraded raised bog and Rhynchosporion vegetation. The site is important because of its high water table and the relatively undisturbed conditions which prevail on the high bog in spite of some intensive peat-cutting along the high bog margins. Sphagnum cover is unusually high and the presence of large amounts of the nationally rare moss Sphagnum pulchrum demonstrates that very wet conditions prevail. A small flush on the high bog supports some unusual plant species such as Melampyrum pratense and Empetrum nigrum. A number of associated raised bog sites occur in close proximity to this site.	Ardgraigue Bog is a relatively small midland/western raised bog site located north-east of Killimor village in the east of Co. Galway. The bog overlies Carboniferous limestone bedrock and has developed in a small topographical basin. Most of the surrounding land is dominated by fields of agricultural grassland. A small core of uncut high bog is surrounded by cutover which has been reclaimed in places to produce agricultural grassland. Scrub has colonised some parts of the cutover.
004044	Lough Ennell SPA	Lough Ennell is one of the most important midland lakes for wintering waterfowl with nationally important populations of Cygnus olor Aythya ferina Aythya fuligula and Fulica atra. The population of Aythya fuligula represents over 3% of the national total. It also attracts Pluvialis apricaria and Vanellus vanellus though these feed mainly outside of the	Lough Ennell is a large limestone lake. It is approximately 6.5 km long and is mostly c. 2 km wide. The River Brosna is the principal inflowing and outflow river. It is a relatively shallow lake with a maximum depth of c. 30 m. The water is hard with low colour and markedly alkaline pH. The lake is classified as a mesotrophic system though it had been eutrophic in

Site Code	Site Name	Quality of Site	Other Site Characteristics
		site. At times the lake is utilised as a roost (with limited feeding) by the internationally important Midland lakes population of Anser albifrons flavirostris. It supports two Red Data Book charophyte species. The site is an important trout fishery.	the past. The lake bottom is of limestone with a marl deposit. Lough Ennell supports a diverse aquatic flora with a particularly well-developed charophyte flora. Reedbeds and species-poor swamp vegetation occasionally fringe the lake particularly around the points of inflow and outflow and on the eastern shore. Phragmites australis is abundant in places. Much of the lakeshore is rather dry stony ground which was formerly part of the lake bed but is now exposed by drainage and colonised by calcareous grassland. Alkaline fen is also found on the lake shore. There are several islands within the lake.
004160	Slieve Bloom Mountains SPA	Supports 3.7% of the all-Ireland population of Circus cyaneus and among the top 5 most important sites in the country for this species. Also the most easterly population in the country. Habitat excellent for nesting and foraging purposes. Also has nesting Falco peregrine Falcon columbarius and Lagopus lagopus the later a Red Data Book Species.	The site lies on the Offaly-Laois border and runs along a NE-SW ridge for approximately 25km. Much of the site is over 200 m in altitude with a maximum of 527 m at Arderin. The mountains are of Old Red Sandstone flanked by Silurian rocks. Several important rivers rise within the site including the Barrow Delour and Silver rivers. Approximately 60% of the site is afforested including both first and second rotation plantations and clearfell areas. Roughly one-quarter of the site is unplanted blanket bog and heath with the remainder of the site largely rough grassland that is used for hill farming. Some stands of deciduous woodland and scrub also occur especially within the river valleys.
004165	Slievefelim to Silvermines Mountains SPA	Supports c. 3% of the all-Ireland population of Circus cyaneus and among the top 5 most important sites in the country for the species. Habitat excellent for both nesting and foraging purposes. Also has nesting Falco peregrinus Falco columbarius and Lapopus lagopus the latter a Red Data Book species. Falco columbarius probably nests but a survey is required.	This is an extensive upland site that occurs in Counties Tipperary and Limerick. Much of the site is over 200 metres in altitude rising to 694 m at Keeper Hill. The site is underlain mainly by Silurian-aged Sandstones. Several important rivers rise within the site including the Mulkear Bilboa and Clare rivers. Approximately half of the site is afforested including both first and second rotation plantations and clear fell areas. Roughly one-quarter of the site is unplanted blanket bog and heath with both wet and dry heath present. The remainder of the site is largely rough grassland that is used for hill farming. Some stands of deciduous woodland also occur especially in the river valley.

Site Code	Site Name	Quality of Site	Other Site Characteristics
004233	River Nore SPA	The River Nore support nationally important numbers of Alcedo atthis. Other species which occur within the site include Cygnus olor Anas platyrhynchos Phalacrocorax carbo Ardea cinerea Gallinula chloropus Gallinago gallinago and Riparia riparia.	The River Nore SPA is a long linear site that includes the following river sections: the River Nore from the bridge at Townparks (north-west of Borris in Ossory) to Coolnamuck (approximately 3 km south of Inistioge) in Co. Kilkenny; the Delour River from its junction with the River Nore to Derrynaseera bridge (west of Castletown) in Co Laois; the Erkina River from its junction with the River Nore at Durrow Mills to Boston Bridge in Co. Laois; a 1.5 km stretch of the River Goul upstream of its junction with the Erkina River; the Kings River from its junction with the River Nore to a bridge at Mill Island Co. Kilkenny. The site includes the river channel and marginal vegetation.
000566	All Saints Bog and Esker SAC	This site contains good examples of the Annex I priority habitats active raised bog bog woodland and orchid-rich dry grassland. In addition it contains examples of the non-priority habitats degraded raised bog and Rhynchosporion vegetation. The Betula woodland is of high quality and is the best developed bog woodland of its type in Ireland. The site supports a rich invertebrate fauna including several insect species which are rare in Ireland or found only on this site. Part of the Little Brosna flock of Greenland White-fronted Geese (Anser albifrons flavirostris) may occasionally use the site during disturbance on the Little Brosna Callows. Another species listed on Annex I of the Birds Directive Merlin (Falco columbarius) is also found on the site. The esker grassland on the site supports a large population of the rare orchid Orchis morio. Other rare plant species Erigeron acer and Galeopsis angustifolia the latter protected in Ireland are found in a quarry on the southern side of the site.	The site is located in an area dominated by low permeability shales which are overlain by ridges of high permeability gravels. One of these runs east/west under the bog to form two basins. The ridge is co-incident with the Betula bog woodland. The southern side of the site is bounded by an esker ridge which supports a small area of orchid-rich grassland and in which are found several gravel quarries one of which supports rare plant species.
000580	Mongan Bog SAC	Mongan Bog is an example of a small to medium sized raised bog site which contains examples of the Annex I habitats active raised bog degraded raised bog and depressions on peat substrates (Rhynchosporion). The centre of the site is dominated by a core of uncut high bog which contains an unusually large number of pools dominated	The bedrock underlying this site is low permeability fossiliferous limestone. This is overlain by permeable sands and gravels mainly derived from limestone. The peat layer is underlain by relatively impermeable lake clays. Esker ridges of sands and gravels lie to the north and south of

Site Code	Site Name	Quality of Site	Other Site Characteristics
		by open water. The uncut high bog core is surrounded by old cutover surface which is regenerating into a mosaic of heath and low scrub. The relatively rare sedge Rhynchospora fusca has been recorded from wet pools within the site. In the past the bog was used by wintering Anser albifrons flavirostris but the geese appear to have deserted the site in recent years. The site supports breeding Numenius arquata and Gallinago gallinago.	the site. Part of the old cutover bog has been converted to improved grassland and this is included in the site for hydrological reasons.
000685	Lough Ennell SAC	This lake is one of the most important midland limestone lakes but the quality of the water has been poor owing to severe eutrophication in the 1970's. There has been improvement however and in 1990 it was classified as mesotrophic. A good diversity of charophytes have been recorded including some of the rare species of calcareous water. Some good alkaline fen fringes the lake in parts. Lutra lutra and Lampetra planeri occur at the site as well as some important invertebrate species. The site is an important bird area and has wintering Anser albifrons flavirostris. Further improvement in water quality would increase the value of this site.	Lough Ennel is a large open steep-sided limestone lake situated on the River Brosna within the Shannon catchment. The water is hard with low colour and markedly alkaline Ph. Maximum depth is 30m though the lake is generally much shallower. Much of the lakeshore is stony - wetland vegetation including reedswamp and alkaline fen fringe the lake in places particularly at the points of inflow and outflow of the Brosna and at the south west and south east shores. Mixed woodland much of it with a wet wood character occurs in places. Some improved grassland used by feeding Anser albifrons flavirostris is included in site. The lake is surrounded by generally good quality pasture land.
002141	Mountmellick SAC	Site contains a relict population of Vertigo moulinsiana. Confirmed record for 1997. Typical wetland habitat. All recently surveyed sites with confirmed populations of this species are considered important.	Site comprises a disused section of the Grand Canal at Dangan's Bridge approximately 3 km east of Mountmellick in Co. Laois. The habitat is fen type vegetation with Typha latifolia Glyceria maxima and Iris pseudacorus. At present the site is not used for any particular activity.
002147	Lisduff Fen SAC	A small though relatively intact fen system. Petrifying springs with heavy tufa formations occur along the stream in the southern end of the site. An important site for Vertigo geyeri with a series of recent records including confirmed presence in 1995.	Lisduff Fen is located at Kilcoman crossroad approximately 4 km south-east of Birr. The fen system includes areas dominated by Phragmites australis some wet grassland areas of Betula/Salix scrub and communities tending towards raised bog. There are also some pools. Part of a small stream which enters the fen at the south end is included. Landuse in surrounding areas is mainly pasture for cattle.

Site Code	Site Name	Quality of Site	Other Site Characteristics
002162	River Barrow and River Nore SAC	The site supports many Annexed habitats including the priority habitats of alluvial woodland and petrifying springs. Quality of habitat is generally good. The site also supports a number of Annex II animal species - Salmo salar Margaritifera margaritifera M.m. durrovensis Alosa fallax fallax Austropotamobius pallipes Petromyzon marinus Lutra lutra Lampetra fluviatilis and L. planeri. Annex I Bird species include Anser albifrons flavirostris Falco peregrinus Cygnus cygnus Cygnus columbianus bewickii Limosa lapponica Pluvialis apricaria and Alcedo atthis. A range of rare plants and invertebrates are found in the woods along these rivers and rare plants are also associated with the saltmarsh.	This site consists of most of the freshwater stretches of the Barrow/Nore River catchments. The Barrow is tidal as far upriver as Graiguenamanagh while the Nore is tidal as far upriver as Inishtioge. The site also includes the extreme lower reaches of the River Suir and all of the estuarine component of Waterford Harbour extending to Creadan Head. The larger of the many tributaries include the Lerr Fushoge Mountain Aughavaud Owenass Boherbaun and Stradbally Rivers of the Barrow and the Delour Dinin Erkina Owveg Munster Arrigle and King's Rivers on the Nore. Both rivers rise in the Old Red Sandstone of the Slieve Bloom Mountains. They traverse limestone bedrock for a good proportion of their routes though the middle reaches of the Barrow and many of the eastern tributaries run through Leinster Granite. A wide range of habitats associated with the rivers are included within the site including substantial areas of woodland (deciduous mixed) dry heath wet grassland swamp and marsh vegetation salt marshes a small dune system biogenic reefs and intertidal sand and mud flats. Areas of improved grassland arable land and coniferous plantations are included in the site for water quality reasons.
002205	Wooddown Bog SAC	The Degraded Raised Bog habitat in Wooddown Bog SAC is of conservation significance as it has the potential for restoration to Active Raised Bog which is a priority habitat in the EU and one that is scarce and under threat in Ireland. Despite the relatively small area of Degraded raised bog present the restoration actions have resulted in active redevelopment of the habitat towards Active Raised Bog which add to the diversity and scientific value of the site. The site is being actively managed for conservation as part of the Coillte EU LIFE Project and most of the required restoration measures have already been carried out. However some significant threats remain and an After LIFE management plan is being developed for the future conservation management of the SAC. The SAC is located within the raised bog Wooddown Bog NHA (000694) the conservation management of which	Wooddown Bog SAC (002205) comprises 49.87 ha of raised bog (22.94 ha of high bog and over 26.93 ha cutover) which occupy the eastern end of Wooddown Bog NHA (Site Code 000694). Wooddown Bog is a Midland type raised bog developed in a basin. The SAC is bordered by open high bog on its northern and western margins by forestry on cutover bog on its eastern margin and by agricultural grassland on its southern side. All the SAC except for approximately 8.5 ha of high bog and cutover in the northwest was afforested in 1973-5 with conifer plantations. The remaining open high bog vegetation has a Midlands raised bog species composition but shows signs of significant drying out due to past drainage and turf cutting. When the conifers in the SAC were removed in 2011 all the intensive drainage system associated with it were blocked by 2013 as part of an EU funded LIFE project so as to raise the water table and restore Active Raised Bog (ARB) on the site. Prior to the felling there was

Site Code	Site Name	Quality of Site	Other Site Characteristics
		should support the maintenance and improvement Degraded Raised Bog in the SAC.	relatively few bog species present on the afforested section. With the clear-felling of conifers and blocking of drains there are indications that the high bog is re-wetting. As a consequence raised bog vegetation has returned to the formerly afforested areas of the high bog. However the majority of the restored areas have not yet developed vegetation characteristic of the wettest conditions and there is a considerable amount of conifer and birch regeneration occurring in these areas. Several potential areas of Degraded Raised Bog (DRB) were identified by hydrological modelling. The most westerly of these is adjacent to a drain on the SAC boundary which cannot currently be closed and so it is not expected to recover until the drain is blocked. Another three areas of Degraded Raised Bog together comprise about 1.5 ha and occur in the central-southern section of the site. These now have standing surface water in the hollows and pools for most of the year with considerable areas of regenerating bog mosses. There is a wooded flush on the cutover in the northern section of the SAC. With further drain blocking on the high bog and cutover this may have the potential to develop into the priority habitat Bog Woodland (91D0) as elements of this habitat already occur in the NHA. Wet birch woodland is also developing on the middle section of the site. This habitat type may also evolve into Bog Woodland in the future at this location.
002241	Lough Derg North-East Shore SAC	This site supports a wide range of habitats including Alkaline fens Juniper scrub formations limestone pavement Yew woodlands alluvial woodlands and Cladium fen. It also supports the only known population in the country for the Irish Red Data Book species Inula salicina. Other scarce plant species found here include Sorbus aria and Rhamnus catharticus. The endangered fish species Coregonus autumnalis has its European stronghold in Lough Derg. The open water areas of the lake itself are important for wintering wildfowl. Goat island holds a breeding colony of Sterna hirundo. A subflock of Anser albifrons flavirostris uses the callow lands around Slevoir Bay in Winter. A good population of Cygnus olor occurs.	This site incorporates part of the water body of Lough Derg and includes most of the northern lake shore and approximately one-third of the northeast shoreline. Lough Derg itself is the lowest order lake on the River Shannon and is one of the largest freshwater bodies in Ireland. Most of the lake overlies Carboniferous Limestone which outcrops along the shores but some old Red Sandstone occurs on the eastern side. The site is of high scenic value and is a well known angling and tourism area.

Site Code	Site Name	Quality of Site	Other Site Characteristics
002333	Knockacoller Bog SAC	Although Knockacoller Bog is a relatively small raised bog site it does occur close to the southern limit of raised bog development and thus is important from a biogeographical perspective. Sphagnum growth is good in the central active area and includes the relatively rare species S. imbricatum and S. fuscum. Some pools are present. The part of the high bog that is classified as degraded is rather dry and often has a uniform vegetation dominated by Calluna vulgaris or Narthecium ossifragum. Rhynchosporion vegetation is largely confined to the active central core of the bog but supports the relatively rare Rhynchospora fusca. Knockacoller Bog together with Coolrain Bog which lies 4 km to the west forms an important southerly outpost for raised bog distribution.	Knockacoller Bog is a small midland raised bog situated 5 km south-west of Mountrath village Co. Laois. The bog overlies sandy calcareous till which in turn overlies Carboniferous limestone bedrock. Uncut high bog accounts for approximately 40% of the site area with cutover surface dominating the remainder. The uncut bog surface contains a wet central active area which may have arisen due to slumping of the surface. Part of the cutover has been colonised by Betula pubescens scrub and woodland (10-12m high) which adds to habitat diversity. A small part of the cutover has been reclaimed for grassland.
004017	Mongan Bog SPA	Site is an important example of a relatively intact midland raised bog. Has been used as a feeding and roost site by part of the River Suck population of Anser flavirostris albifrons. Appears to be seldom used nowadays which probably reflects a trend in recent years away from usage of raised bog sites. Supports breeding Gallinago gallinago and probably Numenius arquata. An important site for invertebrates with several rare species recorded. Mongan is one of the most studied raised bog sites in the country.	Mongan Bog is a relatively intact raised bog situated close to Clonmacnoise and the Shannon callows. The surface is noticeably wet with a well developed hummock-hollow topography. The peat layer is underlain by relatively impermeable lake clays bog which overlie permeable sands and gravels mainly derived from limestone. The underlying geology is low permeability fossiliferous limestone. The peat basin is surrounded by esker ridges to the north and south.
004097	River Suck Callows SPA	The River Suck Callows is an important site for wintering waterfowl with an internationally important population of Anser albifrons flavirostris centred within the site. This is one of the largest flocks in the country outside of the Wexford Slobs. Despite poor survey data for recent years it is known that at least three species have populations of national importance: Cygnus cygnus Anas penelope and Vanellus vanellus. Cygnus columbarius bewickii formerly occurred in significant numbers but has abandoned the site in line with a marked contraction of range	The River Suck is the largest tributary of the River Shannon. The site follows the river from Castlecoote near Fuerty to its confluence with the River Shannon a distance of approximately 70 km of river course. The main habitat is grassland improved to varying extents that is seasonally flooded. The less improved areas are species-rich. The grassland is used mainly for pasture but some is used for silage or occasionally hay-making. The river channel is fringed in places by swamp and marsh vegetation.

Site Code	Site Name	Quality of Site	Other Site Characteristics
		at a national level. Crex crex formerly bred but not since the early 1990s. This site provides one of the few remaining examples in the country of a large river system of which parts still flood in a fairly natural way.	The site adjoins several raised bogs and cutover bogs and there are turloughs in the vicinity.
004103	All Saints Bog SPA	Site is an important raised bog site with good examples of active raised bog degraded raised bog Rhynchoporian vegetation as well as orchid-rich calcareous grassland. All Saints bog was formerly an important refuge for part of the internationally important population of Anser albifrons flavirostris based on the Little Brosna. The geese would utilise the bog when disturbed from the callows. In recent years however there has been less use of All Saint's following a general trend of less usage of raised bogs and also probably due to disturbance from peat milling activities on the bog adjacent to the site. Falco columbarius has been seen on the bog during the breeding season and probably nests. The site supports several rare invertebrate species and the esker ridge supports three Red Data plant species.	Site is a raised bog complex with a well-developed area of active bog which is surrounded by degraded raised bog and some cutaway bog. The bog supports an extensive stand of Betula pubescens woodland. The southern side of the site is bounded by an esker ridge which supports a small area of dry calcareous grassland. The geology of the area is dominated by low permeability shales which are overlain by ridges of high permeability gravels. One of these ridges runs east-west under the bog causing it to form two basins. The ridge is co-incident with the birch woodland.
004232	River Boyne and River Blackwater SPA	The River Boyne and River Blackwater SPA supports nationally important numbers of Alcedo atthis. Other species which occur within the site include Cygnus olor Anas crecca Anas platyrhynchos Phalacrocorax carbo Ardea cinerea Gallinula chloropus Gallinago gallinago and Riparia riparia.	The River Boyne and River Blackwater SPA is a long linear site that comprises stretches of the River Boyne and several of its tributaries: most of the site is in Co Meath but it extends also into Counties Cavan Louth and Westmeath. It includes the following river sections: The River Boyne from the M1 motorway bridge west of Drogheda to the junction with the Royal Canal west of Longwood Co Meath; the River Blackwater from its junction with the River Boyne in Navan to the junction with Lough Ramor in Co Cavan; the Tremblestown River (and Athboy River) from the junction with the River Boyne at Kilnagross Bridge to the bridge in Athboy Co Meath; the Stoneyford River from its junction with the River Boyne to Stonestone Bridge in Co. Westmeath; the River Deel from its junction with the River Boyne to Cummer Bridge Co. Westmeath. The site includes the river channel and marginal vegetation.

Site Code	Site Name	Quality of Site	Other Site Characteristics
002165	Lower River Shannon SAC	The site contains many Annexed habitats including the most extensive area of estuarine habitat in Ireland. A good range of Annexed species are also present including the only known resident population of Tursiops truncatus in Ireland all three Irish species of lamprey and a good population of Salmo salar. A number of birds listed on the EU Birds Directive either winter or breed in the site. The site is internationally important for waterfowl with more than 50000 individuals occurring in winter. Several species listed in the Irish Red Data Book are present perhaps most notably the only known Irish populations of Scirpus triqueter.	A very large long site approximately 14 km wide and 120 km long encompassing: the drained river valley which forms the River Shannon estuary; the broader River Fergus estuary plus a number of smaller estuaries e.g. Poulnasherry Bay; the freshwater lower reaches of the Shannon River between Killaloe and Limerick plus the freshwater stretches of much of the Feale and Mulkear catchments; a marine area at the mouth of the Shannon estuary with high rocky cliffs to the north and south; ericaceous heath on Kerry Head and Loop Head; and several lagoons. The underlying geology ranges from Carboniferous limestone (east of Foynes) to Namurian shales and flagstones (west of Foynes) to Old Red Sandstone (at Kerry Head). The salinity of the system varies daily with the ebb and flood of the tide and with annual rainfall fluctuations seasonally.
004077	River Shannon and River Fergus Estuaries SPA	This is the most important coastal wetland site in the country and regularly supports in excess of 50000 wintering waterfowl. It has internationally important populations of Calidris alpina Limosa limosa and Tringa totanus. A further 16 species have populations of national importance. The site is particularly significant for Calidris alpina (11% of national total) Pluvialis squatarola (7.5% of total) Vanellus vanellus (6.5% of total) Tringa totanus (6.1% of total) and Tadorna tadorna (6.0% of total). It has Cygnus cygnus Pluvialis apricaria and Limosa lapponica in significant numbers. The site was formerly frequented by a population of Anser albifrons flavirostris but these have now abandoned the area. The site provides both feeding and roosting areas for the wintering birds and habitat quality for most of the estuarine habitats is good.	The River Shannon and River Fergus Estuaries form the largest estuarine complex in Ireland. The site comprises all of the estuarine habitat west from Limerick City and south from Ennis extending west as far as Killadysert and Foynes on the north and south shores of the Shannon respectively (a distance of some 25 km from east to west). Also included are several areas in the outer Shannon estuary notably Clonderalaw Bay and Poulnasherry Bay. The site has vast expanses of intertidal flats. The main macro-invertebrate community is a Macoma-Scrobicularia-Nereis community which provides a rich food resource for the wintering birds. Eelgrass (Zostera spp.) is present in places. The intertidal flats are often fringed with salt marsh vegetation areas which provide important high tide roost sites for the birds. In the innermost parts of the estuaries the tidal channels or creeks are fringed with species such as Phragmites australis and Scirpus spp. Spartina anglica is frequent in parts.

Site Code	Site Name	Quality of Site	Other Site Characteristics
001957	Boyne Coast and Estuary SAC	While the site has a good diversity of coastal habitats including fixed dunes most have been modified in some way. The containment of the main tidal channel has altered the tidal pattern which affects the functioning of the various estuarine habitats. Both dune systems were formerly far more extensive but much of the stable areas have now been converted to golf courses.Site is important for wintering waterfowl supporting nine species in nationally important numbers including Pluvialis apricaria an Annex I EU Birds Directive species. Sterna albifrons breeds or attempts to breed in most years.	This moderately sized coastal site which is situated below the town of Drogheda comprises most of the estuary of the Boyne River a substantial river which drains a large catchment. On the seaward side the site extends north and south for several kilometres to include the remaining intact areas of dune systems at Baltray and Mornington as well as the adjacent beaches and intertidal sand flats. The main channel of the Boyne is contained by training walls for navigable purposes. As well as intertidal sand and mud flats the inner part of the site has salt marshes and Spartina swards.
004080	Boyne Estuary SPA	The Boyne Estuary is one of the most important sites for wintering waterfowl on the east coast. It has a total of 10 species with populations of national importance - of particular note is that it supports 7.0% of the national total of Calidris canutus and 4.0% of the total for Pluvialis apricaria. Other species which have populations of national importance include Tadorna tadorna Haematopus ostralegus Vanellus vanellus Limosa limosa Tringa totanus and Arenaria interpres. The site provides both feeding and roosting areas for the birds. Sterna albifrons bred in the past but successful breeding has not occurred since 1996.	This moderately-sized coastal site which is situated below the town of Drogheda comprises most of the estuary of the Boyne River a substantial river which drains a large catchment. Apart from one section which is over 1 km wide the width is mostly less than 500 m. The main river channel which is navigable and dredged is defined by training walls the latter being breached in places. Intertidal flats occur on the sides of the channelled river. The sediments vary from fine muds in the innermost areas to sandy muds or sands towards the mouth. The linear stretches of intertidal flats to the north and south of the river mouth are mainly sands. Intertidal areas are fringed by salt marshes in the inner sheltered areas. Spartina is frequent on the flats and salt marshes.

Appendix 1 - Table 2 Background data for European sites considered in the assessment; including the Qualifying features (Qualifying Interests or Special Conservation Interests) and the known threats and pressures as recorded by the National Parks and Wildlife Services

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
000216	River Shannon Callows SAC	Limestone pavements [8240], Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) [6510], Otter (Lutra lutra) [1355], Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410], Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0], Alkaline fens [7230]	A08, K03.04, B02.02, J02.11, C01.03.02, A04.03, A03.03, J02.05, F03.01, A10.01, J02.04.01, J02.01, D01.01, A04.01, G05.01, G01, J02.05.02, B06, A03, A04.02.05, A07	Fertilisation, Predation, Forestry clearance, Siltation rate changes, dumping, depositing of dredged deposits, Mechanical removal of peat, Abandonment of pastoral systems lack of grazing, Abandonment or lack of mowing , Modification of hydrographic functioning, general, Hunting, Removal of hedges and copses or scrub, Flooding, Landfill, land reclamation and drying out, general, Paths, tracks, cycling tracks, Intensive grazing, Trampling, overuse, Outdoor sports and leisure activities, recreational activities, Modifying structures of inland water courses, Grazing in forests or woodland, Mowing or cutting of grassland, Non intensive mixed animal grazing, Use of biocides, hormones and chemicals
000391	Ballynafagh Bog SAC	Degraded raised bogs still capable of natural regeneration [7120], Depressions on peat substrates of the Rhynchosporion [7150], Active raised bogs [7110]	E01.04, G05, C01.03, D05, B01, J01	Other patterns of habitation, Other human intrusions and disturbances , Peat extraction, Improved access to site, Forest planting on open ground, Fire and fire suppression
000396	Pollardstown Fen SAC	Geyer`s whorl snail (Vertigo geyeri) [1013], Alkaline fens [7230], Desmoulin`s whorl snail (Vertigo moulinsiana) [1016], Petrifying springs with tufa formation (Cratoneurion) [7220], Narrow-mouthed whorl snail (Vertigo angustior) [1014], Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210]	A04, J01, F03.01, B, F02.03, E01.03, D02.01, E03.01, C01.01	Grazing, Fire and fire suppression, Hunting, Sylviculture, forestry, Leisure fishing, Dispersed habitation, Electricity and phone lines, Disposal of household or recreational facility waste, Sand and gravel extraction

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
000412	Slieve Bloom Mountains SAC	Blanket bogs * if active bog [7130], Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0], Northern Atlantic wet heaths with Erica tetralix [4010]	I01, J01.01, G05.01, C01, G01.02, H05.01, J02.15, A04.03, B02.02, G01.03.02, K02.01, B02	Invasive non-native species, Burning down, Trampling, overuse, Mining and quarrying, Walking, horseriding and non-motorised vehicles, Garbage and solid waste, Other human induced changes in hydraulic conditions, Abandonment of pastoral systems lack of grazing, Forestry clearance, Off-road motorized driving, Species composition change (succession), Forest and Plantation management & use
000440	Lough Ree SAC	Bog woodland [91D0], Otter (Lutra lutra) [1355], Active raised bogs [7110], Limestone pavements [8240], Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0], Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation [3150], Alkaline fens [7230], Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210], Degraded raised bogs still capable of natural regeneration [7120]	G02.09, J02.04, D03.01.02, A03.03, B02, G01.01, H02.06, I01, A04, K03.05, H01.08, L08, F03.01, E01.03, J02.11.02, G01.02, H06.03, A08, F02.03	Wildlife watching, Flooding modifications, Piers or tourist harbours or recreational piers, Abandonment or lack of mowing , Forest and Plantation management & use, Nautical sports, Diffuse groundwater pollution due to agricultural and forestry activities, Invasive non-native species, Grazing, Antagonism arising from introduction of species, Diffuse pollution to surface waters due to household sewage and waste waters, Inundation (natural processes), Hunting, Dispersed habitation, Other siltation rate changes, Walking, horseriding and non-motorised vehicles, Thermal heating of water bodies, Fertilisation, Leisure fishing
000566	All Saints Bog and Esker SAC	Depressions on peat substrates of the Rhynchosporion [7150], Bog woodland [91D0], Active raised bogs [7110], Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210], Degraded raised bogs still capable of natural regeneration [7120]	A08, E03.03, C01.01, A05.02, C01.03, A04, J02.15, J01.01, E03.01, J02.10, E05	Fertilisation, Disposal of inert materials, Sand and gravel extraction , Stock feeding, Peat extraction, Grazing, Other human induced changes in hydraulic conditions, Burning down, Disposal of household or recreational facility waste, Management of aquatic and bank vegetation for drainage purposes, Storage of materials
000571	Charleville Wood SAC	Desmoulin`s whorl snail (Vertigo moulinsiana) [1016], Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	F03.02.04, F04, F03.02.03, G01, G02.09, B02, G01.02, F05.04	Predator control, Taking or Removal of terrestrial plants, general, Trapping, poisoning, poaching, Outdoor sports and leisure activities, recreational activities, Wildlife watching, Forest and Plantation management & use, Walking, horseriding and non-motorised vehicles, Poaching

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
000572	Clara Bog SAC	Depressions on peat substrates of the Rhynchosporion [7150], Bog woodland [91D0], Active raised bogs [7110], Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210], Degraded raised bogs still capable of natural regeneration [7120]	F04, X, J01.01, A08, A04.03, C01.03, E04.01, J02.15, E03.01, C01.01.01, D01.01, J02.10, A05.02	Taking or Removal of terrestrial plants, general, No threats or pressures, Burning down, Fertilisation, Abandonment of pastoral systems lack of grazing, Peat extraction, Agricultural structures, buildings in the landscape, Other human induced changes in hydraulic conditions, Disposal of household or recreational facility waste, Sand and gravel quarries, Paths, tracks, cycling tracks, Management of aquatic and bank vegetation for drainage purposes, Stock feeding
000575	Ferbane Bog SAC	Degraded raised bogs still capable of natural regeneration [7120], Active raised bogs [7110], Depressions on peat substrates of the Rhynchosporion [7150]	X, E03.01, A10, J01.01, K02.01, E03.03, B03, C01.03, C01.01, A02.01, J02.15, A08	No threats or pressures, Disposal of household or recreational facility waste, Restructuring agricultural land holding, Burning down, Species composition change (succession), Disposal of inert materials, Forest exploitation without replanting or natural regrowth, Peat extraction, Sand and gravel extraction , Agricultural intensification, Other human induced changes in hydraulic conditions, Fertilisation
000576	Fin Lough (Offaly) SAC	Geyer`s whorl snail (Vertigo geyeri) [1013], Alkaline fens [7230]	X, E03.01, K02, J02.10, K01.02, A04.03, E03.03, J01.01, K01.03, F03.01	No threats or pressures, Disposal of household or recreational facility waste, Biocenotic evolution, succession, Management of aquatic and bank vegetation for drainage purposes, Silting up, Abandonment of pastoral systems lack of grazing, Disposal of inert materials, Burning down, Drying out, Hunting
000580	Mongan Bog SAC	Depressions on peat substrates of the Rhynchosporion [7150], Degraded raised bogs still capable of natural regeneration [7120], Active raised bogs [7110]	F03.01, A08, A05.02, X, C01.03, J01.01, E03.01, E03.03, J02.15	Hunting, Fertilisation, Stock feeding, No threats or pressures, Peat extraction, Burning down, Disposal of household or recreational facility waste, Disposal of inert materials, Other human induced changes in hydraulic conditions
000581	Moyclare Bog SAC	Active raised bogs [7110], Depressions on peat substrates of the Rhynchosporion [7150], Degraded raised bogs still capable of natural regeneration [7120]	J01.01, E03.03, J02.15, A04.01.04, C01.03, E03.01, F03.01, A07, X	Burning down, Disposal of inert materials, Other human induced changes in hydraulic conditions, Intensive goat grazing, Peat extraction, Disposal of household or recreational facility waste, Hunting, Use of biocides, hormones and chemicals, No threats or pressures

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
000582	Raheenmore Bog SAC	Degraded raised bogs still capable of natural regeneration [7120], Depressions on peat substrates of the Rhynchosporion [7150], Active raised bogs [7110]	A02.01, X, J02.01.03	Agricultural intensification, No threats or pressures, Infilling of ditches, dykes, ponds, pools, marshes or pits
000585	Sharavogue Bog SAC	Degraded raised bogs still capable of natural regeneration [7120], Active raised bogs [7110], Depressions on peat substrates of the Rhynchosporion [7150]	I02, J02.15, A08, J01.01, B02.02	Problematic native species, Other human induced changes in hydraulic conditions, Fertilisation, Burning down, Forestry clearance
000641	Ballyduff/Clonfinane Bog SAC	Depressions on peat substrates of the Rhynchosporion [7150], Active raised bogs [7110], Degraded raised bogs still capable of natural regeneration [7120], Bog woodland [91D0]	A10, C01.03.02, A08, C01.03, A04, J01, A03, A01, D05	Restructuring agricultural land holding, Mechanical removal of peat, Fertilisation, Peat extraction, Grazing, Fire and fire suppression, Mowing or cutting of grassland, Cultivation, Improved access to site
000647	Kilcarren-Firville Bog SAC	Active raised bogs [7110], Depressions on peat substrates of the Rhynchosporion [7150], Degraded raised bogs still capable of natural regeneration [7120]	A03, B01, A04, A08, J01, C01.03, A10, D01.02	Mowing or cutting of grassland, Forest planting on open ground, Grazing, Fertilisation, Fire and fire suppression, Peat extraction, Restructuring agricultural land holding, Roads, motorways
000685	Lough Ennell SAC	Alkaline fens [7230]	B02.02, D01.01, H01.08, F03.01, A04.01.01, H06.02, H06.01.01, K03.01, H01.05, J02.01, J02.05.02, F02.03.02, A04.02.05, A04.03	Forestry clearance, Paths, tracks, cycling tracks, Diffuse pollution to surface waters due to household sewage and waste waters, Hunting, Intensive cattle grazing, Light pollution, Point source or irregular noise pollution, Competition (fauna), Diffuse pollution to surface waters due to agricultural and forestry activities, Landfill, land reclamation and drying out, general, Modifying structures of inland water courses, Pole fishing, Non intensive mixed animal grazing, Abandonment of pastoral systems lack of grazing
000859	Clonaslee Eskers and Derry Bog SAC	Geyer`s whorl snail (Vertigo geyeri) [1013], Alkaline fens [7230]	E01.03, H05.01, J01.01, C01.03.02, J02.15, A04.02.03, J02.05, K02.01	Dispersed habitation, Garbage and solid waste, Burning down, Mechanical removal of peat, Other human induced changes in hydraulic conditions, Non intensive horse grazing, Modification of hydrographic functioning, general, Species composition change (succession)

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
000919	Ridge Road, SW of Rapemills SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210]	A07, D01, A02.01, K02.01, A10.01, A04.03, A08, J01.01, A05.02, A04.01	Use of biocides, hormones and chemicals, Roads, paths and railroads, Agricultural intensification, Species composition change (succession), Removal of hedges and copses or scrub, Abandonment of pastoral systems lack of grazing, Fertilisation, Burning down, Stock feeding, Intensive grazing
000925	The Long Derries, Edenderry SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210]	D01, X, G01.03.02, K02.01, E05, K01.01, A04.03	Roads, paths and railroads, No threats or pressures, Off-road motorized driving, Species composition change (succession), Storage of materials, Erosion, Abandonment of pastoral systems lack of grazing
000934	Kilduff, Devilsbit Mountain SAC	Species-rich Nardus grasslands, on siliceous substrates in mountain areas - and submountain areas in Continental Europe [6230], European dry heaths [4030]	G02.09, F03.02.02, G01.02, H05.01, A10, G01.04.01	Wildlife watching, Taking from nest (e.g. falcons), Walking, horseriding and non-motorised vehicles, Garbage and solid waste, Restructuring agricultural land holding, Mountaineering & rock climbing
001387	Ballynafagh Lake SAC	Marsh Fritillary (Euphydryas aurinia) [1065], Alkaline fens [7230], Desmoulin`s whorl snail (Vertigo moulinsiana) [1016]	A04, F02.03	Grazing, Leisure fishing
001625	Castlesampson Esker SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210], Turloughs [3180]	A04, C01.03.01, A10.01, C01.01	Grazing, Hand cutting of peat, Removal of hedges and copses or scrub, Sand and gravel extraction
001683	Liskeenan Fen SAC	Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210]	I01, C01.03.01, A04, A08	Invasive non-native species, Hand cutting of peat, Grazing, Fertilisation
001776	Pilgrim's Road Esker SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210]	A02.01, D01, A07, A04.01, A05.02, E03.03, A10.01, A04.03, A08, K02.01	Agricultural intensification, Roads, paths and railroads, Use of biocides, hormones and chemicals, Intensive grazing, Stock feeding, Disposal of inert materials, Removal of hedges and copses or scrub. Abandonment of pastoral systems lack of grazing, Fertilisation, Species composition change (succession)

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
001831	Split Hills and Long Hill Esker SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210]	K04.01, D01.01, K02.01, A04.02.01, A04.02.05, A04.01.01	Competition (flora), Paths, tracks, cycling tracks, Species composition change (succession), Non intensive cattle grazing, Non intensive mixed animal grazing, Intensive cattle grazing
002137	Lower River Suir SAC	Sea lamprey (Petromyzon marinus) [1095], Brook lamprey (Lampetra planeri) [1096], White-clawed crayfish (Austropotamobius pallipes) [1092], Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0], Freshwater pearl mussel (Margaritifera margaritifera) [1029], Twaite shad (Alosa fallax) [1103], Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260], Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0], Taxus baccata woods of the British Isles [91J0], River lamprey (Lampetra fluviatilis) [1099], Atlantic salmon (Salmo salar) [1106], Mediterranean salt meadows (Juncetalia maritimi) [1410], Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430], Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330], Otter (Lutra lutra) [1355]	A01, J02.12.02, H01, J02.01, A08, J02.01.02, B, E03, E01, I01, X, D03.01	Cultivation, Dykes and flooding defense in inland water systems, Pollution to surface waters (limnic & terrestrial, marine & brackish), Landfill, land reclamation and drying out, general, Fertilisation, Reclamation of land from sea, estuary or marsh, Sylviculture, forestry, Discharges, Urbanised areas, human habitation, Invasive non-native species, No threats or pressures, Port areas
002141	Mountmellick SAC	Desmoulin`s whorl snail (Vertigo moulinsiana) [1016]	J02.05, H05.01	Modification of hydrographic functioning, general, Garbage and solid waste
002147	Lisduff Fen SAC	Petrifying springs with tufa formation (Cratoneurion) [7220], Alkaline fens [7230], Geyer`s whorl snail (Vertigo geyeri) [1013]	A04.03, E03.03, A08, A02.01, J02.10, C01, A07, X, E03.01, E05	Abandonment of pastoral systems lack of grazing, Disposal of inert materials, Fertilisation, Agricultural intensification, Management of aquatic and bank vegetation for drainage purposes, Mining and quarrying, Use of biocides, hormones and chemicals, No threats or pressures, Disposal of household or recreational facility waste, Storage of materials

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
002162	River Barrow and River Nore SAC	Freshwater pearl mussel (Margaritifera margaritifera) [1029], Twaite shad (Alosa fallax) [1103], Mudflats and sandflats not covered by seawater at low tide [1140], European dry heaths [4030], Otter (Lutra lutra) [1355], Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430], Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260], Petrifying springs with tufa formation (Cratoneurion) [7220], Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0], Atlantic salmon (Salmo salar) [1106], Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0], White-clawed crayfish (Austropotamobius pallipes) [1092], Estuaries [1130], Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330], Reefs [1170], Salicornia and other annuals colonising mud and sand [1310], Mediterranean salt meadows (Juncetalia maritimi) [1410], Sea lamprey (Petromyzon marinus) [1095], Desmoulin`s whorl snail (Vertigo moulinsiana) [1016], Nore Pearl Mussel (Margaritifera durrovensis) [1990]. Killarney fern (Trichomanes speciosum) [1421], Brook lamprey (Lampetra planeri) [1096], River lamprey (Lampetra fluviatilis) [1099]	D03.01, F02.01.02, K01.01, A04.01.01, J02.06, A02.01, E02, F01.01, J02.02.01, C01.01.01, J02.12.02, B05, J02, B07, J03.02.01, I01, J02.05.02, H01, F02, A10.01, B02.01.01, M01, C01.03, B02, F02.03	Port areas, Netting, Erosion, Intensive cattle grazing, Water abstractions from surface waters, Agricultural intensification, Industrial or commercial areas, Intensive fish farming, intensification , Dredging or removal of limnic sediments, Sand and gravel quarries, Dykes and flooding defense in inland water systems, Use of fertilizers (forestry), Human induced changes in hydraulic conditions, Forestry activities not referred to above, Reduction in migration or migration barriers, Invasive non-native species, Modifying structures of inland water courses, Pollution to surface waters (limnic & terrestrial, marine & brackish), Fishing and harvesting aquatic resources, Removal of hedges and copses or scrub, Forest replanting (native trees), Changes in abiotic conditions, Peat extraction, Forest and Plantation management & use, Leisure fishing
002205	Wooddown Bog SAC	Degraded raised bogs still capable of natural regeneration [7120]	J02.15, I01, J02.01, I02, C01.03.01, J01.01, B02.02	Other human induced changes in hydraulic conditions, Invasive non-native species, Landfill, land reclamation and drying out, general, Problematic native species, Hand cutting of peat, Burning down, Forestry clearance

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
002206	Scohaboy (Sopwell) Bog SAC	Degraded raised bogs still capable of natural regeneration [7120]	C01.03, J01, I02, J02.15, I01, J01.02, C01.03.02, B02.02, J02.01	Peat extraction, Fire and fire suppression, Problematic native species, Other human induced changes in hydraulic conditions, Invasive non-native species, Suppression of natural fires, Mechanical removal of peat, Forestry clearance, Landfill, land reclamation and drying out, general
002207	Arragh More (Derrybreen) Bog SAC	Degraded raised bogs still capable of natural regeneration [7120]	J02.01, J02.15, B02.02, I02, I01, J01.01, C01.03.02	Landfill, land reclamation and drying out, general, Other human induced changes in hydraulic conditions, Forestry clearance, Problematic native species, Invasive non-native species, Burning down, Mechanical removal of peat
002213	Glenloughaun Esker SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210]	A02.01, A04.01.03, B01.01, C01.01, A04, I02, A04.03, A08	Agricultural intensification, Intensive horse grazing, Forest planting on open ground (native trees), Sand and gravel extraction , Grazing, Problematic native species, Abandonment of pastoral systems lack of grazing, Fertilisation
002236	Island Fen SAC	Juniperus communis formations on heaths or calcareous grasslands [5130], Alkaline fens [7230]	F03.01, J01.01, X, C01, D01, A04.03, A04.01, K02.01	Hunting, Burning down, No threats or pressures, Mining and quarrying, Roads, paths and railroads, Abandonment of pastoral systems lack of grazing, Intensive grazing, Species composition change (succession)
002241	Lough Derg, North-East Shore SAC	Taxus baccata woods of the British Isles [91J0], Alkaline fens [7230], Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210], Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0], Limestone pavements [8240], Juniperus communis formations on heaths or calcareous grasslands [5130]	H01.08, I02, I01, H01, A08, J02.01.03, D01.01, C01, A10.01, K02.01, K02.03, A04.02.05, M01.01, A04.01, B02.01.01, J02.10, M01.02, J02, G02.09, D03.01.02, G01, M01.03	Diffuse pollution to surface waters due to household sewage and waste waters, Problematic native species, Invasive non-native species, Pollution to surface waters (limnic & terrestrial, marine & brackish), Fertilisation, Infilling of ditches, dykes, ponds, pools, marshes or pits, Paths, tracks, cycling tracks, Mining and quarrying, Removal of hedges and copses or scrub, Species composition change (succession), Eutrophication (natural), Non intensive mixed animal grazing, Temperature changes (e.g. rise of temperature & extremes), Intensive grazing, Forest replanting (native trees), Management of aquatic and bank vegetation for drainage purposes,

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
				Droughts and less precipitations, Human induced changes in hydraulic conditions, Wildlife watching, Piers or tourist harbours or recreational piers, Outdoor sports and leisure activities, recreational activities, Flooding and rising precipitations
002299	River Boyne and River Blackwater SAC	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0], River lamprey (Lampetra fluviatilis) [1099], Alkaline fens [7230], Otter (Lutra lutra) [1355], Atlantic salmon (Salmo salar) [1106]	E03.02, A08, A10.01, A01, E03.04, I01, G02.10, E05, H01, E01.04, D01.02, A07, J02.15, A05.02, G01, J02.10, C01.01, J02.05.02, D01.05, J02, A03, G05, J02.11, G05.06, B01.02, E02	Disposal of industrial waste, Fertilisation, Removal of hedges and copses or scrub, Cultivation, Other discharges, Invasive non-native species, Other sport or leisure complexes, Storage of materials, Pollution to surface waters (limnic & terrestrial, marine & brackish), Other patterns of habitation, Roads, motorways, Use of biocides, hormones and chemicals, Other human induced changes in hydraulic conditions, Stock feeding, Outdoor sports and leisure activities, recreational activities, Management of aquatic and bank vegetation for drainage purposes, Sand and gravel extraction , Modifying structures of inland water courses, Bridge, viaduct, Human induced changes in hydraulic conditions, Mowing or cutting of grassland. Other human intrusions and disturbances , Siltation rate changes, dumping, depositing of dredged deposits, Tree surgery, felling for public safety, removal of roadside trees, Artificial planting on open ground (non-native trees), Industrial or commercial areas
002313	Ballymore Fen SAC	Transition mires and quaking bogs [7140]	A04.03, I02, A03.02, H01.03, A08, A04.02.05	Abandonment of pastoral systems lack of grazing, Problematic native species, Non intensive mowing, Other point source pollution to surface water, Fertilisation, Non intensive mixed animal grazing
002331	Mouds Bog SAC	Depressions on peat substrates of the Rhynchosporion [7150], Degraded raised bogs still capable of natural regeneration [7120], Active raised bogs [7110]	A04, B, J01, C01.03.02, A01, I01, E02	Grazing, Sylviculture, forestry, Fire and fire suppression, Mechanical removal of peat, Cultivation, Invasive non-native species, Industrial or commercial areas

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
002332	Coolrain Bog SAC	Depressions on peat substrates of the Rhynchosporion [7150], Active raised bogs [7110], Degraded raised bogs still capable of natural regeneration [7120]	J02.15, C01.03.02, J02.05, J02.01, B, J01.01, I01, H05.01	Other human induced changes in hydraulic conditions, Mechanical removal of peat, Modification of hydrographic functioning, general, Landfill, land reclamation and drying out, general, Sylviculture, forestry, Burning down, Invasive non-native species, Garbage and solid waste
002333	Knockacoller Bog SAC	Active raised bogs [7110], Depressions on peat substrates of the Rhynchosporion [7150], Degraded raised bogs still capable of natural regeneration [7120]	C01, J01.01, J02.15, K02, A04.02.03	Mining and quarrying, Burning down, Other human induced changes in hydraulic conditions, Biocenotic evolution, succession, Non intensive horse grazing
002336	Carn Park Bog SAC	Active raised bogs [7110], Degraded raised bogs still capable of natural regeneration [7120]	I01, I03, J02.01, J02.05, B02.02, D01.01, C01.03.02	Invasive non-native species, Introduced genetic material, GMO, Landfill, land reclamation and drying out, general, Modification of hydrographic functioning, general, Forestry clearance, Paths, tracks, cycling tracks, Mechanical removal of peat.
002337	Crosswood Bog SAC	Degraded raised bogs still capable of natural regeneration [7120], Active raised bogs [7110]	B02.02, A05.02, J01, I03, J02.01, D01.01, E03.01, C01.03.02, J02.05, I01	Forestry clearance, Stock feeding, Fire and fire suppression, Introduced genetic material, GMO, Landfill, land reclamation and drying out, general, Paths, tracks, cycling tracks, Disposal of household or recreational facility waste, Mechanical removal of peat, Modification of hydrographic functioning, general, Invasive non-native species
002339	Ballynamona Bog and Corkip Lough SAC	Depressions on peat substrates of the Rhynchosporion [7150], Turloughs [3180], Active raised bogs [7110], Degraded raised bogs still capable of natural regeneration [7120], Bog woodland [91D0]	J02.01, E03.01, I01, J02.05, A10.01, A04	Landfill, land reclamation and drying out, general, Disposal of household or recreational facility waste, Invasive non-native species, Modification of hydrographic functioning, general, Removal of hedges and copses or scrub, Grazing
002342	Mount Hevey Bog SAC	Active raised bogs [7110], Depressions on peat substrates of the Rhynchosporion [7150], Degraded raised bogs still capable of natural regeneration [7120]	I01, I03, K04.02, C01.03.02, D01.01, J02.03, D01.04, J02.01, E03.01, B02.02, J02.05	Invasive non-native species, Introduced genetic material, GMO, Parasitism (flora), Mechanical removal of peat, Paths, tracks, cycling tracks, Canalisation & water deviation, Railway lines, TGV, Landfill, land reclamation and drying out, general, Disposal of household or recreational facility waste, Forestry clearance, Modification of hydrographic functioning, general

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
002353	Redwood Bog SAC	Degraded raised bogs still capable of natural regeneration [7120], Depressions on peat substrates of the Rhynchosporion [7150], Active raised bogs [7110]	X, D01.02, D01.01, A01, C01.03, J01	No threats or pressures, Roads, motorways, Paths, tracks, cycling tracks, Cultivation, Peat extraction, Fire and fire suppression
002356	Ardgraigue Bog SAC	Depressions on peat substrates of the Rhynchosporion [7150], Active raised bogs [7110], Degraded raised bogs still capable of natural regeneration [7120]	E03.01, C01.03.02, J01.01, X, J02.07, J02.15, B02.01.02, E03.03, A02.01, J02.06	Disposal of household or recreational facility waste, Mechanical removal of peat, Burning down, No threats or pressures, Water abstractions from groundwater, Other human induced changes in hydraulic conditions, Forest replanting (non native trees), Disposal of inert materials, Agricultural intensification, Water abstractions from surface waters
004017	Mongan Bog SPA	Greenland White-fronted Goose (Anser albifrons flavirostris) [A395]	D05, A04, C01.03, C01.01	Improved access to site, Grazing, Peat extraction, Sand and gravel extraction
004044	Lough Ennell SPA	Tufted Duck (Aythya fuligula) [A061], Coot (Fulica atra) [A125], Wetland and Waterbirds [A999], Pochard (Aythya ferina) [A059]	G01.02, G05.01, E01, F03.01, G01.01, B, A08, F02.03	Walking, horseriding and non-motorised vehicles, Trampling, overuse, Urbanised areas, human habitation, Hunting, Nautical sports, Sylviculture, forestry, Fertilisation, Leisure fishing
004058	Lough Derg (Shannon) SPA	Tufted Duck (Aythya fuligula) [A061], Common tern (Sterna hirundo) [A193], Wetland and Waterbirds [A999], Cormorant (Phalacrocorax carbo) [A017], Goldeneye (Bucephala clangula) [A067]	A08, G01.01, F03.01, F02.03	Fertilisation, Nautical sports, Hunting, Leisure fishing
004064	Lough Ree SPA	Common Scoter (Melanitta nigra) [A065], Tufted Duck (Aythya fuligula) [A061], Wigeon (Anas penelope) [A050], Teal (Anas crecca) [A052], Lapwing (Vanellus vanellus) [A142], Shoveler (Anas clypeata) [A056], Whooper Swan (Cygnus cygnus) [A038], Common tern (Sterna hirundo) [A193], Mallard (Anas platyrhynchos) [A053], Golden Plover (Pluvialis apricaria) [A140], Coot (Fulica atra) [A125], Goldeneye (Bucephala clangula) [A067], Little Grebe (Tachybaptus ruficollis) [A004], Wetland and Waterbirds [A999]	G01.01, A08, A04, F02.03, F03.01, G01.02, I01, B	Nautical sports, Fertilisation, Grazing, Leisure fishing, Hunting, Walking, horseriding and non-motorised vehicles, Invasive non-native species, Sylviculture, forestry

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
004086	River Little Brosna Callows SPA	Greenland White-fronted Goose (Anser albifrons flavirostris) [A395], Shoveler (Anas clypeata) [A056], Golden Plover (Pluvialis apricaria) [A140], Black-headed Gull (Chroicocephalus ridibundus) [A179], Pintail (Anas acuta) [A054], Wetland and Waterbirds [A999], Teal (Anas crecca) [A052], Whooper Swan (Cygnus cygnus) [A038], Black-tailed Godwit (Limosa limosa) [A156], Wigeon (Anas penelope) [A050], Lapwing (Vanellus vanellus) [A142]	A03, F02.03, E01.03, A04, D01.01, A08, F03.01	Mowing or cutting of grassland, Leisure fishing, Dispersed habitation, Grazing, Paths, tracks, cycling tracks, Fertilisation, Hunting
004096	Middle Shannon Callows SPA	Black-tailed Godwit (Limosa limosa) [A156], Wigeon (Anas penelope) [A050], Wetland and Waterbirds [A999], Black-headed Gull (Chroicocephalus ridibundus) [A179], Lapwing (Vanellus vanellus) [A142], Whooper Swan (Cygnus cygnus) [A038], Golden Plover (Pluvialis apricaria) [A140], Corncrake (Crex crex) [A122]	F03.01, F02.03, D01.05, E01, A04, D01.01, G01.02, A04.03, A08, G01.01, A03	Hunting, Leisure fishing, Bridge, viaduct, Urbanised areas, human habitation, Grazing, Paths, tracks, cycling tracks, Walking, horseriding and non-motorised vehicles, Abandonment of pastoral systems lack of grazing, Fertilisation, Nautical sports, Mowing or cutting of grassland
004097	River Suck Callows SPA	Greenland White-fronted Goose (Anser albifrons flavirostris) [A395], Golden Plover (Pluvialis apricaria) [A140], Lapwing (Vanellus vanellus) [A142], Wetland and Waterbirds [A999], Whooper Swan (Cygnus cygnus) [A038], Wigeon (Anas penelope) [A050]	F02.03, A04, G01.01, A03, B, A08, E01.03, F03.01	Leisure fishing, Grazing, Nautical sports, Mowing or cutting of grassland, Sylviculture, forestry, Fertilisation, Dispersed habitation, Hunting
004103	All Saints Bog SPA	Greenland White-fronted Goose (Anser albifrons flavirostris) [A395]	E01.03, A01, B01, C01.03.02, F03.01, A08, D01.02, J01, A03, C01.03, A04, C01.01	Dispersed habitation, Cultivation, Forest planting on open ground, Mechanical removal of peat, Hunting, Fertilisation, Roads, motorways, Fire and fire suppression, Mowing or cutting of grassland, Peat extraction, Grazing, Sand and gravel extraction
004137	Dovegrove Callows SPA	Greenland White-fronted Goose (Anser albifrons flavirostris) [A395]	A08	Fertilisation
004160	Slieve Bloom Mountains SPA	Hen harrier (Circus cyaneus) [A082]	A04, B, D01.01, D01.02, E01.03, C01.03	Grazing, Sylviculture, forestry, Paths, tracks, cycling tracks, Roads, motorways, Dispersed habitation, Peat extraction

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
004165	Slievefelim to Silvermines Mountains SPA	Hen harrier (Circus cyaneus) [A082]	E01.03, D01.01, D01.02, C01.03, A04, B	Dispersed habitation, Paths, tracks, cycling tracks, Roads, motorways, Peat extraction, Grazing, Sylviculture, forestry
004232	River Boyne and River Blackwater SPA	Kingfisher (Alcedo atthis) [A229]	E01, E01.03, D01.02, X, J02	Urbanised areas, human habitation, Dispersed habitation, Roads, motorways, No threats or pressures, Human induced changes in hydraulic conditions
004233	River Nore SPA	Kingfisher (Alcedo atthis) [A229]	J02.01, X, D03.01	Landfill, land reclamation and drying out, general, No threats or pressures, Port areas
002165	Lower River Shannon SAC	Coastal lagoons [1150], Large shallow inlets and bays [1160], Reefs [1170], Salicornia and other annuals colonising mud and sand [1310], Sea lamprey (Petromyzon marinus) [1095], Estuaries [1130], Perennial vegetation of stony banks [1220], Brook lamprey (Lampetra planeri) [1096], Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260], Mediterranean salt meadows (Juncetalia maritimi) [1410], River lamprey (Lampetra fluviatilis) [1099], Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0], Freshwater pearl mussel (Margaritifera margaritifera) [1029], Bottlenose dolphin (Tursiops truncatus) [1349], Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330], Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410], Mudflats and sandflats not covered by seawater at low tide [1140], Otter (Lutra lutra) [1355], Sandbanks which are slightly covered by sea water all the time [1110], Atlantic salmon (Salmo salar) [1106], Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	K02.03, C01.03.01, F01, A08, J02.10, G01.01, F02.03, F03.01, H04, B, E01, J02.12.01, E03, J02.01.02, D01.01, I01, C01.01.02, J02.01.01, A04	Eutrophication (natural), Hand cutting of peat, Marine and Freshwater Aquaculture, Fertilisation, Management of aquatic and bank vegetation for drainage purposes, Nautical sports, Leisure fishing, Hunting, Air pollution, air-borne pollutants, Sylviculture, forestry, Urbanised areas, human habitation, Sea defense or coast protection works, tidal barrages, Discharges, Reclamation of land from sea, estuary or marsh, Paths, tracks, cycling tracks, Invasive non-native species, Removal of beach materials, Polderisation, Grazing

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
004077	River Shannon and River Fergus Estuaries SPA	Black-headed Gull (Chroicocephalus ridibundus) [A179], Greenshank (Tringa nebularia) [A164], Lapwing (Vanellus vanellus) [A142], Scaup (Aythya marila) [A062], Pintail (Anas acuta) [A054], Black-tailed Godwit (Limosa limosa) [A156], Knot (Calidris canutus) [A143], Redshank (Tringa totanus) [A162], Curlew (Numenius arquata) [A160], Whooper Swan (Cygnus cygnus) [A038], Bar-tailed Godwit (Limosa lapponica) [A157], Shelduck (Tadorna tadorna) [A048], Shoveler (Anas clypeata) [A056], Dunlin (Calidris alpina) [A149], Golden Plover (Pluvialis apricaria) [A140], Light-bellied Brent Goose (Branta bernicla hrota) [A046], Grey Plover (Pluvialis squatarola) [A141], Wigeon (Anas penelope) [A050], Ringed Plover (Charadrius hiaticula) [A137], Cormorant (Phalacrocorax carbo) [A017], Teal (Anas crecca) [A052], Wetland and Waterbirds [A999]	G01.01, D03.02, F01, A08, E01, E02, E03	Nautical sports, Shipping lanes, Marine and Freshwater Aquaculture, Fertilisation, Urbanised areas, human habitation, Industrial or commercial areas, Discharges
001957	Boyne Coast and Estuary SAC	Mudflats and sandflats not covered by seawater at low tide [1140], Embryonic shifting dunes [2110], Annual vegetation of drift lines [1210], Salicornia and other annuals colonising mud and sand [1310], Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330], Estuaries [1130], Shifting dunes along the shoreline with Ammophila arenaria - white dunes [2120], Fixed coastal dunes with herbaceous vegetation - grey dunes [2130]	G05, E03.01, J03.03, H01, J02.12, J02.02, J02.12.01, J02.01.03, L07, E03.03, G03, E01, K02, G01.03.02, D01.01, G05.04, G01.02, E05, I01, D01.05, J02	Other human intrusions and disturbances , Disposal of household or recreational facility waste, Reduction, lack or prevention of erosion, Pollution to surface waters (limnic & terrestrial, marine & brackish), Dykes, embankments, artificial beaches, general, Removal of sediments (mud...), Sea defense or coast protection works, tidal barrages, Infilling of ditches, dykes, ponds, pools, marshes or pits, Storm, cyclone, Disposal of inert materials, Interpretative centres, Urbanised areas, human habitation, Biocenotic evolution, succession, Off-road motorized driving, Paths, tracks, cycling tracks, Vandalism, Walking, horseriding and non-motorised vehicles, Storage of materials, Invasive non-native species, Bridge, viaduct, Human induced changes in hydraulic conditions

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
004080	Boyne Estuary SPA	Shelduck (Tadorna tadorna) [A048], Little Tern (Sterna albifrons) [A195], Black-tailed Godwit (Limosa limosa) [A156], Lapwing (Vanellus vanellus) [A142], Oystercatcher (Haematopus ostralegus) [A130], Turnstone (Arenaria interpres) [A169], Grey Plover (Pluvialis squatarola) [A141], Redshank (Tringa totanus) [A162], Knot (Calidris canutus) [A143], Golden Plover (Pluvialis apricaria) [A140], Wetland and Waterbirds [A999], Sanderling (Calidris alba) [A144]	I01, G02.01, G01.02, E01, J02.05, F02.03, J02.01.02, J02.11, F01	Invasive non-native species, Golf course, Walking, horseriding and non-motorised vehicles, Urbanised areas, human habitation, Modification of hydrographic functioning, general, Leisure fishing, Reclamation of land from sea, estuary or marsh, Siltation rate changes, dumping, depositing of dredged deposits, Marine and Freshwater Aquaculture

Appendix 1 - Table 3 Known threats and pressures related to the qualifying interests from each Special Area of Conservation as per article 17 reporting from the National Parks and Wildlife Services

Qualifying Interests	EU Code	Current threats to Qualifying Interests	Sensitivity of Qualifying Interests
Geyer's Whorl Snail (Vertigo geyeri)	[1013]	Loss of riverside and canalside habitat; exploitation of esker sites and drainage of wetlands, and sheep grazing and overexploitation of dune sites.	Changes to ground vegetation condition, groundwater dependent and is highly sensitive to hydrological changes.
Narrow-mouthed Whorl Snail (Vertigo angustior)	[1014]	Loss of riverside and canalside habitat; exploitation of esker sites and drainage of wetlands, and sheep grazing and overexploitation of dune sites.	Changes to ground vegetation condition, groundwater dependent and is highly sensitive to hydrological changes.
Desmoulin's Whorl Snail (Vertigo moulinsiana)	[1016]	Loss of riverside and canalside habitat; exploitation of esker sites and drainage of wetlands, and sheep grazing and overexploitation of dune sites.	Changes to ground vegetation condition, groundwater dependent and is highly sensitive to hydrological changes.
Freshwater Pearl Mussel (Margaritifera margaritifera)	[1029]	In stream works, hydrological and morphological alterations, sediment and enrichment, pollution due urbanisation etc. Poor substrate quality due to increased growth of algal and macrophyte vegetation as a result of severe nutrient enrichment, as well as physical siltation.	Surface water dependent. Highly sensitive to hydrological change. Very highly sensitive to pollution.
Marsh Fritillary (Euphydryas aurinia)	[1065]	Declines in habitat quality lead to species decline.	Habitat management; land use change and drainage.
White-clawed Crayfish (Austropotamobius pallipes)	[1092]	Poor substrate quality due to increased growth of algal and macrophyte vegetation as a result of severe nutrient enrichment, as well as physical siltation.	Invasive species, disease, surface water dependent. Highly sensitive to hydrological change. Very highly sensitive to pollution.
Sea Lamprey(Petromyzon marinus)	[1095]	Barriers to upstream migration (e.g. weirs), which limit access to spawning beds and juvenile habitat are main threats to this species.	Marine water dependent. Low sensitivity to hydrological changes. Coastal development, trampling from recreational activity.
Brook Lamprey (Lampetra planeri)	[1096]	Channel maintenance, barriers, passage obstruction, gross pollution and specific pollutants.	Surface water dependent. Highly sensitive to hydrological change. Availability of suitable spawning ground is a considerable issue for the species.

Qualifying Interests	EU Code	Current threats to Qualifying Interests	Sensitivity of Qualifying Interests
River Lamprey (Lampetra fluviatilis)	[1099]	Channel maintenance, barriers, passage obstruction, gross pollution and specific pollutants.	Surface water dependent. Highly sensitive to hydrological change. Availability of suitable spawning ground is a considerable issue for the species.
Twaite Shad (Alosa fallax fallax)	[1103]	Habitat quality, particularly at spawning sites is the most notable threat to this species.	Changes in management. Changes in nutrient or base status. Moderately sensitive to hydrological change.
Salmon (Salmo salar)	[1106]	Marine survival rates are of concern for the populations.	Disease, parasites and barriers to movement.
	[1110]		
Estuaries	[1130]	Pollution, fishing /aquaculture and habitat quality.	Inappropriate development, changes in turbidity
Mudflats and sandflats not covered by seawater at low tide	[1140]	Aquaculture, fishing, bait digging, removal of fauna, reclamation of land, coastal protection works and invasive species, particularly cord-grass; hard coastal defence structures; sea-level rise.	Surface and marine water dependent. Moderately sensitive to hydrological change. Moderate sensitivity to pollution. Changes to salinity and tidal regime. Coastal development.
Coastal lagoons	[1150]	Eutrophication. Modification of hydrological glow and drainage.	Erosion and silting up. Accumulation of seaweed. Land use management resulting in hydrological interactions.
Large shallow inlets and bays	[1160]	Pressures on the habitat include nutrient enrichment, dredging and invasive alien species. Overall Status is assessed as Bad and deteriorating, a genuine decline since the 2013 assessment of Inadequate and improving, and is based on more detailed information.	Inappropriate development, changes in turbidity, surface water runoff, discharge etc. On site management activities.
Reefs	[1170]	Professional fishing; taking for fauna; taking for flora; water pollution; climate change; and change in species composition.	Sensitive to disturbance and pollution.
Annual vegetation of drift lines	[1210]	Grazing; sand and gravel extraction; recreational activities; coastal protection works.	Overgrazing and erosion. Changes in management.
Perennial vegetation of stony banks	[1220]	Disruption of the sediment supply, owing to the interruption of the coastal processes, caused by developments such as car parks and coastal defence structures including rock armour and sea walls. The removal of gravel.	Marine water dependent. Low sensitivity to hydrological changes. Coastal development, trampling from recreational activity and gravel removal.

Qualifying Interests	EU Code	Current threats to Qualifying Interests	Sensitivity of Qualifying Interests
Vegetated sea cliffs of the Atlantic and Baltic coasts	[1230]	A number of significant pressures were identified, including trampling by walkers, invasive non-native species, gravel extraction, and sea-level and wave exposure changes due to climate change. There have been no significant losses in sea cliff habitat since the Directive came into force.	Land use activities such as tourism and/or agricultural practices. Direct alteration to the habitat or effects such as burning or drainage.
Salicornia and other annuals colonising mud and sand	[1310]	Invasive Species; erosion and accretion.	Marine water dependent. Medium sensitivity to hydrological change. Changes in salinity and tidal regime. Infilling, reclamation, invasive species.
Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	[1330]	Overgrazing; erosion; invasive species, particularly common cordgrass (Spartina anglica); infilling and reclamation.	Marine and groundwater dependent. Medium sensitivity to hydrological change. Changes in salinity and tidal regime. Overgrazing, erosion and accretion.
Bottlenose Dolphin (Tursiops truncatus)	[1349]	Pressures acting on the species in Irish waters mainly involve commercial vessel-based activities such as impacts arising from geophysical seismic exploration or from local/regional prey removal from fisheries.	Large vessel movement effecting distributions. Prey availability, reduction in available habitat and water quality.
Otter (Lutra lutra)	[1355]	Decrease in water quality: Use of pesticides; fertilization; vegetation removal; professional fishing (including lobster pots and fyke nets); hunting; poisoning; sand and gravel extraction; mechanical removal of peat; urbanised areas; human habitation; continuous urbanization; drainage; management of aquatic and bank vegetation for drainage purposes; and canalization or modifying structures of inland water course.	Surface and marine water dependent. Moderately sensitive to hydrological change. Sensitivity to pollution.
Mediterranean salt meadows (Juncetalia maritimi)	[1410]	Over-grazing by cattle or sheep; infilling and reclamation.	Marine and groundwater dependent. Medium sensitivity to hydrological change. Changes in salinity and tidal regime. Coastal development and reclamation.
Killarney Fern (Trichomanes speciosum)	[1421]	Threatened by habitat loss, deliberate collection, encroachment of invasive or vigorous species, or indirectly by water pollution, removal of woodland or alteration of watercourses.	Land use management and direct impacts.

Qualifying Interests	EU Code	Current threats to Qualifying Interests	Sensitivity of Qualifying Interests
River Nore Freshwater Pearl Mussel (Margaritifera durrovensis)	[1990]	In stream works, hydrological and morphological alterations, sediment and enrichment, pollution due urbanisation etc. Poor substrate quality due to increased growth of algal and macrophyte vegetation as a result of severe nutrient enrichment, as well as physical siltation.	Surface water dependent. Highly sensitive to hydrological change. Very highly sensitive to pollution.
Embryonic shifting dunes	[2110]	Natural erosion processes exacerbated by recreation and sand extraction. Coastal protection interfering with natural processes.	Overgrazing, and erosion. Changes in management.
Shifting dunes along the shoreline with white dunes(Ammophila arenaria)	[2120]	Recreation and coastal defences, which may interfere with local sediment dynamics.	Overgrazing, and erosion. Changes in management.
Fixed coastal dunes with herbaceous vegetation (grey dunes)	[2130]	Recreation; overgrazing and inappropriate grazing: non-native plant species, particularly sea buckthorn (Hippophae rhamnoides).	Overgrazing, and erosion. Changes in management.
Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	[3150]	Hydrological changes, afforestation; waste water; invasive alien species; sport and leisure activities.	Surface and groundwater dependent. Highly sensitive to hydrological changes. Highly sensitive to pollution.
Turloughs	[3180]	Nutrient enrichment; afforestation; waste water; invasive alien species; sport and leisure activities.	Surface and groundwater dependent. Highly sensitive to hydrological changes. Highly sensitive to pollution.
Water courses of plain to montane levels with vegetation(Ranunculion fluitantis and Callitricho-Batrachion)	[3260]	Hydrological and morphological changes, water quality, enrichment, and surface water discharges from industrial site and/or agriculture.	Surface water dependent Highly sensitive to hydrological change and direct physical interactions.
Northern Atlantic wet heaths with Erica tetralix	[4010]	Reclamation, afforestation and burning; overstocking; invasion by non-heath species; exposure of peat to severe erosion.	Surface and groundwater dependent. Highly sensitive to hydrological changes. Inappropriate management.
European dry heaths	[4030]	Afforestation, overburning, over-grazing, under-grazing and bracken invasion.	Moderately sensitive to hydrological change. Changes in management. Changes in nutrient status.
Juniperus communis formations on heaths or calcareous grasslands	[5130]	Overgrazing, erosion, scrub clearance, inappropriate land use management, and succession processes.	Changes in management such as grazing regime. Changes in nutrient or base status. Changes to vegetation composition. Introduction of alien species.

Qualifying Interests	EU Code	Current threats to Qualifying Interests	Sensitivity of Qualifying Interests
Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia)* important orchid sites	[6210]	Land reclamation, afforestation; drainage; and infrastructural development.	Changes in management such as grazing regime. Changes in nutrient or base status. Changes to vegetation composition. Introduction of alien species.
Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)	[6230]	Bracken encroachment, succession, inappropriate grazing, afforestation; drainage; and infrastructural development.	Changes in management such as grazing regime. Changes in nutrient or base status. Changes to vegetation composition. Introduction of alien species.
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	[6410]	Agricultural intensification; drainage; abandonment of pastoral systems.	Changes in management such as grazing regime. Changes in nutrient or base status. Changes to vegetation composition. Introduction of alien species.
Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	[6430]	Agricultural intensification; drainage; abandonment of pastoral systems.	Changes in management such as grazing regime. Changes in nutrient or base status. Changes to vegetation composition. Introduction of alien species.
Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	[6510]	Agricultural intensification; drainage; abandonment of pastoral systems.	Changes in management such as grazing regime. Changes in nutrient or base status. Changes to vegetation composition. Introduction of alien species.
Active raised bogs	[7110]	Drainage; burning; peat extraction; overgrazing; afforestation; erosion; and climate change.	Surface water interactions. Groundwater isolated system with sensitivities related to the bog basin. Drainage and land use management are the key things.
Degraded raised bogs still capable of natural regeneration	[7120]	Drainage; burning; peat extraction; overgrazing; afforestation; erosion; and climate change.	Surface water interactions. Groundwater isolated system with sensitivities related to the bog basin. Drainage and land use management are the key things.
Blanket bogs (* if active bog)	[7130]	Land reclamation, peat extraction; afforestation; erosion and landslides triggered by human activity; drainage; burning and infrastructural development.	Surface water interactions. Drainage and land use management are the key things.
Transition mires and quaking bogs	[7140]	Drainage; burning; peat extraction; overgrazing; afforestation; erosion; and climate change.	Surface water interactions. Groundwater isolated system with sensitivities related to the bog basin. Drainage and land use management are the key things.

Qualifying Interests	EU Code	Current threats to Qualifying Interests	Sensitivity of Qualifying Interests
Depressions on peat substrates of the Rhynchosporion	[7150]	Drainage; burning; peat extraction; overgrazing; afforestation; erosion; and climate change.	Surface and ground water interactions. Drainage and land use management are the key things.
Calcareous fens with species of mariscus sedge and bog cotton (Cladium mariscus and Caricion davallianae)	[7210]	Hydrological changes, pollution to surface waters, urbanisation, roads development, groundwater interactions, grazing and cultivation practices and the inappropriate use of pesticides.	Surface and groundwater dependent. Highly sensitive to hydrological changes. Inappropriate management.
Petrifying springs with tufa formation (Cratoneurion)	[7220]	Ground water interactions, on site management activities.	Surface and groundwater dependent. Highly sensitive to hydrological changes. Highly sensitive to pollution.
Alkaline fens	[7230]	Land reclamation, peat extraction; afforestation; erosion and landslides triggered by human activity; drainage; burning and infrastructural development.	Surface and groundwater dependent. Highly sensitive to hydrological changes. Inappropriate management.
Limestone pavements	[8240]	Overgrazing; extractive industries; recreational activities and improved access.	Erosion, overgrazing and recreation.
Old sessile oak woods with Ilex and Blechnum in the British Isles	[91A0]	The introduction of alien species; sub-optimal grazing patterns; general forestry management; increases in urbanisation and human habitation adjacent to oak woodlands; and the construction of communication networks through the woodland.	Changes in management. Changes in nutrient or base status. Introduction of alien species.
Bog woodland	[91D0]	The introduction of alien species; sub-optimal grazing patterns; general forestry management; increases in urbanisation and human habitation adjacent to oak woodlands; and the construction of communication networks through the woodland.	Changes in management. Changes in nutrient or base status. Introduction of alien species.
Alluvial forests with Alder and Ash (Alnus glutinosa, Fraxinus excelsior, Alno-Padion, Alnion incanae, Salicion albae)	[91EO]	Inappropriate grazing levels; invasive species; and clearance for agriculture or felling for timber.	Surface and groundwater dependent. Highly sensitive to hydrological changes. Changes in management.
Taxus baccata woods of the British Isles	[91J0]	Invasive Species; erosion and accretion.	Changes in management. Changes in nutrient or base status. Introduction of alien species.

Appendix 1 - Table 4 Known threats and pressures related to the qualifying interests from each Special Area of Conservation as per article 17 reporting from the National Parks and Wildlife Services

Species Code	Common Name	Scientific Name	Threats and Pressures Codes	Known Threats and Pressures
A004	Little Grebe	Tachybaptus ruficollis ruficollis	Xxp/Xxt	No threats and pressures identified by the NPWS
A017	Cormorant	Phalacrocorax carbo carbo	D01	Wind, wave and tidal power, including infrastructure
A038	Whooper Swan	Cygnus cygnus	A02, A11, C03, D02, G01, H07	Modification of cultivation practices, Agriculture activities not referred to above, Renewable abiotic energy use, Utility and service lines, Outdoor sports and leisure activities, recreational activities, Other forms of pollution
A046	Light-Bellied Brent Goose	Branta bernicla hrota	A02, A11, C03, D02, F01, G01, G05, H03, H07, I01, J03	Modification of cultivation practices, Agriculture activities not referred to above, Renewable abiotic energy use, Utility and service lines, Marine and Freshwater Aquaculture, Outdoor sports and leisure activities, recreational activities, Other Human intrusions and disturbances , Marine water pollution, Other forms of pollution, Invasive non-native species, Other Ecosystem Modifications
A048	Common Shelduck	Tadorna tadorna	F01, F02, G01, H03, M01	Marine and Freshwater Aquaculture, Fishing and harvesting aquatic resources, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Changes in abiotic conditions
A050	Eurasian Wigeon	Anas penelope	C03, F01, F03, G01, H01, H03, H07, I01, J02, J03	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Hunting and collection of wild animals (terrestrial), Outdoor sports and leisure activities, recreational activities, Pollution to surface waters (limnic & terrestrial, marine & brackish), Marine water pollution, Other forms of pollution, Invasive non-native species, Human induced changes in hydraulic conditions, Other Ecosystem Modifications
A052	Teal	Anas crecca	Xxp/Xxt	No threats and pressures identified by the NPWS
A053	Mallard	Anas platyrhynchos	Xxp/Xxt	No threats and pressures identified by the NPWS

Species Code	Common Name	Scientific Name	Threats and Pressures Codes	Known Threats and Pressures
A054	Northern Pintail	Anas acuta	C03, F01, F03, G01, H01, H03, H07, J02	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Hunting and collection of wild animals (terrestrial), Outdoor sports and leisure activities, recreational activities, Pollution to surface waters (limnic & terrestrial, marine & brackish), Marine water pollution, Other forms of pollution, Human induced changes in hydraulic conditions
A056	Northern Shoveler	Anas clypeata	C03, F03, G01, H01, H03, H07	Renewable abiotic energy use, Hunting and collection of wild animals (terrestrial), Outdoor sports and leisure activities, recreational activities, Pollution to surface waters (limnic & terrestrial, marine & brackish), Marine water pollution, Other forms of pollution
A059	Common Pochard	Aythya ferina	C03, F03, G01, H01, H07, M02	Renewable abiotic energy use, Hunting and collection of wild animals (terrestrial), Outdoor sports and leisure activities, recreational activities, Pollution to surface waters (limnic & terrestrial, marine & brackish), Other forms of pollution, Changes in biotic conditions
A061	Tufted Duck	Aythya fuligula	C03, F03, G01, H01, H07, M02	Renewable abiotic energy use, Hunting and collection of wild animals (terrestrial), Outdoor sports and leisure activities, recreational activities, Pollution to surface waters (limnic & terrestrial, marine & brackish), Other forms of pollution, Changes in biotic conditions
A062	Greater Scaup	Aythya marila	C03, F01, F02, F03, G01, H01, H03	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Fishing and harvesting aquatic resources, Hunting and collection of wild animals (terrestrial), Outdoor sports and leisure activities, recreational activities, Pollution to surface waters (limnic & terrestrial, marine & brackish), Marine water pollution

Species Code	Common Name	Scientific Name	Threats and Pressures Codes	Known Threats and Pressures
A065	Common Scoter	Melanitta nigra nigra	A04, C03, F02, G01, H01, H03, I01, K03, M02	Grazing, Renewable abiotic energy use, Fishing and harvesting aquatic ressources, Outdoor sports and leisure activities, recreational activities, Pollution to surface waters (limnic & terrestrial, marine & brackish), Marine water pollution, Invasive non-native species, Interspecific faunal relations, Changes in biotic conditions
A067	Common Goldeneye	Bucephala clangula	C03, F01, F03, G01, H01, H03, H07, M02	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Hunting and collection of wild animals (terrestrial), Outdoor sports and leisure activities, recreational activities, Pollution to surface waters (limnic & terrestrial, marine & brackish), Marine water pollution, Other forms of pollution, Changes in biotic conditions
A082	Hen Harrier	Circus cyaneus	A02, B01, B02, C01, C03, F03, G01, I01, J01, J03	Modification of cultivation practices, Forest planting on open ground, Forest and Plantation management & use, Mining and quarrying, Renewable abiotic energy use, Hunting and collection of wild animals (terrestrial), Outdoor sports and leisure activities, recreational activities, Invasive non-native species, Fire and Fire suppression, Other Ecosystem Modifications
A122	Corn Crake	Crex crex	A03.01, A04.01, K03.04, M01.03	Intensive Mowing or intensification, Intensive grazing, Predation, Flooding and rising precipitations
A125	Eurasian Coot	Fulica atra atra	C03, G01, H01	Renewable abiotic energy use, Outdoor sports and leisure activities, recreational activities, Pollution to surface waters (limnic & terrestrial, marine & brackish)
A130	Eurasian Oystercatcher	Haematopus ostralegus	C03, F01, F02, G01, H03, J02	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Fishing and harvesting aquatic ressources, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Human induced changes in hydraulic conditions

Species Code	Common Name	Scientific Name	Threats and Pressures Codes	Known Threats and Pressures
A137	Common Ringed Plover	Charadrius hiaticula	C03, F01, F02, G01, H03, J02, J03, M01	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Fishing and harvesting aquatic ressources, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Human induced changes in hydraulic conditions, Other Ecosystem Modifications, Changes in abiotic conditions
A140	European Golden Plover	Pluvialis apricaria	A02, A04, B01, C01, C03, F01, G01, H03, J01, K03, M02	Modification of cultivation practices, Grazing, Forest planting on open ground, Mining and quarrying, Renewable abiotic energy use, Marine and Freshwater Aquaculture, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Fire and Fire suppression, Interspecific faunal relations, Changes in biotic conditions
A141	Grey Plover	Pluvialis squatarola	C03, F01, F02, G01, H03, J02, J03, M01	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Fishing and harvesting aquatic ressources, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Human induced changes in hydraulic conditions, Other Ecosystem Modifications, Changes in abiotic conditions
A142	Northern Lapwing	Vanellus vanellus	A02, C03, F01, G01, H03	Modification of cultivation practices, Renewable abiotic energy use, Marine and Freshwater Aquaculture, Outdoor sports and leisure activities, recreational activities, Marine water pollution
A143	Red Knot	Calidris canutus	C03, F01, F02, G01, H03, J02, J03, M01	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Fishing and harvesting aquatic ressources, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Human induced changes in hydraulic conditions, Other Ecosystem Modifications, Changes in abiotic conditions
A144	Sanderling	Calidris alba	C03, F01, G01, H03, M01	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Changes in abiotic conditions

Species Code	Common Name	Scientific Name	Threats and Pressures Codes	Known Threats and Pressures
A149	Dunlin	Calidris alpina	C03, F01, F02, G01, H03, J02, J03, M01	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Fishing and harvesting aquatic ressources, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Human induced changes in hydraulic conditions, Other Ecosystem Modifications, Changes in abiotic conditions
A156	Black-Tailed Godwit	Limosa limosa islandica	A02, C03, F01, F02, G01, H03, J02, J03	Modification of cultivation practices, Renewable abiotic energy use, Marine and Freshwater Aquaculture, Fishing and harvesting aquatic ressources, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Human induced changes in hydraulic conditions, Other Ecosystem Modifications
A157	Bar-Tailed Godwit	Limosa lapponica	C03, F01, F02, G01, H03, J02, J03, M01	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Fishing and harvesting aquatic ressources, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Human induced changes in hydraulic conditions, Other Ecosystem Modifications, Changes in abiotic conditions
A160	Eurasian Curlew	Numenius arquata arquata	C03, F01, F02, G01, H03, J02, J03	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Fishing and harvesting aquatic ressources, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Human induced changes in hydraulic conditions, Other Ecosystem Modifications
A162	Common Redhank	Tringa totanus	C03, F01, F02, G01, H03, J02, J03, M01	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Fishing and harvesting aquatic ressources, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Human induced changes in hydraulic conditions, Other Ecosystem Modifications, Changes in abiotic conditions
A164	Common Greenshank	Tringa nebularia	C03, F01, G01, H03, J02, M01	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Human induced changes in hydraulic conditions, Changes in abiotic conditions

Species Code	Common Name	Scientific Name	Threats and Pressures Codes	Known Threats and Pressures
A169	Ruddy Turnstone	Arenaria interpres	C03, F01, G01, H03, J03, M01	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Other Ecosystem Modifications, Changes in abiotic conditions
A179	Black-Headed Gull	Larus ridibundus	A04, C03, F02, H03, J03, M01	Grazing, Renewable abiotic energy use, Fishing and harvesting aquatic ressources, Marine water pollution, Other Ecosystem Modifications, Changes in abiotic conditions
A193	Common Tern	Sterna hirundo	C03, D01, D03, G01, I01	Renewable abiotic energy use, Roads, paths and railroads, Shipping lanes, ports, marine constructions, Outdoor sports and leisure activities, recreational activities, Invasive non-native species
A195	Little Tern	Sterna albifrons albifrons	C03, D01, I01, I02, M01	Renewable abiotic energy use, Roads, paths and railroads, Invasive non-native species, Problematic native species, Changes in abiotic conditions
A229	Common Kingfisher	Alcedo atthis	A11, D01, G01, H01, I01, J02	Agriculture activities not referred to above, Roads, paths and railroads, Outdoor sports and leisure activities, recreational activities, Pollution to surface waters (limnic & terrestrial, marine & brackish), Invasive non-native species, Human induced changes in hydraulic conditions
A395	Greater White-Fronted Goose	Anser albifrons flavirostris	A02, A04, A06, A11, B01, C03, D02, D05, F01, F03, G01, H03, H07, K03, M01, M02	Modification of cultivation practices, Grazing, Annual and perennial non-timber crops, Agriculture activities not referred to above, Forest planting on open ground, Renewable abiotic energy use, Utility and service lines, Improved access to site, Marine and Freshwater Aquaculture, Hunting and collection of wild animals (terrestrial), Outdoor sports and leisure activities, recreational activities, Marine water pollution, Other forms of pollution, Interspecific faunal relations, Changes in abiotic conditions, Changes in biotic conditions

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