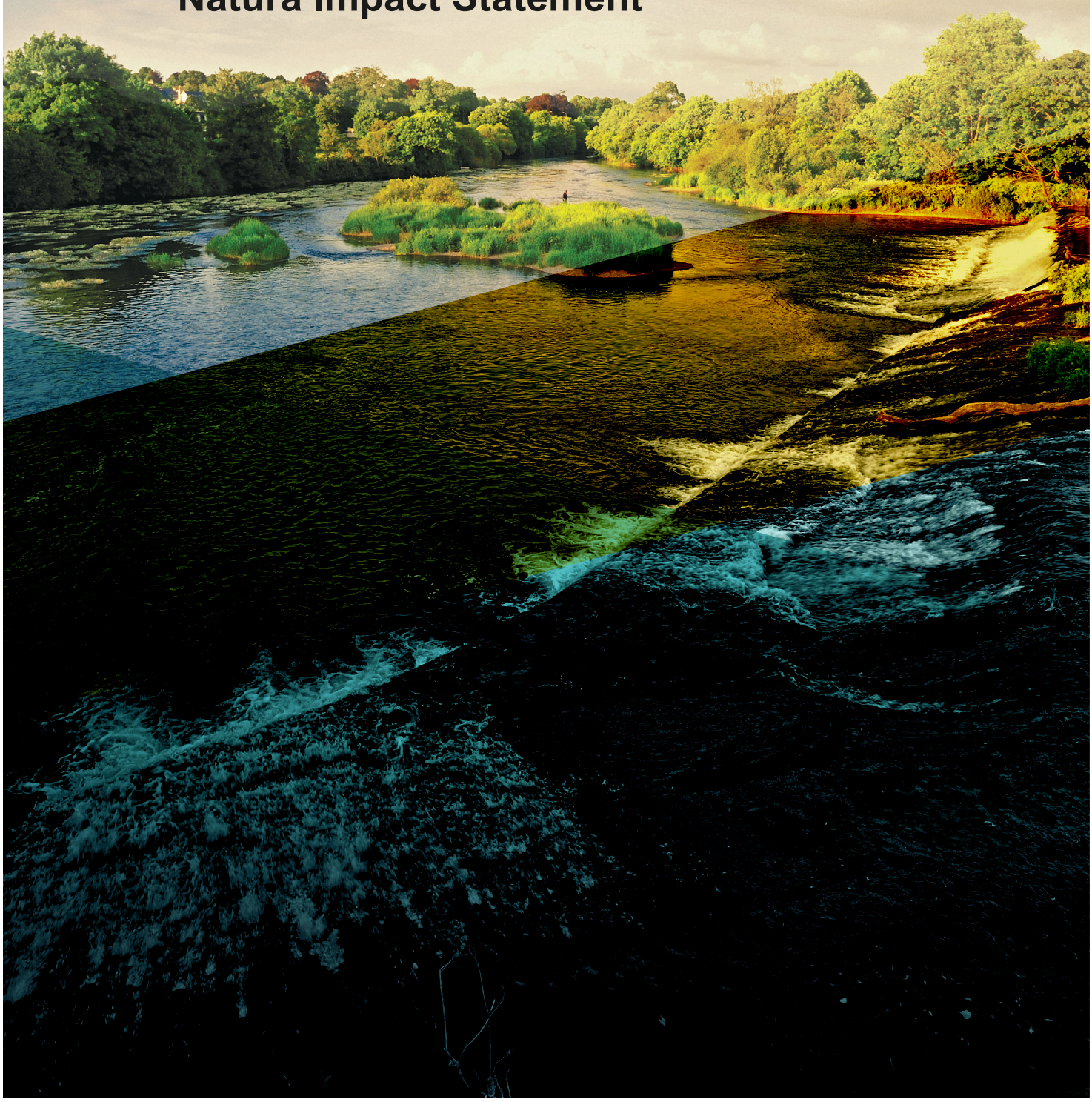
Rialtas na hÉireann
Government of Ireland

River Basin Management Plan for Ireland

2018 - 2021

Natura Impact Statement



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1 INTRODUCTION

The Department of Housing, Planning, and Local Government (DHPLG)[1] has prepared a River Basin Management Plan (RBMP), hereafter referred to as the RBMP. This is a requirement under Article 13 of *Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy*, better known as the Water Framework Directive (WFD). The first cycle RBMP covered the period from 2009 to 2015. Due to some delays in developing the second cycle, the plan which is subject to this Natura Impact Statement (NIS), will cover the period from 2018 – 2021. A third plan will subsequently be required to cover the period 2022 – 2027. The second cycle RBMP sets out the framework for ensuring the water environment of the Republic of Ireland is protected and improved, in line with the objectives of the WFD.

The preparation of this Natura Impact Statement (NIS) complies with the requirements of Article 6 of the Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (hereafter referred to as the Habitats Directive). This is transposed in Ireland principally through the Planning and Development Act 2000 (as amended) and the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended). The NIS has been prepared by RPS on behalf of the DHPLG (the Competent Authority) and facilitates the appropriate assessment (AA) by the Department. The DHPLG's AA decision will mark the conclusion of the AA process.

The RBMP is a national plan to ensure the required water quality improvements are achieved through a catchment based approach to water management, a co-ordinated approach from stakeholders across the water sector, and public engagement and participation in the development and implementation of plans. Owing to this, this NIS is focussed at a national strategic level.

An NIS was prepared in relation to the draft RBMP in 2017 to inform the development of the RBMP. This draft RBMP was subject to statutory public consultation alongside the SEA Environmental Report and NIS. Following consultation, the DHPLG amended the RBMP to reflect stakeholder feedback. The proposed modifications and changes to the RBMP were subsequently screened to determine their potential for likely significant effects and to ascertain if they would adversely affect the integrity of any European site(s).

1.1 LAYOUT OF THE NIS

This NIS presents the assessments and mitigation relating to both the draft and final versions of the RBMP.

- Chapters 1-5 deal with description of the RBMP, approach and methodology for the NIS and supporting information in relation to the Natura 2000 network. These chapters are largely unaltered from the version prepared in relation to the draft NIS and which was the subject of public consultation. Significant changes to text have been made they are highlighted in blue text.

[1] Formerly the Department of Housing, Planning, Community and Local Government. The Department name changed during the course of the plan development. . therefore for the purposes of this NIS, references to the draft plan relate to the former DHPCLG while those relevant to the final plan are to DHPLG.

- Chapter 6 presents the main assessment chapter in relation to the draft NIS.
- Chapter 7 addresses amendments to measures made to the RBMP following public consultation. All changes were assessed in the context of likely significant effects and the potential to adversely affect the integrity of any European site(s).
- Chapter 8 presents the mitigation measures required in relation to implementation of the final RBMP.
- Chapter 9 includes the overall conclusion of the NIS.

1.2 LEGISLATIVE CONTEXT FOR APPROPRIATE ASSESSMENT

The Habitats Directive provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as the Natura 2000 network (hereafter referred to as European Sites). These are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/ECC) as codified by Directive 2009/147/EC (hereafter referred to as the Birds Directive).

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect European Sites (Annex 1.1). Article 6(3) establishes the requirement for AA:

> *Any plan or project not directly connected with or necessary to the management of the [European] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In 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.*

Article 6(4) states:

> *If, in spite of a negative assessment of the implications for the [European] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.*

In the context of the RBMP, the governing legislation is principally Regulation 27 of the Birds and Natural Habitats Regulations 2011 which sets out the duties of public authorities relating to nature conservation; Part 5, Regulation 42 which addresses screening for AA and AA of implications for European sites, and Regulation 61 retention of records including the conclusions of any screening for AA and reasons therefore, and the conclusions of any AA and the reasons therefore. If screening determines likelihood for significant effects on a European Site, then full AA must be carried out for the plan, including the compilation of a Natura Impact Statement (NIS) to inform the decision making.

1.3 PURPOSE OF THE AA PROCESS

The overall purpose of the AA process is to ensure that the RBMP does not result in any adverse effects on the integrity of any European Sites in view of its conservation objectives. This NIS has been prepared in support of the AA process having regard for the legislative requirements of EU and national law as outlined previously.

The responsibility for carrying out the AA lies with the DHPLG. The NIS will inform the AA determination made by the DHPLG at the time of adoption of the RBMP, and the AA decision will be published alongside the adopted RBMP.

1.4 OVERLAP WITH THE STRATEGIC ENVIRONMENTAL ASSESSMENT OF THE RBMP

A Strategic Environmental Assessment (SEA) of the RBMP was carried out concurrently with the preparation of this NIS. The purpose of the SEA is to evaluate at an early stage, the range of environmental consequences that may occur as a result of implementing the RBMP and to give interested parties an opportunity to comment upon the perceived or actual environmental impacts of the proposal. There is a degree of overlap between the requirements of the SEA and AA and in accordance with best practice, an integrated process of data sharing has been carried out, such as sharing of baseline data and mapping of European Sites, sharing of potential ecological effects of the RBMP on European Sites and clarification on more technical aspects of the RBMP. These processes together have informed and shaped the development of the RBMP.

It is also noted that there are issues relevant to the Habitats Directive that are not strictly related to AA, including Article 10 and 12 of the Directive. In these cases, the issues have been brought forward to the biodiversity, flora and fauna section of the SEA and have been addressed in that context as part of the wider environmental assessments informing the RBMP.

1.5 CONSULTATION

From the outset, consultation is a mandatory requirement in the SEA process and responses often have specific guidance recognising the AA process. In line with the SEA Directive, specific environmental authorities (statutory consultees[2]) were consulted in September 2016, and they were:

- Department of Agriculture, Food and the Marine (DAFM);
- Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs (DAHRRGA);
- Department of Communications, Climate Action and the Environment (DCCAE);
- Department of Housing, Planning, Community and Local Government (DHPCLG); and
- Environmental Protection Agency (EPA).

[2] It is noted that the names of some Departments has changed during the drafting of the RBMP.

In recognition of the potential for transboundary effects with Northern Ireland, through potential changes relating to water quality, the Northern Ireland Department of Agriculture, Environment and Rural Affairs (DAERA) with responsibility for SEA in Northern Ireland, was also consulted. In addition to the statutory consultees, a number of other stakeholders directly relevant to the preparation of the RBMP were also consulted during scoping. This included the Local Authority Waters and Communities Office (LAWCO); Irish Water; specific units within the EPA related to catchment management and drinking water; and Inland Fisheries Ireland.

Scoping for RBMP SEA was carried out with the wider group, based on an initial draft scoping report which was provided to the consultees in September 2016. A scoping workshop was subsequently held on 16th September 2016 at the Custom House, Dublin. The following groups were represented on the day: the plan team from the DHPCLG, the EPA catchments unit and the SEA unit; LAWCO; Irish Water; SEA unit from DHPCLG; and Inland Fisheries (under DCCAE). Comments made at the workshop have been taken into account in this NIS. Subsequently written submissions were also received from statutory consultees, including some that could not attend the workshop. Copies of these submissions are included for reference in **Appendix A**.

In addition to this statutory consultation, earlier consultation was undertaken by the DHPLG on the Significant Water Management Issues or SWMI document. The DHPLG worked with the EPA to produce a public consultation document on Significant Water Management Issues (SWMI) in Ireland which was published in June 2015[3]. It outlined the issues Ireland is facing with respect to water quality and management. The document addressed the current condition of our waters, the significant pressures on the water environment, river basin management planning and potential challenges and the environmental issues that need to be addressed to achieve good status. A range of communication tools were employed for the public consultation in order to raise levels of awareness of the 2nd cycle of the RBMP and to facilitate participation in the consultation process. Key components of the consultation process included;

- Advertising;
- Public Relations;
- A dedicated project webpage hosted on the DHPCLG website.

Forty-six submissions were received during the public consultation from a range of stakeholders including Non-governmental Organisations (NGOs), local authorities and members of the public. The breakdown of groups which provided submissions is included in **Table 1-1.** A number of the issues raised were directed to the Water Policy Advisory Committee (WPAC), with the remainder taken into account by the Programme of Measures Steering Group (PoM SG). The key issues raised during the SWMI consultation are summarised in **Table 1-2**.

Table 1-1 Responses to SWMI Public Consultation

Response Received from:	No. of Responses
Environmental Grouping	18
Local Authority	9
State Body/Agency	5
Government Department/Office	3

[3] Public Consultation Document, *Significant Water Management Issues in Ireland*, DECLG (2015)

Response Received from:	No. of Responses
National Representative Organisation	3
Business	3
Academia	2
Individuals	2
Cross-Border	1
Total	**46**

Table 1-2 Issues Raised in SWMI Public Consultation

Societal Factors / Environmental Pressures	Summary of Issues Raised in SWMI Consultation
Affordability and Prioritisation	▪ Criticism regarding inclusion of affordability/prioritisation before all significant issues had been identified ▪ Views on what issues should be prioritised in the 2nd cycle RBMP including urban wastewater treatment, private wells, public health, protection of high status water bodies and the potential impact of agricultural expansion.
Public Engagement	▪ Suggested that there is not a strategic, co-ordinated approach to public participation / engagement and this translates into failure to engage effectively with the general public ▪ Importance of engagement with local communities on the ground emphasised ▪ Potentially key role for NGOs ▪ Suggestion that water awareness should be included in school curricula and that engagement on water issues should also address flooding and climate change matters ▪ Possible establishment of a national water stakeholder forum
Organisational Coordination	▪ Better coordination / data-sharing between agencies ▪ Clearer explanation of NGOs' / communities' role; involvement in decision-making at catchment level ▪ Farming sector should be on Water Policy Advisory Committee (WPAC) ▪ Irish Water should be on WPAC ▪ Dept. Education should be on WPAC ▪ Water enforcement teams in Local Authorities
Coordination of Plan Implementation	▪ Improve data transparency & availability ▪ Need to align the RBMP with a range of sectoral policies was highlighted. Such policies included the Peatland Strategy, Sustainable Aquaculture 2014-2020, Seafood Operation 2014-2020, Food Wise 2025 and Construction 2020.
Landuse Planning and Water	▪ Past planning failures have had a negative impact on flooding ▪ More stringent planning controls needed for high status sites ▪ Challenge posed to water quality posed by forestry expansion ▪ Restricted setback zones needed for purposes of planning ▪ RBMP should drive land-use plans, not vice-versa
Floods and Water	▪ Restoration of wetlands, promotion of sustainable river bank vegetation ▪ Need to address planning concerns around flood plains ▪ Need to align Flood Relief Management Plans and other land-use plans with the RBMPs was emphasised
Biodiversity Management and Water	▪ An economic value should be assigned to ecosystems services to highlight their value to society ▪ Role of Inland Fisheries Ireland (IFI) in protecting species should be referenced

Societal Factors / Environmental Pressures	Summary of Issues Raised in SWMI Consultation
	▪ Strict management of invasive alien species, incentives; roles & responsibilities should be clarified
Pollution from Nutrients	▪ Concerns regarding the impact of agricultural intensification under Food Harvest 2020 and Food Wise 2025 ▪ Suggested that current strategy to mitigate the potential negative effects of agricultural expansion is based on an assumption of 100% compliance with environmental legislation and Good Agricultural and Environmental Conditions (GAEC) standards ▪ Suggestion that there was insufficient recognition of the positive water quality measures already delivered by the agricultural sector ▪ Suggestion that farm inspections to be driven by water quality outcomes ▪ Impact of septic tanks, concerns re. National Inspection Plan ▪ Suggestion that next Nitrates Action Plan could restrict cattle access to water courses ▪ Need for sustained investment by Irish Water in its wastewater treatment plants ▪ Standardised national risk assessment model for waste water treatment plans (WWTPs) ▪ Pre-guideline commercial forestry sites should not be replanted
Water and Health	▪ Health / wellbeing gains of good water quality were noted ▪ Specific issues raised included Trihalomethanes, water quality at private wells (with a specific focus on VTEC), specific herbicides / pesticides ▪ The need to protect drinking water sources was highlighted ▪ Suggested that Septic Tank Scheme should be extended ▪ Concerns re. fluoridation of water
Fine Sediment	▪ Specific focus needed on buffer zones, fencing , management of forestry land ▪ Threat posed by land improvement works to water quality ▪ Roles and responsibilities in terms of managing silt runoff contributors needs to be examined.
Physical Changes	▪ OPW should have a systematic river-clearing / maintenance plan ▪ Loss of wetlands: serious concern ▪ Greater inter-agency coordination on hydromorphology assessments ▪ Concerns regarding management of landfills and quarries.
Abstractions and Flows	▪ Concern over possible abstraction from the River Shannon ▪ Suggested that a graduated system for the regulation of abstractions should be established ▪ Suggested that there is a need to reduce abstraction pressure more generally by reducing demand for water consumption
Hazardous Chemicals	▪ More focus needed on pharmaceuticals, antimicrobial resistance, nanomaterials and microplastics as well as endocrine disruptors and cypermethrin ▪ National Sludge Policy needs to be updated.
Climate Change	▪ Proactive adaptation strategies needed but could negatively impact on water quality ▪ Increase use of catchment ponds as mitigation strategy ▪ SWMI should recognise multiple objectives of agriculture; flawed without broader context ▪ Impact of extreme weather on performance of WWTP
Invasive Alien Species (IAS)	▪ Importance of public awareness-raising ▪ Improved management of IAS on public lands, e.g. controlling roadside verges is an opportunity for early intervention
Loss of High Status Waters	▪ Suggestion that the protection of high status sites should be a particular

Societal Factors / Environmental Pressures	Summary of Issues Raised in SWMI Consultation
	focus of the 2nd cycle RBMP ▪ Reasons for decline in high status water bodies need to be established and addressed ▪ Need national and catchment level coordinated action by all local and public authorities ▪ Policies and objectives within community development programmes need a focus for protection and restoration of these sensitive catchments ▪ Importance of locally focused stakeholder engagement ▪ More stringent planning near high status water bodies
Other	▪ Landfill waste disposal & water management ▪ Fracking ▪ Mining ▪ Environmental implications of Shannon abstraction need to be addressed in RBMP ▪ WWTP capacity should be increased to future-proof for extreme rainfall

1.5.1 Consultation on Draft RBMP

On 28th February 2017, the Minister for Housing, Planning, Community and Local Government published the draft RBMP 2017-2021 and invited submissions, observations and comments on the proposed Plan during a six-month public consultation process. A number of media were provided to give people the opportunity to get involved and have their say on how the Plan should be developed. Submissions were received by email, post, and also via a short online survey.

A total of 938 submissions were received directly by the Department from private individuals and groups. These groups included environmental organisations, community organisations, local authorities, political representatives and companies. The Water Forum (An Fóram Uisce) brought together the views of many stakeholders with an interest of water and, following intensive discussion and deliberation, submitted a comprehensive document as part of this process. An analysis of these submissions identified 22 sub-themes as being of importance to the public. Many of these sub-themes are inherently linked, and further grouping them together allows four high-level themes to emerge; Policy Responses to Improve Water Management, Pressures on Waterbodies and Water Quality, Physical Condition of Surface Waters and Value of Water Bodies. **Table 1-3** summarises the sub-themes identified during the public consultation process

Table 1-3 Summary of sub-themes identified from the RBMP Public Consultation Process. Sub-themes are ordered with those more frequently raised listed first in each column.

State Responses to Improve Water Management	Pressures on Waterbodies and Water Quality	Physical Condition of Surface Waters	Value of Water Bodies
Policy Issues, Regulation and Enforcement	Agricultural Practices	Biodiversity Management	Water & Health
Organisational Coordination	Nutrient Enrichment	Flooding	Education
Public Engagement	Forestry	Abstraction & Flow	Recreation

State Responses to Improve Water Management	Pressures on Waterbodies and Water Quality	Physical Condition of Surface Waters	Value of Water Bodies
Coordination of Plan Implementation	Hazardous Chemicals	Physical Elements	High Status Waters
Resourcing & Prioritisation	Invasive Species	Hydromorphology	
Level of Ambition	Climate	Land Use Planning	

Additional consultation was coordinated by the Local Authority and Water Communities Office (LAWCO). Through face-to-face engagement at 124 public information meetings, and via online submissions and phone conversations, LAWCO officers gathered over 1,000 submissions from people interested in both national and local issues. They provided an important communication channel, for both the provision of information to the public, and for gathering public opinion on local issues and the draft RBMP. Although more local in nature, the sub-themes align with the themes set out in the direct consultation. **Table 1-4** summarises the sub-themes identified during LAWCO public consultation process.

Table 1-4 Summary of sub-themes identified from the LAWCO Public Consultation Process. Sub-themes are ordered with those more frequently raised listed first in each column.

State Responses to Improve Water Management	Pressures on Waterbodies and Water Quality	Physical Condition of Surface Waters	Value of Water Bodies
Prioritisation of (Local) Urban Waste Water Treatment Plants	Agriculture and Aquaculture	Agriculture and Aquaculture	Concerns over Access/walks etc.
Drinking Water Treatment	Dumping	Dumping	Impacts on Bathing Water Quality
Fragmentation of State Actors and their Roles (clarity of responsibilities, contactability, response)	Forestry	Forestry	Recreation
	Industry	Industry	
	Domestic Waste Water Treatment Systems		

2 THE RBMP

2.1 INTRODUCTION

River Basin Management Planning is an integrated tool for the protection, improvement and sustainable management of the water environment. The plan is typically prepared and reviewed once every six years with the first cycle in Ireland covering the period of 2009 – 2015. For the first cycle, the island of Ireland was represented by eight River Basin Districts (RBD) as shown in **Figure 2-1**. This included international districts where waterbodies flowed between Ireland and Northern Ireland. At that time it was considered most appropriate to prepare eight separate RBMPs to bring best effect to the planning needed during the initial cycle.

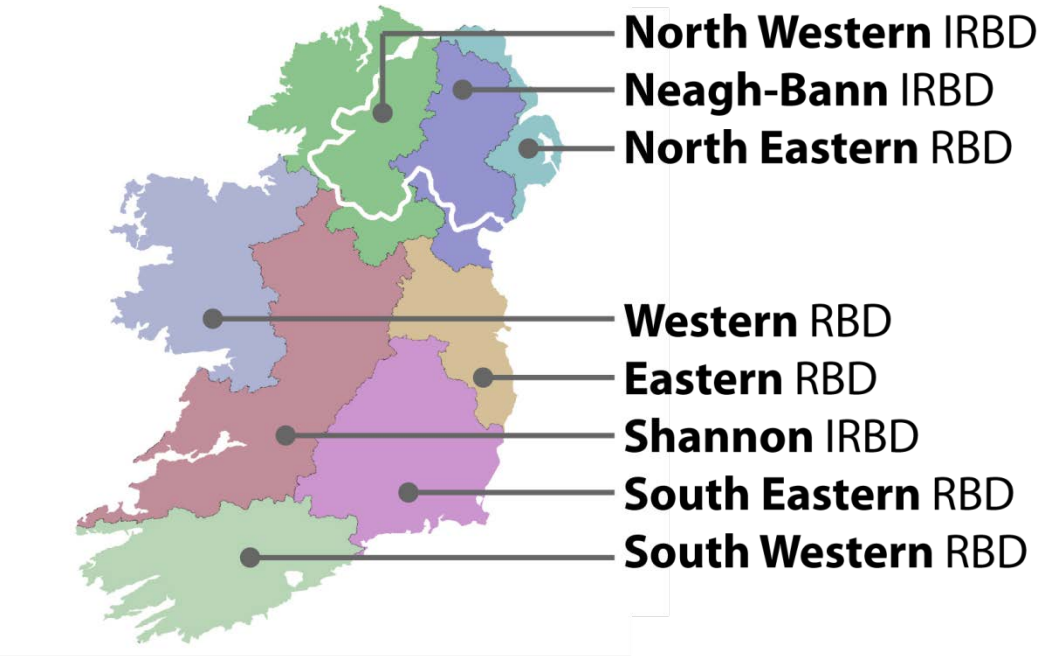


Figure 2-1 River Basin Districts for the 1st Cycle of the WFD (2009 – 2015)

The first plans summarised the water bodies that were unlikely to meet the environmental objectives of the WFD by 2015, and identified the pressures these water bodies were experiencing. Much of the focus was also on measures to target point source pollution such as waste water treatment discharges.

The second cycle of planning has modified the focus somewhat, taking into account lessons learned over the first cycle period. Much has changed since that first cycle and new approaches are now proposed to: governance; river basin planning; and assessment. Most notably the second cycle sees the Eastern, South Eastern, South Western, Western and Shannon River Basin Districts merged to form one national River Basin District, illustrated in **Figure 2-2**. Furthermore, there will be a single administrative area established in the Republic of Ireland to coordinate the management of the North Western and Neagh Bann International RBDs with the relevant authorities in Northern Ireland.

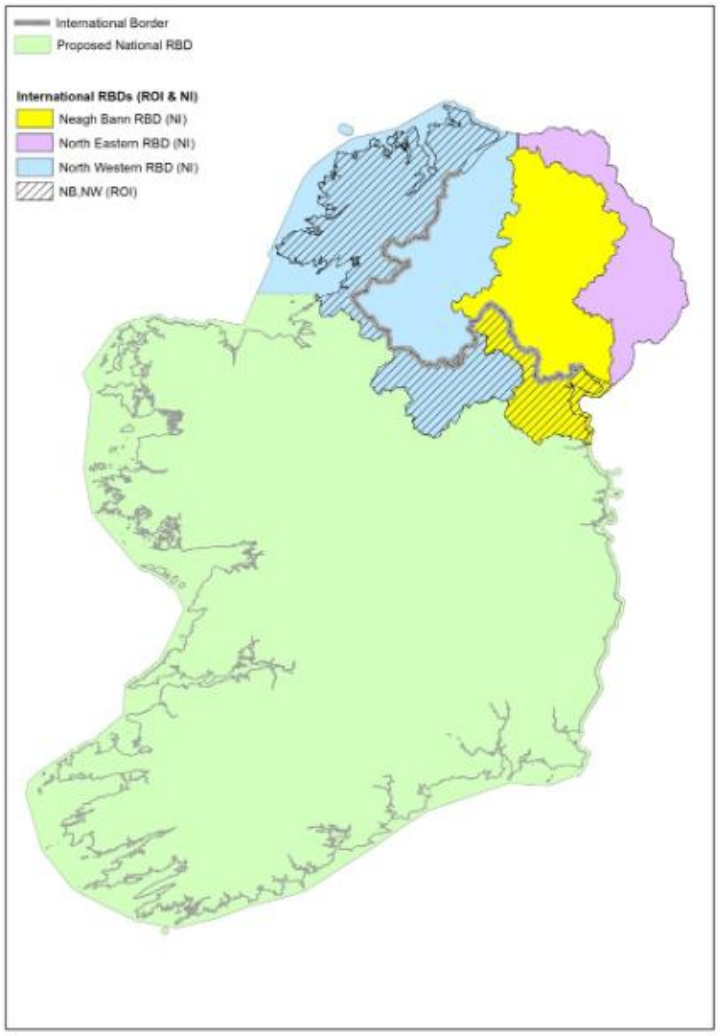


Figure 2-2 Ireland's River Basin Districts for the Second Cycle of WFD (2015 – 2021)

During the first cycle, the administration of the process was overseen by RBD coordinators representing various local authorities. However following a review, a new governance structure has been developed with clear tiers of delineation for responsibility from the DHPCLG on water policy issues, to the EPA for technical implementation and preparation/reporting of the RBMP and ultimately to the local authorities to implement the programme of measures (PoM). The tiers of responsibility are described below:

Tier 1 – The minister, supported and advised by a Water Policy Advisory Committee (WPAC), has responsibility for WFD policy, legislation and ensuring the provision of adequate resources for implementing the WFD. The minister will also finalise the second RBMP. It is at this level also that the RBMP, including the PoM, will be refined and finalised in consultation with other key departments and state agencies before being presented to the minister for finalisation.

Tier 2 – The Environmental Protection Agency (EPA) has significant new responsibilities including drafting environmental objectives, monitoring, assessment and reporting of 4,829 waterbodies, looking at trends and changes determining risk and identifying causes, preparing the template RBMP and compiling common PoMs.

Tier 3 - Local authorities, led by the newly established Local Authority Water and Communities Office (LAWCO) will have the role of carrying out and enforcing these measures on the ground. They will also have key responsibility for ensuring effective public participation, including consultation on the draft RBMP.

To support this tiered structure, a number of implementation groups have been established which will interact to deliver the RBMP as outlined below and in **Figure 2-3**;

The Water Policy Advisory Committee (WPAC): provision of high-level policy direction and monitoring of implementation for the duration of this RBMP.

The National Coordination and Management Committee (NCMC): Currently being established by the WPAC, the NCMC will be chaired by the DHPCLG and will comprise members of the EPA and the chairs of the regional committees. The NCMC will ensure the management of the PoM, agree and oversee the work programmes overall, address obstacles to implementation and advise the WPAC on future policy needs if required. Future RBMPs and PoMs will be prepared by the NCMC.

The National Technical Implementation Group (NTIG): Implementation of the RBMP will be overseen by the NTIG at a national level, ensuring coordinated actions and addressing operational barriers to implementation. The NTIG will be chaired by the EPA with members comprising the local authorities as well as various state and public bodies as appropriate. The NTIG will also review progress and report to the NCMC on the implementation and effectiveness of measures and actions, and undertake assessments of the effectiveness of actions through the monitoring programme.

Regional Local Authority Structures: Five regional committees will support the Local Authority RBMP Office which will be responsible for delivering measures at the regional and local level. Chaired at the Chief Executive level, technical advice will also be provided by the EPA. Each of the five committees will produce a Regional Integrated Catchment Management Programme for this cycle of RBMP, setting out priority areas for actions and aimed at the water body, sub-catchment or catchment level as appropriate.

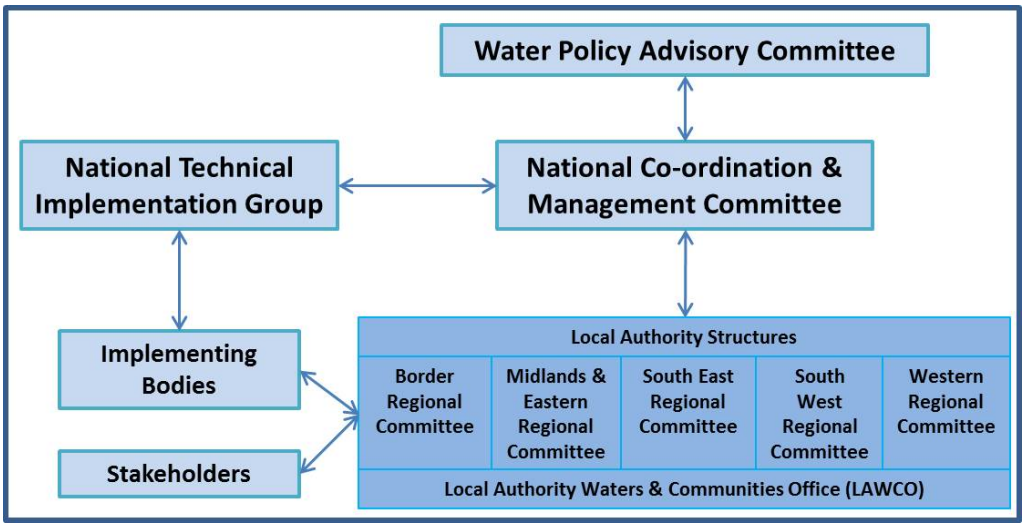


Figure 2-3 Proposed Governance and Co-ordination Structures

In addition to these changes in governance, there has also been greater focus on the characterisation aspects in the RBMP development, which have taken a more holistic approach to understanding the functioning of catchments and sub-catchments. This approach is often termed integrated catchment management. Scientifically, a catchment can be defined as an area where water is collected by the natural landscape and flows from source through river, lakes and groundwater to the sea. Integrated catchment management also considers the broader issues and tries to understand questions such as:

- How water is moving through the catchment;
- What activities might be causing pollution in the catchment and where;
- What is the water in the catchment being used for e.g. dependant ecosystems, drinking water, industrial processes, agriculture?

Integrated catchment management also relies on the knowledge and experiences of the local community to understand the *real world* challenges in their catchment, involving them in decision making and the roll out of measures developed to protect, improve and maintain the health of the waterbodies in their catchment.

2.2 APPROACH TAKEN TO DEVELOPING THE PLAN

Within each cycle of planning, a sequential approach is taken to developing the RBMP and associated POMs as outlined in **Figure 2-4.** The initial step involves *characterisation* of Ireland's water bodies in order to develop a tailored *programme of measures* to allow for the protection of high and good status or the restoration of high and good status for all water bodies. The outcomes are then *monitored* in order to feed into further characterisation and measures setting as the cycle moves forward.

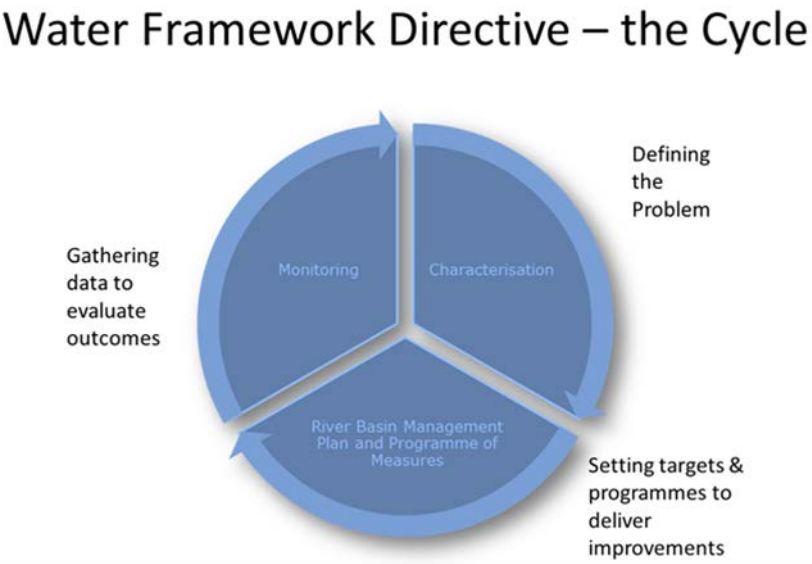


Figure 2-4 Water Framework Directive Cycle (Source: DECLG[4])

[4] Timetable and work Programme for the Development of the Second Cycle RBMP. Consultation Document 2014

The characterisation process is required under Article 5 of the WFD. Characterisation is broadly a three step process that entails:

(i) **Preliminary Risk Screening** aims to identify if a water body is 'At Risk' of not achieving good status, including those that may be deteriorating. This entails a risk assessment based on the biological status of the water body, the trends in chemistry/nutrient data and the distance to the Environmental Quality standard (EQS) thresholds based on EPA monitoring data. A water body may be deemed 'At Risk' if the biological status is less than Good, or if, in the case of rivers, the baseline orthophosphate or ammonia concentrations are above the EQS for Good status. For lakes, chlorophyll concentration is also incorporated in the risk screening.

(ii) **Initial Characterisation** allows for investigation into the potential pressures that may be influencing the 'At Risk' water bodies. This is carried out at sub-catchment scale (areas from 100 – 250km^2) and also at catchment scale. This process involves the identification of both point source and critical source areas for diffuse pollution that could negatively impact water quality. This is followed by consultation with local authorities to determine which one or combination of these pressures is significant.

(iii) **Further Characterisation** entails more detailed investigative assessment such as catchment walks and monitoring. The significant pressures identified by the initial characterisation are targeted during this stage. This will provide more information on the nature of the pressure and how it can be managed, and this process will then inform the PoMs.

Following characterisation, the process moves to setting environmental objectives and developing a PoM to deliver improvements. This process includes:

(i) **Identifying Environmental Objectives and Establishing Priorities** (i) prevent the deterioration of water bodies and to protect, enhance and restore waterbodies with the aim of achieving at least good status and (ii) achieve compliance with the requirements for designated protected areas. The challenges presented in achieving these objectives are very significant and prioritisation is required to ensure they are achieved. Prioritisation in this cycle will focus on full compliance with existing EU legislation; prevention of any further deterioration; meeting the objectives for designated protected areas; protecting high status waters and implementing targeted actions and pilot schemes in focus sub-catchments.

(ii) **Identifying and Summarising a PoMs** based on the characterisation and pressures identified and the priorities set. This PoMs aims to meet the environmental objectives and specific requirements of the WFD and includes specific measures aimed at implementation of existing legislation; revision of legislation, knowledge transfer; grant aid, increased inspections and further monitoring to establish a better evidence base.

(i) **Implementation** is an important part of this is setting out what the plan hopes to achieve and how the measures will be implemented on the ground. An implementation strategy is being prepared to guide the full implementation of the basic measures through the relevant national authorities and, where these measures are not sufficient to meet the objectives of the WFD, to implement targeted supporting measures. The process of selecting the water bodies to be targeted for action through supporting measures will be driven at regional and local level through local authority structures.

The outcome of this process is the RBMP and POMs, but the process does not end there. The planning cycle continues into a monitoring phase which includes setting out plans for on-going monitoring and reporting on implementation. This last step will be critical to measuring the gains made in this cycle of the RBMP.

2.3 CONTENTS AND MAIN OBJECTIVES OF THE PLAN

The RBMP covers:

1. Introduction and background.
2. Developing the River Basin Management Plan.
3. Review of first cycle River Basin Management Plan.
4. Current state of the water environment.
5. Catchment characterisation.
6. Environmental objectives.
7. Measures to protect and improve our water bodies.
8. Measures for protected areas and high status waters.
9. Economic analysis.
10. Implementation strategy.
11. Communication and public engagement.
12. Water quality monitoring.
13. Expected outcomes.

This second cycle RBMP aims to build on the progress made during the first cycle. In the first cycle measures included licensing of urban waste water discharges and associated investment in urban waste water treatment and the implementation of the Nitrates Action Programme (through the Good Agricultural Practice Regulations S.I. 31 of 2014) but it has been acknowledged that the development and implementation of supporting measures during the first cycle was not sufficiently progressed and changes were needed to effect the kind of outcomes needed to achieve the objectives of the WFD. These changes have come in the form of changes to governance and administration of measures, a better knowledge base for focussed investment and realistic levels of ambition tied to available resources.

In the first cycle RBMP, the structure of multiple River Basin Districts (RBDs) did not prove effective, either in terms of efficiency of developing the RBD plans or in terms of implementation of those plans. The governance and delivery structures in place for the first cycle were not as effective as expected and the targets set were too ambitious and not grounded on a sufficiently developed evidence base. The second cycle plan has therefore refocussed and is now framed in a plan with effective and efficient national, regional and local structures, integration of these structures to ensure effective co-ordination between scientific understanding of the problems to be addressed, policy development and on the ground delivery. Targets are based on sound evidence and are also considered to be achievable. While effective national measures are in place to address pressures on a whole RBD basis, where such broad based measures are not sufficient, the delivery of supporting measures are prioritised.

The WFD itself sets out the environmental objectives which are required to be met through the process of river basin planning and implementation of those plans. Specific objectives are set out for surface water, groundwater and protected areas. The challenges presented in achieving the objectives are very significant, and therefore a key purpose of the RBMP is to set out priorities and ensure that implementation is guided by this prioritisation. Article 4 of the WFD sets out the full detail of the environmental objectives of the directive, the application of the objectives, and possible exemptions the objectives, however, in summary, the general thrust of those objectives are:

For Surface Waters:

- To prevent deterioration of the status of surface waters;
- To protect, enhance and restore surface waters with the aim of achieving good status (ecological and chemical) for all water bodies;
- For heavily modified water bodies and artificial water bodies, the aim is to protect and enhance those bodies to achieve good ecological potential and good chemical status; and
- To progressively reduce pollution from priority substances and cease or phase out emissions, discharges and losses of priority hazardous substances into surface waters.

For Groundwater:

- To prevent deterioration of the status of groundwater;
- To protect, enhance and restore all bodies of groundwater, and ensure a balance of abstraction and recharge, with the aim of achieving good groundwater status (quantitative and chemical); and
- To reverse any significant and sustained upward trends in the concentration of pollutants in groundwater.

For Protected Areas:

- To achieve compliance with objectives and standards under which the individual protected areas have been established.

3 ASSESSMENT METHODOLOGY

3.1 GUIDANCE DOCUMENTS ON AA

The AA requirements of Article 6 of the Habitats Directive follow a sequential approach as outlined in the following legislation, guidance documents and Departmental Circulars, namely:

European and National Legislation:

- Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (also known as the 'Habitats Directive');
- Council Directive 2009/147/EC on the conservation of wild birds, codified version, (also known as the 'Birds Directive');
- European Communities (Birds and Natural Habitats) Regulations 2011 to 2015; and
- Planning and Development Act 2000 to 2015.

Guidance:

- *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities.* DEHLG (2009, revised 10/02/10);
- *Managing Natura 2000 sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*[5]. European Commission (2000).
- *Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.* European Commission (2001).
- *Communication from the Commission on the Precautionary Principle*. European Commission (2000b)
- *EC study on evaluating and improving permitting procedures related to Natura 2000 requirements under Article 6.3 of the Habitats Directive 92/43/EEC*. European Commission (2013).
- *Guidance Document on Article 6(4) of the 'Habitats Directive' 92/43/EEC. Clarification of the concepts of: Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission*. European Commission (2007).
- *Marine Natura Impacts Statements in Irish Special Areas of Conservation*. A working Document. DAHG (2012).
- *Wind energy developments and Natura 2000*. European Commission (2011)
- *The implementation of the Birds and Habitats Directives in estuaries and coastal zones with particular attention to port development and dredging*. European Commission (2011).

[5] The Commission has notified its intent to revise this guidance and a draft revised document was published in April 2015. It would appear that this has not been finalised to date, and no revised guidance document is available on the Commissions official website as of September 2016.

Departmental/NPWS Circulars:

- *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities.* Circular NPWS 1/10 and PSSP 2/10.
- *Appropriate Assessment of Land Use Plans*. Circular Letter SEA 1/08 & NPWS 1/08.
- *Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments*. Circular L8/08.
- *Guidance on Compliance with Regulation 23 of the Habitats Directive.* Circular Letter NPWS 2/07.
- *Compliance Conditions in respect of Developments requiring (1) Environmental Impact Assessment (EIA); or (2) having potential impacts on Natura 2000 sites*. Circular Letter PD 2/07 and NPWS 1/07.

3.2 GUIDING PRINCIPLES AND CASE LAW

Over time, legal interpretation has been sought on the practical application of the legislation concerning AA as some terminology has been found to be unclear. European and National case law has clarified a number of issues and some aspects of the published guidance documents have been superseded by case law. Some relevant publications include:

- Nature and Biodiversity Cases: Ruling of the European Court of Justice. European Commission (2006)
- Article 6 of the Habitats Directive: Rulings of the European Court of Justice. Ecosystems Ltd (2014).

Case law has been considered in the preparation of both the Screening for AA and this NIS of the RBMP.

3.3 STAGES OF APPROPRIATE ASSESSMENT

The AA process progresses through four stages. If at any stage in the process it is determined that there will be no adverse effect on the integrity of a European Site in view of the sites conservation objectives, the process is effectively completed. The four stages are as follows:

- Stage 1 – Screening of the proposed plan or project for AA;
- Stage 2 – An AA of the proposed plan or project;
- Stage 3 – Assessment of alternative solutions; and
- Stage 4 – Imperative Reasons of Overriding Public Interest (IROPI)/ Derogation.

Stage 1: Screening for AA

The aim of screening is to assess firstly if the plan or project is directly connected with or necessary to the management of European Site(s); or in view of best scientific knowledge, if the plan or project, individually or in combination with other plans or projects, is likely to have a significant effect on a European site. This is done by examining the proposed plan or project and the conservation objectives of any European Sites that might potentially be affected. If screening

determines that there is potential for significant effects or there is uncertainty regarding the significance of effects then it will be recommended that the plan is brought forward to the next stage of the AA process. Screening of the Draft RBMP was undertaken in 2016 and it was determined that AA was required.

Stage 2: Appropriate Assessment

The aim of Stage 2 of the AA process is to identify any adverse impacts that the plan or project might have on the integrity of relevant European Sites. As part of the assessment, a key consideration is 'in combination' effects with other plans or projects. Where adverse impacts are identified, mitigation measures can be proposed that would avoid, reduce or remedy any such negative impacts and the plan or project should then be amended accordingly, thereby avoiding the need to progress to Stage 3. As part of this stage an NIS is prepared to support decision making. This document is the NIS for the RBMP. It is noted that this NIS relates to a plan rather than a project, and as such a two stage approach has been taken to reflect the plan making process under the SEA Directive which requires a draft and final stage. The first stage of the assessment therefore related to the draft RBMP which was subject to consultation alongside the draft plan and SEA environmental report. Following stakeholder feedback and updates to the plan, all changes were screened for likely significant effects. An AA determination will be made by the competent authority prior to finalising and adopting the plan.

Stage 3: Alternative Solutions

If it is not possible during Stage 2 of the AA process to conclude that there will be no adverse effects on site integrity, Stage 3 of the process must be undertaken which is to objectively assess whether alternative solutions exist by which the objectives of the plan or project can be achieved. Explicitly, this means alternative solutions that do not have adverse impacts on the integrity of a European Site. It should also be noted that EU guidance on this stage of the process states that, 'other assessment criteria, such as economic criteria, cannot be seen as overruling ecological criteria' (EC, 2001). In other words, if alternative solutions exist that do not have adverse impacts on European Sites; they should be adopted regardless of economic considerations. This stage of the AA process should result in the identification of the least damaging options for the plan or project.

Stage 4: Imperative Reasons of Overriding Public Interest (IROPI)

This stage of the AA process is undertaken when it has been determined that a plan or project will have adverse effects on the integrity of a European Site, but that no alternatives exist. At this stage of the AA process, it is the characteristics of the plan or project itself that will determine whether or not the competent authority can allow it to progress. This is the determination of 'over-riding public interest'.

It is important to note that in the case of European Sites that include in their qualifying features 'priority' habitats or species, as defined in Annex I and II of the Directive, the demonstration of 'over-riding public interest' is not sufficient and it must be demonstrated that the plan or project is necessary for 'human health or public safety considerations'. Where plans or projects meet these criteria, they can be allowed, provided adequate compensatory measures are proposed. Stage 4 of the process defines and describes these compensation measures.

3.4 INFORMATION SOURCES CONSULTED

The following general sources of information have been consulted for background environmental information. A detailed (not exhaustive) reference list can be found in **Section 9**.

The following sources of information have been consulted:

- Department of Housing, Planning, and Local Government – online land use mapping www.myplan.ie/en/index.html;
- GeoHive online mapping http://map.geohive.ie/mapviewer.html;
- Ordnance Survey of Ireland – Online mapping and Aerial photography www.osi.ie;
- National Parks and Wildlife Service – online European Site information www.npws.ie;
- Northern Ireland Environment Agency – online European Site information www.doeni.gov.uk;
- National Parks and Wildlife Service – Information on the status of EU protected habitats in Ireland (NPWS 2013a & 2013b);
- Environmental Protection Agency – Water Quality www.epa.ie; EnVision mapping system http://gis.epa.ie/Envision; www.catchment.ie website;
- Information on www.wfdireland.ie;
- Geological Survey of Ireland – Geology, soils and Hydrogeology www.gsi.ie;
- Information on the conservation status of birds in Ireland (Colhoun & Cummins, 2013);
- Format for a Prioritised Action Framework (PAF) for Natura 2000 (DAHG, 2014) www.npws.ie/sites/default/files/general/PAF-IE-2014.pdf, and
- Actions for Biodiversity 2011-2016: Irelands National Biodiversity Plan (DAHG, 2011).

3.5 IMPACT PREDICTION

The methodology for the assessment of impacts is derived from the *Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites* (EC, 2001). When describing changes/activities and impacts on ecosystem structure and function, the types of impacts that are commonly presented include:

- Direct and indirect effects;
- Short and long-term effects;
- Construction, operational and decommissioning effects; and
- Isolated, interactive and cumulative effects.

Impacts that could potentially occur through the implementation of the plan can be categorised under a number of impact categories as outlined in the EC 2001 document as follows:

- Loss/Reduction of habitat area,
- Disturbance to key species,
- Habitat or species fragmentation,
- Reduction in species density, and
- Changes in key indicators of conservation value such as decrease in water quality and quantity.

A “source –pathway-receptor” approach has been applied for this assessment. The ***source*** relates to the policy measures outlined in the RBMP which have the potential to adversely impact European Sites e.g. infrastructural developments such as new Waste Water Treatment Plants. The ***pathways*** by which RBMP policy measures can impact European Sites include changes in land use, habitat loss/fragmentation, emissions to air and via hydrological connections. The ***receptor*** in this instance, will be the European sites, potentially including those transboundary sites with Northern Ireland for which there is a pathway of connectivity as a result of the implementation of the RBMP.

4 OVERVIEW OF THE RECEIVING ENVIRONMENT

Ireland has obligations under EU law to protect and conserve biodiversity. This relates to habitats and species both within and outside designated sites. Nationally, Ireland has developed a Biodiversity Plan (DAHG, 2011) to address issues and halt the loss of biodiversity, in line with international commitments. The overall target for Ireland's National Biodiversity Plan is that *biodiversity loss and degradation are reduced by 2016 and progress is made towards substantial recovery by 2020*. This follows on from the European Commission EU Biodiversity Strategy to 2020 which has a headline target *to halt the loss of biodiversity and ecosystem services by 2020, to restore ecosystems in so far as is feasible and to step up the EU contribution to averting global biodiversity loss*. This implements EU commitments under the Convention on Biological Diversity (1992).

4.1 IDENTIFICATION OF EUROPEAN SITES

Current guidance on the zone of influence (ZoI) to be considered during the AA process states the following:

"A distance of 15km is currently recommended in the case of plans, and derives from UK guidance (Scott Wilson et al., 2006). For projects, the distance could be much less than 15km, 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".

The RBMP does not detail geographic specificity for the implementation of the RBMP measures, so it must be assumed that these measures could be implemented anywhere within the Republic of Ireland. The ZoI of the RBMP is therefore considered to include all European Sites within the Republic of Ireland and considers transboundary impacts to SACs and SPAs within 15km of the national border.

It is acknowledged that qualifying interests (QIs)/special conservation interests (SCIs) of European Sites have different sensitivities and therefore a set distance of 15km may not be appropriate to assess the potential effects on all QIs/SCIs. For example QI fish species could be affected by changes to water quality at more than 15km distance, while SCI bird species might be most significantly affected by disturbance within 1km of their habitat. Therefore whilst a reference distance of 15km has been used for diagrammatic purposes, the impact assessment considers the sensitivities to European Sites in light of their generic Conservation Objectives (COs) (which encompass the spirit of the site specific COs in the context of maintaining and restoring favourable conservation condition) and therefore sensitivities of European Sites outside of 15km are considered.

The Natura 2000 Network of sites is designated owing to its ecological importance in a European context. Sites within the Natura 2000 Network are referred to as European Sites and comprise SACs and SPAs. SACs are concerned with the protection of specific QIs and SCIs and the legal basis for their designation is the EU Habitats Directive. In the Republic of Ireland, 430 SACs (includes 7 offshore sites outside of a 15km buffer ZoI) have been designated covering 58 habitat types recognised in Annex I of the Directive, with 16 habitats designated as "priority" habitats owing to their ecological vulnerability. In addition, the same Directive, recognises 26 Annex II species. Of the 58 habitats, 44 are considered to be water dependent habitats, and 22 species are considered to be water dependent (**Appendix I**). The habitats covered extend across the country and cover a range of

ecological features from coastal to grassland to woodland. Priority habitats include Active Raised Bogs, Turloughs and Oligotrophic lakes. Annex II species include Bats, Otter, Atlantic salmon, the Freshwater pearl mussel amongst others. Through the Birds Directive, SPAs are designated for the protection of endangered species of wild birds including listed rare and vulnerable species, regularly occurring migratory species as well as wetland habitats that support such species. Currently there are 165 SPAs designated within the Republic of Ireland.

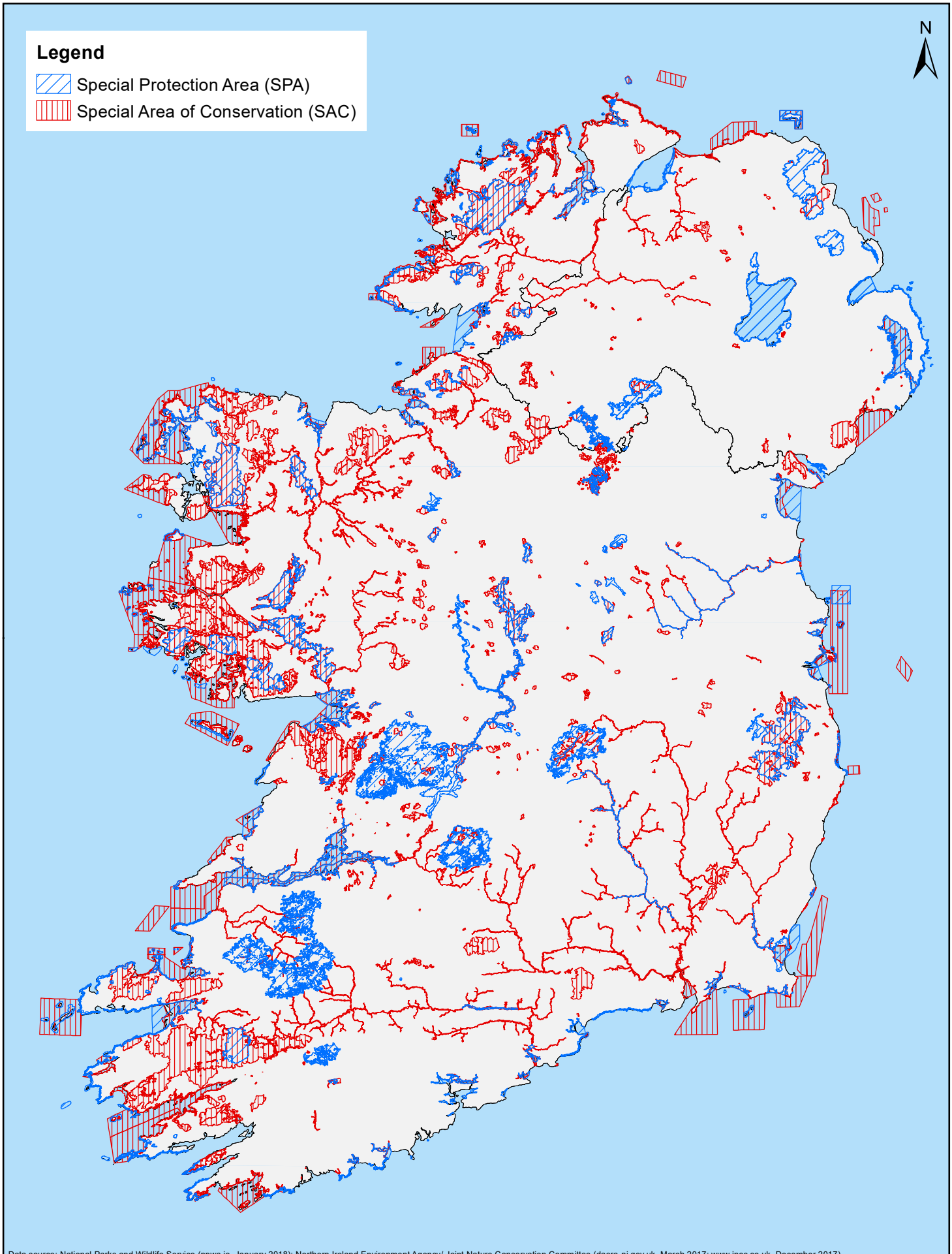
Table 4-1 provides a summary breakdown of the European Sites both in Ireland and those transboundary sites with Northern Ireland which are within 15km of the land boundary shared with Northern Ireland. **Figure 4-1** shows the distribution of the SACs and SPAs listed in **Table 4-1**. A full listing of the European Sites are included in **Appendix B-E**.

Table 4-1 European Sites within the ZoI of the RBMP

Republic of Ireland*	Northern Ireland**
433 SACs + 6 offshore SACs	59 SACs
165 SPAs	18 SPAs

**NPWS data revision as of August 2017. Checked 26th March 2018*

***NIEA/ JNCC data revision as of March 2017 (includes newly proposed/candidate sites).*



Title

Figure 4.1 - European Sites

Project
River Basin Management Plan

Client
Department of Housing, Planning and Local Government

[redacted]
West Pier Business Campus,
Dun Laoghaire,
Co Dublin, Ireland.

Tel: +353 (0) 1 4882900
Email: ireland@rpsgroup.com
Web Page: rpsgroup.com/ireland

Issue Details

Drawn By:	NO'N	**Project No.**	MDR1237
Checked By:	LC	**File Ref:**	MDR1237Arc0001F02
Approved By:	AG		
Scale:	1:1,950,000 @ A4	**Projection:**	ITM (IRENET95)
Date:	16/04/2018		

4.2 CONSERVATION OBJECTIVES

Article 6(3) of the Habitats Directive states 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 of the site in view of the site's ***conservation objectives****.*

QIs/SCIs are annexed habitats and annexed species of community interest for which an SAC or SPA has been designated. The Conservation Objectives (COs) for European Sites are set out to ensure that the QIs/SCIs of that site are maintained or restored to a favourable conservation condition/conservation status. Maintenance of favourable conservation condition of habitats and species at a site level in turn contributes to maintaining or restoring favourable conservation status of habitats and species at a national level and ultimately at the Natura 2000 network level.

In Ireland 'generic' COs have been prepared for all European Sites, while 'site specific' COs have been prepared for a number of individual sites to take account of the specific QIs/SCIs of that Site. Both the generic and site specific COs aim to define favourable conservation condition for habitats and species at the site level.

Generic COs which have been developed by NPWS encompass the spirit of site specific COs in the context of maintaining and restoring favourable conservation condition as follows:

For SACs:

- '*To maintain or restore the favourable conservation condition of the Annex I habitats and/or Annex II species for which the SAC has been selected'.*

For SPAs:

- '*To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for the SPA*'.

Favourable Conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is "favourable".

Favourable Conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long term basis.

A full listing of the COs and QIs/SCIs that each European Site is designated for, as well as the attributes and targets to maintain or restore the QIs/SCIs to a favourable conservation condition are available from the NPWS website www.npws.ie.

4.3 CONSERVATION STATUS OF EU PROTECTED HABITATS AND SPECIES

In 2007 and again in 2013, NPWS published a report detailing the conservation status in Ireland of habitats and species listed in the EU Habitats Directive (92/43/EEC), referred to as the Article 17 Report[6]. Under the Habitats Directive, each member state is obliged to undertake surveillance of the conservation status of the natural habitats and species in the Annexes and under Article 17, to report to the European Commission every six years on their status and on the implementation of the measures taken under the Directive. **Appendix G** sets out a summary of the conservation status of each habitat and species from both 2007 and 2013.

In the Article 17 Report from 2013, 9% of habitats were assessed as "*favourable"*, 50% as "*inadequate*" and 41% as "*bad*". 11% of water dependent habitats (5) were assessed as "*favourable*". Among the key findings were:

- The status of Oligotrophic lakes (habitat 3110) and Hard water lakes (habitat 3140) is "bad". The key pressures are agriculture, forestry and peatlands.
- Some of the coastal and estuarine habitats are considered to be improving, and to have better prospects, due in part to implementation of other EU environmental Directives and new regulations concerning fisheries and aquaculture, in addition to EIA affecting wetlands and grasslands;
- Improvements to wastewater treatment facilities and use of fertilisers will result in cleaner freshwaters and estuaries;
- Continued loss of the cleanest stretches of river in a significant concern for the freshwater pearl mussel which is in decline. The number of high status sites decreases year on year;
- Dune and machair habitats are under pressure from recreational activity, agricultural practices and in some cases abandonment pressures;
- The status of raised bogs in Ireland is "Bad"; and the trend is for an ongoing decline as restoration is necessary to cause improvement, notwithstanding the cessation of cutting on SAC bogs;
- Blanket bog is also assessed as "Bad"; the report notes that, as one of the main impacts on this habitat is grazing, an improving trend might be expected due to the implementation of Commonage Framework Plans. However, this improvement appears to be offset and even exceeded by on-going deleterious effects such as peat cutting, erosion, drainage and burning; and
- Losses of limestone pavement has been recorded outside the SAC network, however the BurrenLIFE and Burren Farming for Conservation Programme have significantly improved the quality of pavement and its associated habitats.

From the 2013 report, 52% of all species were assessed as "*favourable*", 20% as "*inadequate*", 12% as "*bad*" and 16% as "*unknown*" or considered to be vagrant species. Among the key findings are:

[6] The Status of EU Protected Habitats and Species in Ireland, NPWS 2007 (Vol 1-3) and 2013 (Vol 1 -3)

- Aquatic species are deemed to be most at risk;
- Freshwater pearl mussel is "Bad" and declining, with few locations with recruiting populations showing near-adequate replenishment;
- Otter has been assessed as "Favourable" with evidence of an expanding range and apparent population recovery;
- Salmon is showing signs of improvement and the population is stable, but there are low numbers and salmon is susceptible to a wide range of pressures. The overall conservation status is "Inadequate" but stable;
- Killarney shad is assessed as "Favourable", but some other fish remain at "Bad" status.
- The common frog has improved from "Inadequate" to "Favourable", but the conservation status for the Natterjack toad is "Bad" but improving as there have been efforts made by farmers to provide the ponds they need for breeding, resulting in stabilisation of future prospects;
- Sea lamprey has remained at "Bad" conservation status as physical barriers such as weirs are limiting their ability to reach breeding areas;
- Pollan has remained at "Bad" conservation status due to nutrient enrichment in large lakes;
- There are concerns regarding the habitat quality at spawning sites for the twaite shad which has also remained at "Bad" conservation status; and
- Many species of dolphin and whale have "Favourable" conservation status; however data for vagrants is limited and insufficient to draw a conclusion.

Similarly, the requirements for reporting under Article 12 of the Birds Directive (2009/147/EC) are every 6 years. Irelands Article 12 submission to the EU Commission on the *Status and trends of bird species (2008-2012)*[7] covers 196 species, which includes breeding, wintering and passage species. Irish breeding birds long-term trends were reported with 19.1% increasing; 6.6% stable; 17.6% decreasing and 56.6% unknown (EPA, 2016). For Irish wintering birds, 19.3% were increasing, 3.5% stable, 15.8% decreasing and 61.4% unknown (EPA, 2016). The results confirm that there is a need for measures to halt the declines noted above, most of which are due largely to changes in farming practices and intensity, and also the increase of activity in extensively farmed uplands through forestry and wind farm construction. **Appendix G** sets out a summary of the conservation status of each bird species from both 2007 and 2013.

4.4 EXISTING THREATS AND PRESSURES TO EU PROTECTED HABITATS AND SPECIES

Under Article 17 of the Habitats Directive, member states are obliged to identify threats and pressures to QIs/SCIs using a standard set of criteria. A threat is defined as an "Activity expected to have an impact on a species/habitat type in the future", and a pressure is defined as an "Activity impacting a species/habitat type during the reporting cycle"[8].

Threats and pressures considered to be most relevantly linked either directly or indirectly to the RBMP were extracted from the full list of threats and pressures[9]. The headline categories considered

[7] http://ec.europa.eu/environment/nature/knowledge/rep_birds/index_en.htm Accessed September 2016
[8] Reference Portal for reporting under the Article 17 of the Habitats Directive *Explanatory Notes & Guidelines for the period 2007-2012* http://bd.eionet.europa.eu/activities/Reporting/Article_17/reference_portal
[9] Accessed on the Reference Portal for reporting under the Article 17 of the Habitats Directive http://bd.eionet.europa.eu/activities/Reporting/Article_17/reference_portal

relevant to the RBMP are presented below, with a more detailed breakdown of the threats and pressures under each headline category presented in **Appendix H.**

- Agriculture;
- Forestry;
- Mining, quarrying and energy production;
- Biological resource other than agriculture & forestry;
- Transportation and service infrastructure;
- Urbanisation, residential and commercial development;
- Disturbance due to human activities;
- Pollution;
- Invasive and introduced species;
- Modification of natural conditions; and
- Climate change.

A general lack of environmental awareness, especially regarding ecosystem services was cited by the EPA in the 2012 State of the Environment Report as a pressure on national biodiversity. In their updated 2016 report[10], the future challenges for biodiversity were cited as:

- Land use changes and the planned intensification of agriculture may lead to further habitat loss;
- Climate change is intensifying and the current underlying issues will persist;
- The mainstreaming of biodiversity into economic and development decisions would be of benefit to nature protection;
- There is room for improved co-ordination on nature issues across linked directives and regulatory bodies;
- Robust baseline monitoring systems and comprehensive services mapping systems are needed to highlight and protect nature in Ireland, and
- Increased public awareness is vital.

Ireland's 2nd National Biodiversity Plan 2011 – 2016 is currently being updated. The 2011 – 2016 plan specified that further implementation of existing measures was required included improved coherence at national level between various plans and programmes affecting biodiversity and that decision making at regional and local levels is consistent with high level commitments for biodiversity. Better planning at national, regional and local levels was stated as holding the key to preventing, minimising and offsetting potential negative impacts of development on biodiversity. Development plans such as the National Development Plan, the Rural Development Plan and including climate change adaptation and mitigation measures was seen as critical in terms of compliance with environmental legislation including nature directives, so as to prevent or minimise any potential damages to biodiversity. The implementation of the WFD (and Marine Strategy Framework Directive) was quoted as a mechanism to reduce pressures on biodiversity by protecting the quality of our water, air and soils and reducing diffuse pollution.

[10] http://www.epa.ie/media/Chapter4_Nature.pdf

4.5 RELEVANT BIODIVERSITY POLICY

An updated National Biodiversity Action Plan 2017-2021 was published in May 2017. It lists seven key objectives as follows:

1. Mainstream biodiversity into decision-making across all sectors.
2. Strengthen the knowledge base for conservation, management and sustainable use of biodiversity.
3. Increase awareness and appreciation of biodiversity and ecosystems services.
4. Conserve and restore biodiversity and ecosystem services in the wider countryside.
5. Conserve and restore biodiversity and ecosystem services in the marine environment.
6. Expand and improve management of protected areas and species.
7. Strengthen international governance for biodiversity and ecosystem services.

Ireland's Prioritised Action Framework was published by DAHG in November 2014 and this was based upon the *EU Biodiversity Strategy to 2020* (2011). It identified a range of actions needed to help improve the status of Ireland's habitats and species. The key priorities outlined in the framework are outlined below:

- Restoration of raised bogs;
- Better protection for blanket bogs and Ireland's uplands generally;
- Better management of Ireland's dunes and machair systems;
- Better protection for turloughs;
- Measures to protect Ireland's remaining Freshwater pearl mussels; and
- New measures to protect birds in decline such as the Hen harrier, Corncrake and waders.

In addition there is a growing awareness and recognition of the importance of ecosystem services supported at policy level. Target 2 of the Convention on Biological Diversity (CBD) Strategic Plan 2011-2020 requires that: *By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.* This is mirrored in both the EU Biodiversity Strategy to 2020 (Target 5) and Irelands National Actions for Biodiversity 2011-2016 (Target 3).

5 STAGE 1 SCREENING FOR AA

In order to comply with the requirements of Article 6(3) of the EU Habitats Directive, the process of Screening for AA was undertaken at an early stage in the drafting of the RBMP. The AA Screening assessed the potential for the Draft RBMP to result in likely significant effects on any European Site within the Natura 2000 network, either alone or in combination with other plans and projects.

5.1 POTENTIAL FOR LIKELY SIGNIFICANT EFFECTS

The AA Screening was undertaken before the detailed programme of measures was developed and therefore the potential likely significant effects, as presented in column three of **Table 5-1** below, were inferred, particularly in relation to potential impacts to sensitive habitats e.g. those sensitive to water quality changes. The assessment was largely based on the range of basic measures open to the RBMP for implementation, in the absence of more detailed information or additional 'new' proposed measures. As such, the AA Screening was undertaken in a strategic manner with cognisance of the precautionary principle.

The potential likely significant effects identified at the AA Screening stage have been extracted from the AA Screening document and are detailed in **Table 5-1**.

Table 5-1 Aspects of the plan with potential for significant effects

	Pressure	Category of Measure	Aspects of the plan with potential for significant effects?
1	Agriculture	Address pressures from rural diffuse & point sources	High level measures will include the Nitrates Directive, the Nitrates Action Programme, the Pesticides Regulations and the Agriculture Environmental Impact Assessment Regulations. Potential for change in key indicators of conservation value, disturbance to key species and reduction in density if measures are not effective or do not target key species which require a higher than good status objective.
2	Domestic Waste Water Systems		High level measures will include the existing Domestic Waste Water Treatment Regulations. Potential for change in key indicators of conservation value, disturbance to key species and reduction in density if measures do not include SACs and SPAs as sensitive receptors.
3	Urban Waste Water	Address pressures from urban waste water & urban run off	High level measures will include implementation of the Urban Waste Water Treatment Directive, and licensing or certification of discharges to the aquatic environment and ensuring compliance through the Irish Water - Water Services Strategic Plan and the associated Irish Water - Capital Investment Programme.
4	Urban Run Off		

	Pressure	Category of Measure	Aspects of the plan with potential for significant effects?
			Measures in addition to the above will include improved WWTP operations; drainage area plans for wastewater collection systems; review of nutrient sensitive areas and targeted investment in subthreshold WWTPs. Where upgrades or new WWTPs or collection systems are required, there is potential for direct, indirect, construction, operational and cumulative effects on SACs and SPAs in the absence of mitigation measures.
5	Forestry	Address pressures from forestry, peatlands & extractive industry	Measures will include existing regulations and policies which the Forest Service have realigned with water policy e.g. Woodlands for Water; Land types for Afforestation document; Environmental requirements for afforestation document; support for Native Woodlands and the Native Woodland Conservation Scheme. Afforestation and replanting after felling in sensitive areas has the potential to lead to loss/reduction of habitat area, disturbance to key species, habitat fragmentation and reduction in species density in the absence of mitigation. Species highly sensitive to sedimentation in particular, will be impacted greatest.
6	Extractive Industry		Existing measures include Integrated Pollution control (IPC) licensing operated by the EPA for large scale peat extraction e.g. greater than 50 hectares. The Department of Housing, Planning, and Local Government (DHPCLG) proposed to introduce regulations requiring the EPA to carry out EIA for all existing and new large-scale peat extraction as part of its examination of IPC licence applications. Additional measures include the Bord na Mona Sustainability 2030 Strategy and the NPWS Peatland Strategy (2016). While the introduction of EIA for existing and new large-scale peat extraction is welcomed, this should equally be accompanied by a Screening for Appropriate Assessment and a Stage 2 Appropriate Assessment if required. Peat extraction has the potential to cause direct and indirect impacts to habitats and species, and alter water quality environmental supporting conditions such as ammonia and dissolved organic carbon, which may lead to the disturbance of key species and reduction in species density.
7	Invasive Species	Protect water bodies from invasive species	High level measures will include implementation of EU Regulation (1143/2014) on 'the prevention and management of the introduction and spread of

	Pressure	Category of Measure	Aspects of the plan with potential for significant effects?
			invasive alien species, and the development and implementation of clear governance arrangements and coordination mechanisms across relevant public bodies. Invasive alien species, once established are difficult to eradicate and create loss / reduction in habitat areas, disturbance to key species and reduction in species density. The measures will only address a small number of invasive species, therefore the scope will still exist for other invasive species to continue to damage to SACs and SPAs.
8	Physical Modification	Improve physical condition of water environment	Key measures are likely to include improve hydromorphology assessment methods; collation of data and an inventory of barriers to fish migration; the existing OPW drainage maintenance programme 10 steps to environmentally friendly maintenance and the feasibility of constructing a bypass channel in the lower Shannon catchment to improve fish migration. Measures proposed are largely research and data gathering with the exception of the OPW drainage maintenance scheme 10 step protocol. The drainage maintenance programme also includes for the appropriate assessment of all planned maintenance in each year. If the feasibility of constructing a bypass channel in the lower Shannon catchment to improve fish migration is confirmed, this project will require appropriate assessment.
9	Abstractions/Diversion	Address abstraction pressures	Measures proposed include further abstraction risk assessment by the EPA; proposals to establish a comprehensive and maintained database of water abstractions above 25m3/day and upgrading and maintenance programme for the national hydrometric network. There is a risk of direct and indirect, and cumulative impacts from abstractions on SACs and SPAs. The abstraction risk assessment should also include risks to protected habitats and species, particularly those which are water dependent.
10	Industry	Other measures	No details available.
11	Waste	Other measures	No details available.
12	Historically Polluted Sites	Other measures	No details available.
13	Water Treatment	Other measures	No details available.
14	Others	Other measures	No details available.

5.2 SCREENING FOR APPROPRIATE ASSESSMENT CONCLUSION

On completion of the Screening for AA, it was concluded that the potential for likely significant effects on European Sites could not be ruled out and the Draft RBMP would undergo AA. The DHPLG recorded their AA Screening determination accordingly. The AA Screening can be found in **Appendix F**.

The Screening for AA was submitted to the DAU of the DAHRRGA in January 2017, advising that the Draft RBMP was proceeding to AA.

The AA process then proceeded to the preparation of this NIS to inform the AA to be undertaken by DHPLG.

6 STAGE 2 APPROPRIATE ASSESSMENT OF THE DRAFT RBMP

6.1 INTRODUCTION

The assessment considers the impacts[11] that the Draft RBMP may have on the integrity of the European Sites, with respect to the conservation objectives of the sites and to their structure and function. EC guidance (2000, 2001) states that the integrity of a site involves its ecological functions and the decision as to whether it is adversely affected should focus on, and be limited to, the site's conservation objectives.

Following on from the Screening for AA, (see **Section 5**), this section considers further and sets out the elements of the Draft RBMP that have potential to give rise to likely significant effects on European Sites. The potential effects have been assessed in the absence of any mitigation measures, and taking account of the precautionary principle.

It is noted that the Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures. Through iterative discussion during the preparation of the Draft RBMP, avoidance of impacts as a result of implementing the Draft RBMP has therefore been to the forefront of discussions with the DHPCLG.

The principle direct effect of the Draft RBMP relates to new or upgraded infrastructure which as a consequence of construction or poor siting, may lead to loss/reduction of habitat areas, disturbance to key species, habitat or species fragmentation, and reduction in species density. Although the overall goal of such infrastructure provision is the improvement of a key indicator of conservation value i.e. water quality, these other potential impacts cannot be ignored and must be considered through the environmental assessment processes in order to be fully understood and compliance conditions attached if appropriate through the planning process.

A second, and more significant direct effect of the Draft RBMP relates to whether it will be successful or unsuccessful in achieving its objectives, using the newly adopted catchment based approach and utilising a coordinated approach from stakeholders across the water sector. Failure of the RBMP to achieve it's objectives and level of ambition, specifically its prioritised objective for the 2018 – 2021 cycle of meeting specific water related objectives for protected areas, will have a significant direct effect for water dependent habitat and species under the Habitats and Birds Directives and their future prospects.

6.2 APPROACH TO ASSESSMENT

In line with the relevant guidance this stage of the Appropriate Assessment consists of three main steps:

- **Impact Prediction** - where the likely impacts of the Draft RBMP are examined. A source-pathway-receptor model has been used to assess potential for impact;

[11] Impacts considered include direct, indirect, short term, long term, temporary, permanent and cumulative.

- **Assessment of Effects** - where the effects of the Draft RBMP are assessed as to whether they have any adverse effects on the integrity of European Sites as defined by conservation objectives; and
- **Mitigation Measures** - where mitigation measures are identified to ameliorate any adverse effects on the integrity of any European Site.

6.3 IMPACT PREDICTION

As noted in **Chapter 3**, in considering the potential for impacts from implementation of the Draft RBMP, a "source –pathway-receptor" approach has been applied. The ***source*** relates to the Programme of Measures outlined in the Draft RBMP which have the potential to adversely impact European Sites e.g. infrastructural developments or upgrades. The ***pathways*** relates to how the Draft RBMP Programme of Measures can impact European Sites e.g. changes in land use, habitat loss/fragmentation, emissions to water, alterations to hydrological connections. The ***receptor*** is the Natura 2000 network, potentially including those transboundary sites for which there is a pathway of connectivity as a result of the implementation of the Draft RBMP.

6.3.1 Context for Impact Prediction

The development and implementation of the Draft RBMP itself is considered to be largely positive in terms of its impacts on the environment as it will facilitate improvement of a key indicator of conservation value i.e. water quality. The WFD characterisation approach has assessed the significant pressures on our water bodies, many of which are also threats and pressures to European Sites e.g. agriculture, forestry, peatlands and wastewater. Although the Draft RBMP will not be directly connected with or necessary to the management of European Sites, the potential for positive effects on European Sites is significant. While the AA process does not factor in positive benefits per se unlike the Environmental Impact Assessment process (the legislative test does not consider the balance of positive and negative effects), these benefits are outlined in the assessment here, given the nature and synergies desirables from close integration of the implementation processes for the Nature Directives and the WFD.

The main objective of the Draft RBMP is to ensure the required water quality improvements are achieved through a catchment based approach to water management, a co-ordinated approach from stakeholders across the water sector, and public engagement and participation in the development and implementation of plans. A clear environmental objective of the WFD is to achieve compliance with any standards and objectives as specified in Community legislation under which the individual protected areas have been established. Where more than one objective relates to a given water body, the most stringent will apply.

The linkages between the WFD and the Nature Directives have been outlined in a document published by the European Commission in 2011. The document states:

"*Any Natura 2000 site with water-dependent (ground- and/or surface water) Annex I habitat types or Annex II species under the Habitats Directive or with water-dependent bird species of Annex I or migratory bird species of the Birds Directive, and, where the presence of these species or habitats has been the reason for the designation of that protected areas, has to be considered for inclusion in the register of protected areas under WFD Article 6. These are summarised as "water-dependent Natura 2000 sites*".

"*In order to make Article 4.1(c) on protected areas operational there is a need to identify the water related requirements to achieve favourable conservation status of habitats and species dependent on water*"; the focus therefore is on those habitats and species dependent on water and on the water related requirements.

"*The objectives of the directives are closely related and special attention and coordination is needed where these directives are implemented in the same areas. The measures serving the BHD and the WFD objectives need to be included in the river basin management plans required under Article 13 and should also be included in the management plans of the Natura 2000 sites*."

The WFD does not change what Member States must achieve for the Nature Directives, but it provides a joint framework for the implementation of measures needed by the WFD and Nature Directives in water-dependent Natura 2000 sites. Both the WFD and BHD require the achievement of a high level target or goal.

6.3.2 Impact Identification

A summary of the main potential ecological impacts that could arise from the implementation of the Draft RBMP are presented below and are used in the impact prediction.

- **Habitat loss, destruction, fragmentation or degradation**: habitat loss or destruction is caused where there is complete removal of a habitat type, for example arising from the development of new infrastructure e.g. a waste water treatment plant, or a change of land use which alters the existing habitat e.g. afforestation. Habitat fragmentation results from the incremental loss of small patches of habitat within a larger landscape e.g. through piping of small streams on agricultural land. Fragmentation can also result from impediments to the natural movements of species. This is relevant where important corridors for movement or migration are disrupted e.g. migration routes for lamprey species or Atlantic Salmon along river corridors are obstructed by hydropower infrastructure. In the case of the Draft RBMP, one of the priorities for the 2nd cycle RBMP is to improve our knowledge of barriers and determine the scale of the pressure. Habitat degradation results in the diminishment of habitat quality and a loss of important habitat functions. It can arise from the introduction of invasive species, toxic contamination or physical alteration (e.g. arising from poor management during construction and subsequent operation of new infrastructure);
- **Alterations to water quality and/or water movement**: This is relevant where there could be an impact on the hydrological/hydrogeological connection to a European Site or on water quality. This could be via point source or diffuse pollution from infrastructural developments, changes to water quality via eutrophication/acidification as a result of emissions to water, or via infrastructural developments that alter surface or subsurface water flow. In terms of potential for alteration of water quality, the impact(s) may be in-situ or ex-situ (i.e. downstream and outside the immediate area) and can include the release of suspended solids, increased acidification/eutrophication as a result of emissions to water and siting of infrastructure.
- **Disturbance to habitats/species**: Disturbance to habitats/species within a European Site is likely to increase where there is an increase in activity or noise levels from developments within or adjacent to those sites. It is particularly important that known sensitive areas, such as those supporting breeding birds, otter, salmonids and others are taken into consideration during the investigation/feasibility or design stage of any infrastructure prior to approval.

- **In-combination impacts**: A series of individually modest impacts may 'in combination' produce a significant impact. The underlying intention of this in-combination provision is to take account of combined impacts, and these will often only occur over time. In that context, one must consider plans or projects which are completed; in preparation; or approved but uncompleted. Where there is a series of small, but potentially adverse impacts occurring within or adjacent to a European Site, consideration should be made as to their combined impacts.

6.3.3 Impact Prediction

In line with the methodology for impact prediction outlined in **Section 3.5**, the main impacts that could arise from the various aspects of the Draft RBMP are summarised in **Table 6-1** and discussed below. In-combination impacts are assessed separately in **Section 6.5**.

Table 6-1 Main Ecological Impacts Associated with the RBMP

Impact Source	Impact Identification	Impact Prediction
Construction, upgrade and operation of new Waste Water Treatment and Water Treatment Infrastructure	▪ Habitat loss or destruction; ▪ Habitat fragmentation or degradation; ▪ Alterations to water quality and/or water movement; ▪ Disturbance to habitats/species.	▪ Land use changes as a result of construction and operation of water infrastructure. Direct and permanent in nature. ▪ Construction related impacts including changes to water quality, disturbance to habitats/species. Indirect and short term in nature.
Failure to achieve planned water quality outcomes	▪ Static or declining water quality with direct effects on water dependent habitats and species which require good or high status ▪ Habitat loss or destruction; ▪ Alterations to water quality and/or water movement; ▪ Disturbance to habitats/species	▪ Continued decline of sensitive species as a result of declining water quality. Direct and potentially permanent in nature. ▪ Continued decline in habitat quality within water dependent habitats. Direct and long-term effects.
Failure to ensure coordination and integrated implementation of measures	▪ Static or declining water quality with direct effects on water dependent habitats and species which require good or high status ▪ Habitat loss or destruction; ▪ Alterations to water quality and/or water movement; ▪ Disturbance to habitats/species	▪ Continued decline of sensitive species as a result of declining water quality. Direct and potentially permanent in nature. ▪ Continued decline in habitat quality within water dependent habitats. Direct and long-term effects.

6.4 ASSESSMENT OF EFFECTS OF DRAFT RBMP

Article 6 of the Habitats Directive states 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 of the site in view of the site's conservation objectives.*

The impact prediction and assessment of potential effects on the Natura 2000 network from the Draft RBMP has considered the integrity of the sites, the qualifying features of the relevant sites and their conservation objectives. The assessment has considered direct, indirect/secondary and cumulative/synergistic impacts and the likelihood of this impact occurring given current scientific knowledge and understanding of the receptors and pressures and threats on them. Given however that the Draft Plan sets out measures at a national level, which will require further consideration by regional local authority structures in order to determine local implementation of measures, it is not possible to undertake a detailed site specific assessment of the measures proposed. Therefore, the assessment has focused on the measures in the plan as high level measures and principal actions, and it is acknowledged that there is more detailed planning which will be undertaken throughout 2017, which will also be informed by the 6 month consultation process and submissions received. This assessment is presented in the following sections.

6.4.1 Assessment of Measures to Protect and Improve Water Bodies

The second cycle RBMP aims to build on the progress made in the first cycle, based on the implementation of key measures such as the licencing of urban waste water discharges and associated investment in urban waste water treatment and the implementation of the Nitrates Action Programme. It is acknowledged in the Draft RBMP that "*the development and implementation of supporting measures during the first cycle was not sufficiently progressed*[12]". The significant pressures on Ireland's "at risk" waters has been determined and classified into 14 categories (as per **Table 5-1**). The main measures are presented in **Table 6-2** to **Table 6-11** below, which are extracted from Section 7 and Section 8 of the Draft RBMP.

The Draft RBMP presents information on what progress is envisaged across the river basin district as a result of the measures while also outlining how more local, catchment and water body specific supporting measures will be developed and implemented. Sections 7 and 8 of the Draft RBMP should be read in conjunction with the discussion, assessment and proposed mitigation measures presented below for a complete understanding, however the following pertinent points should be born in mind:

- Nationally, 55% of river water bodies, 46% of lakes, 32% of transitional waters and 76% of groundwaters are achieving good or high status. For groundwater, 91% are at good status. Nationally the number of monitored river water bodies and lakes at good or high status appears to have declined in the period 2013 – 2015 by 3%, since the 2007 – 2009 monitoring period. There is also an underlying trend of improvement and dis-improvement across monitored river water bodies and lakes since 2009.

[12] Executive Summary.

- For SACs with water dependency, around 60% of river water bodies and almost 70% of lakes achieved their required status. However, the situation for SACs in transitional waters was less positive – with 37% of such areas meeting their required standards of good status.

- Currently, 1,945 water bodies are classified as not at risk, 1,515 are classified as at risk, with the remainder requiring further investigation. The characterisation process takes into account wider water quality considerations, including those for SACs and SPAs.

- For the 1,360 river and lake water bodies "at risk" of not meeting their objectives, the significant pressures impacting on them include agriculture (64%), urban waste water (22%), hydromorphology (19%), forestry (16%), domestic waste water (12%), peat extractive industry (10%) and urban run-off (10%). For the risk river and lake water bodies, 47% of them are subject to a single significant pressure, with the remaining 53% subject to more than one significant pressure.

- The priorities of this Draft RBMP are to ensure full compliance with relevant EU legislation; prevent deterioration; meet the objectives for protected areas; protect high status waters and implement targeted actions and pilot schemes (minimum of 30) in focus sub-catchments targeting water bodies close to their objectives and addressing more complex issues which will build knowledge for the third cycle.

- The process of selecting water bodies to be targeted for action through supporting measures will be driven at regional and local level through local authority structures. The prioritisation of water bodies will take place through 5 regional committees, each chaired by a local authority Chief Executive Officer. This prioritisation will use the EPA catchment assessments as a starting point, with the prioritisation of areas and actions to be agreed with relevant stakeholders based on wider considerations of impacts and feasibility.

Table 6-2 Rural diffuse and point source pollution

Rural Diffuse and Point Source Pollution Measures	
Implementation of requirements under existing directives:	
R1	Existing high level measures, namely, (i) nitrates regulations, (ii) domestic waste water treatment regulations, (iii) pesticides regulations; and (iv) agriculture environmental impact assessment regulations will continue to form a key part of the actions over the second cycle
R2	The integrated Governmental approach to enforcement of the nitrates regulations will be maintained and strengthened, and the interagency/inter-departmental Water Quality and Agriculture working group will ensure increased targeting of inspections by Local Authorities based on water quality results and the outputs of the characterisation process.
R3	In developing the 2018-21 National Inspections Plan for domestic waste water systems we will use the outputs of catchment characterisation to further improve the existing risk based approach set out in the current 2015-17 plan.
Continued implementation and further targeting of RDP Agri-environment schemes:	
R4	Under the RDP, the GLAS Scheme, with a budget of €1.4bn for the period 2014-2020 will see 50,000 farmers participating and implementing actions to improve the rural environment, including actions to improve water quality. The scheme prioritises vulnerable and high status catchments, and has a strong focus on ensuring farmers understand the environmental benefits of their actions. Also under the RDP, the TAMS scheme will facilitate total investment of around €500m-600m for better management and storage of animal manures,

Rural Diffuse and Point Source Pollution Measures	
	including more efficient spreading equipment. The 'targeting' of these agri-environmental schemes and interventions rolled out by DAFM will continue and respond to emerging knowledge and evidence (such as catchment characterisation).
Adoption of best environmental practice through knowledge transfer:	
R5	A joint industry/farmer/government forum, initiated by the Irish Dairy Industry Association, will drive the development and roll out of a targeted knowledge transfer programme to effectively deliver the key learning's from the Agricultural Catchments Programme to dairy farmers. It is envisaged that this will consist of both co-operative led farm pilot programmes and wider promotion programmes for nutrient management and management of farm pollution point sources. It will be part of the evolution of the existing Origin Green scheme, promote the sustainable development of the sector, and provide benefits in terms of economic viability, water quality and climate impact.
R6	In addition, and to promote the adoption of best environmental practice across different sectors of agriculture, €100m has been allocated from the RDP for a knowledge transfer programme with the purpose of up-skilling farmers and agricultural advisors. Over the lifetime of the RDP, this programme will roll out professional advisory and knowledge transfer services to around 27,000 farmers across all sectors on a voluntary basis. Farmers will receive compensation for participating in targeted knowledge transfer groups and the professional agricultural advisors will be trained in facilitating such groups and will also receive compensation for facilitating groups. One of the core requirements for participants in the knowledge transfer measure will be the completion of a farm improvement plan which includes a sustainable management plan.
R7	To further support good nutrient management across the entire country, an on-line nutrient management planning (NMP) system has been launched by Teagasc and made available to all Farm Advisory System (FAS) approved planners. Use of this system will be mandatory for farmers in GLAS and for derogation farmers – accounting for almost 60,000 farmers.
Monitoring sectoral changes and modelling water quality impacts:	
R8	It is accepted that Ireland faces significant challenges in meeting water quality targets while increasing production in the agricultural sector, and a key recommendation of the Food Wise 2025 strategy is the need to monitor the environmental impacts of the strategy. DAFM will work closely with relevant agencies to ensure this monitoring takes place. In particular the ACP programme will model and monitor the impacts of agricultural development under Food Wise 2025 in specific catchments. Where necessary, the measures and interventions set out in this section will be focussed on areas of potential emerging pressures on water quality. New targeted initiatives will be developed where necessary to ensure that the sustainability objectives of Food Wise 2025 are met.

Discussion
The catchment characterisation process found agriculture to be a significant pressure in approximately 67% of 'at risk' waterbodies. Excess nutrients, chemicals such as pesticides as well as sediment loss due to poor land management have all been identified as likely pressures in certain waterbodies. Domestic waste water treatment systems were also identified as a further significant pressure in a rural context, with 13% of at risk waterbodies impacted by this pressure. As such, the proposed set of measures for rural diffuse and point source pollution are critical to the overall success of the Draft RBMP and to achieving the level of ambition as outlined. Primary responsibility for enforcement of the Nitrates Regulations lies with the Local Authorities. Local Authorities undertake 2,000 inspections each year. Compliance rates are almost 70% with the majority of non-compliance issues reported as relating to management of the farmyard.

Ireland also operates a nitrates derogation which allows for an increase in the general stocking limit of 170kg N per hectare, where a Member state has agreed its Nitrates Action Programme with the EU Commission and can demonstrate compliance with specific conditions. It is only available to grassland farms and is subject to soil sampling, the preparation of a nutrient management plan and annual submission of fertiliser records. On the basis of on-farm inspections undertaken by DAFM, the levels of compliance on derogation farms are higher than on non-derogation farms - in the region of 85-90%.

A Farm Advisory Scheme advises farmers on meeting the cross compliance obligations and to help farmers avoid financial reductions under cross compliance in respect of SMRs and GAEC[13].

Impact Assessment

Measure R1

- Under the Basic Payment Scheme, payments are linked to compliance with environmental and land management standards. To receive a payment, a farmer has to adhere to a variety of regulations on the environment, public health, animal health, plant health, animal welfare and land maintenance. This system is known as Cross Compliance. The regulations relevant are set out in 13 Statutory Management Requirements (SMRs) and 7 Good Agricultural and Environmental condition (GAEC) standards, which include SMR1 (protection of water against pollution caused by nitrates), SMR2 (conservation of wild birds) and 3 (conservation of natural habitats and of wild flora and fauna). The Nitrates Regulations set out requirements which all farmers are obliged to adhere to and are applied on a whole territory basis, with some variation built in by design for storage periods for livestock manures. While the legislation is already in place, the primary issue with this measure relates to ongoing implementation and compliance. Resources to carry out compliance inspections remains a significant constraint on achieving better compliance standards. It is acknowledged that the current Nitrates National Action Programme will expire at the end of 2017. A review of the programme has been commenced by the Minister for Housing, Planning, Community and Local Government including a public consultation phase to begin in early 2017. A new programme is expected to be put in place by early 2018.

- Consideration should be given to all farm inspections being undertaken by DAFM directly or through a dedicated agricultural inspections team, with DAFM cross reporting pollution incidences to Local Authorities to do follow up water quality investigative assessments. This would ensure better implementation of the Nitrates Regulations by qualified inspectors, a whole farm approach (not predominately focused on farmyards), consistency in the quality and approach towards inspections, and consistency in penalties administered for non-compliance.

- Where a farm has a derogation, and is within or close to a European site, a potential risk to the favourable conservation status objective of those sites may arise, dependent on the catchment characteristics. Ireland's derogation allowance is subject to current and ongoing negotiations as part of the Nitrates Action Programme (NAP). While these negotiations will endeavour to achieve rigorously managed nutrient usage on high productivity farms, cognisance must also be given of catchment sensitivities and broader environmental objectives to ensure that Ireland does not impinge on its Habitats and Birds Directive obligations.

13 https://www.agriculture.gov.ie/media/migration/farmingschemesandpayments/crosscompliance/CrossComplianceHandbook130916.pdf

- Under the Environmental Impact Assessment (EIA)(Agriculture) Regulations, S.I. 456 of 2011, a consent process has been established with regard to three activities (i) restructuring of rural land holdings (ii) commencing to use uncultivated land or semi-natural areas for intensive agriculture and (iii) land drainage works on lands used for agriculture. Part 4 Regulation 9 paragraph (1)(c) states that if it is in the opinion of the Minister, that an activity is likely to have a significant effect on a European site, a Natura Impact Statement is required to be submitted with the application to inform the Appropriate Assessment (to be conducted by the Minister) to consider the potential impacts of the activities in combination with other plans and projects on the conservation objectives of any European site. DAFM screen in relation to this assessment.

Measure R2

- See comment above on inspections.
- Targeting of inspections based on the outcomes of the characterisation process will ensure a transparent risk based approach towards the selection of water bodies for farm inspections is undertaken. As the characterisation process has also included characterisation of protected areas (SACs and SPAs), they can also be targeted for water quality improvements in a prioritised manner. Consideration should be given to the prioritisation of inspections being undertaken on a national basis rather than on a county by county basis in order to target problem areas nationally, and to concentrate resources where most required.

Measures R3

The risk based approach towards the organisation of inspections of DWWTS is based on the hydrological and hydrogeological settings present in Ireland and research. The ranking outcome calculates the concentration of two pollutants – MRP and nitrate. This is the main basis, however sensitive receptors are now also taken into account e.g. the 2015 – 2017 inspection plan now includes for bathing waters, high status rivers, high status lake catchments and contributory catchments of shellfish areas (up to 20km). Some SAC / SPA sites will be targeted through this approach. Measures are bound to bring positive outcomes for SACs/SPAs particularly in high status catchments and where overlap with shellfish area catchments occurs. Consideration should be given to the formal inclusion of European Sites as sensitive receptors, particularly for the freshwater pearl mussel and lake habitats during the preparation of the third National Inspection Plan in 2017, and in consultation with NPWS.

Measure R4

The targeted nature of the GLAS and TAMS schemes are to be welcomed. Measures for storage of livestock manures, coupled with periods where application of fertiliser to land is prohibited are important measures for the protection of water quality. Inspections are again critical to ensure that tanks are both located and built appropriately and are also being operated appropriately where grants have been secured. Improved accountability in this regard would increase the environmental benefits associated with the grant scheme. While the grants have increased investment in storage, the measure does not address the quantity of material, nor will it reduce net P content of slurry *per se*, only the timing of disposal and the temporal risks to surface waters. This risk needs to be quantified in the context of the closed period, its effectiveness, and the impacts to water quality of significant spreading of slurry immediately following the closed period. The TAMS scheme will allow for investment in better management and storage of animal manures, however this by itself, will not protect water quality. Coupled with the proposed more efficient spreading equipment and lessons learnt through the ACP programme e.g. changing the timing of slurry application to better match the peak growing season and thus enhancing nutrient uptake and limiting losses to water, will in combination, facilitate reductions in losses of nitrogen and phosphorus to water.

Measure R5

While this measure is welcomed, its audience is narrowed to dairy farmers. It is unclear, how other farmers will be targeted for a similar knowledge transfer programme. While dairy farmers tend to have the highest potential to pollute, upon inspection, they have the highest rate of compliance with regulation – 85-90%. It is however acknowledged that irrespective of this, there are challenges where e.g. dairy farms are sited on poorly draining soils. Dairy farms are also likely to have the greatest increase in dairy cow numbers as a result of Food Wise 2025 and therefore will need to be monitored closely. The aim of Measure R5 is to target the dairy industry in particular, with learnings from extensive catchment scale experiments which have provided an agri-environmental baseline of agricultural activities relative to water quality responses over the last WFD cycle. With the likelihood of intensification in dairy farming to satisfy targets in Food Wise 2025, a robust and tested evidence base will significantly improve outcomes in terms of water quality. Effective transfer of knowledge is key to improving environmental practices in the farming community, building on some of the positive regulatory outcomes. Knowledge transfer will have a broadly positive impact for protected areas.

Measure R6

Measure R6 relates to the promotion and the adoption of best environmental practice across other sectors of agriculture, also through knowledge transfer. Evidence would suggest that there are already very strong groups that meet to share knowledge; however smaller/part-time farmers need to be encouraged better into schemes. Larger farmers tend to go to knowledge exchange events. Linking meetings/courses etc. to the basic farm payment with a requirement to attend (with proof of attendance) should be considered irrespective of farm size. In addition, record keeping needs to be improved for more than those included in the GLAS scheme or those with derogation farms (60,000 total) who will be targeted with the new on-line nutrient management planning system.

The knowledge transfer proposal is targeting approximately 20% of farmers. It is not clear how these farmers will be chosen or will elect to participate (stated that it is a voluntary programme). In addition, a further 60,000 GLAS and derogation farmers will also use this new system (adding a further 43% of farmers). A significant number of farmers will therefore be targeted, however, it is unclear in the plan, what if anything is planned for the remaining 37% of farmers.

Measure R7

Measure R7 is the final measure that relates to the adoption of best environmental practices through knowledge transfer. While Nutrient Management Plans are being prepared across the country, there are a number of challenges that this measure will begin to address. Recent audit results reported in the SEA for the National Waste Water Sludge Management Plan indicated that poor practices included:

- NMPs are not always reflective of real time land use at a given site and this can be further compounded by a lack of updates / revisions to the NMP;
- Operators are in some cases following the *Availability and Fate of Phosphorus in Biosolids when Applied to Agriculture* Guidance (2007) as opposed to relevant legislation S.I. 31/2014 which has superseded this guidance and the COGP and it appears from the audit that there is an over application of phosphorus to soils with certain P indices;
- NMPs are assuming that organics generated on the farm are spread evenly on the lands, which is unlikely to be the case and therefore certain fields are receiving a greater volume of nutrients than anticipated;
- NMPs are in general not making reference to potassium (K) requirements. While K is not a limiting nutrient and is not normally a nutrient associated with pollution it is a necessary macro nutrient for crop growth. This would suggest the NMPs presented are not complete and require the landowner to seek the advice of an agronomist to complete the NMP.

The development of an online system to standardise practices will increase both uptake and effectiveness across the sector and will increase availability to a larger proportion of the farming community. Mandatory use of the online system for GLAS and derogation farmers will also be a positive step. This is likely to result in indirect positive impacts for water quality and biodiversity.

Measure R8

This measure deals with the monitoring of sectoral changes and modelling of water quality impacts. It must be acknowledged that initiatives and policy such as Food Wise 2025 are not immediately compatible with achieving the environmental objectives set down under the WFD or related directives such as the Habitats and Birds Directives. Although SEA and AA of Food Wise 2025 has been undertaken, their remains concern over the real world impacts associated with intensification of agriculture in line with the targets proposed. While this measure acknowledges the importance of modelling and monitoring such impacts, it takes a shorter-term view. Monitoring will identify problems as they occur but will not forward plan to prevent the impacts in the first instance. This reactionary approach is likely to lead to a time-lag between impacts and mitigation. For example, while there are a number of options available to increase milk production, the most straight forward approach is to increase herd size which is likely to negatively impact on water quality as well as biodiversity flora and fauna, soils etc. in the short to medium term. Alternatives such as genetic selection require a significant set up process and may be much less attractive to farmers. For modelling to be effective it would need to be done far enough in advance.

Proposed Mitigation Measures / Recommendations:

In addition to the implementation of the mitigation measures as provided for in the SEA and AA for FW2025, the following mitigation is also recommended:

- Provision of additional manpower and personnel that possess the skillset for 'whole farm' inspections could greatly improve compliance levels with the nitrates regulations;
- Investigate ways to maximise resources in relation to inspections and audits, such as the suggested targeting of inspections based on the characterisation process outcomes, and the prioritisation of inspections at a national level;
- There is a need for better education/knowledge transfer in relation to the spreading of manures;
- Consideration should be given to nationalising farm inspections. The current method of the Local Authority having responsibility may compromise inspections, particularly in the inspectors own community;
- It may be necessary to link participation in the knowledge transfer programme to the basic farm payment to encourage attendance. It would also be beneficial to encourage better record keeping in relation to farm practices;
- Presentation of clear and easy to use NMPs is needed to encourage uptake and implementation of plans;
- Farm advisors should be fully trained in the catchment characterisation process; how it was undertaken, outcomes, objectives and agricultural measures appropriate for different environmental settings;
- The ACP Programme should include a high status catchment, and also an SAC / SPA catchment to examine the additional water related requirements which may be required and inform measures for protected areas, and
- Consideration should be given to the inclusion of European Sites as sensitive receptors into future DWWTS Inspection Plans.

Table 6-3 Urban Waste Water and Urban Run Off

Urban Waste Water and Urban Run-off Measures	
UWW1	EPA will continue to authorise and regulate waste water discharges from urban areas.
UWW2	Compliance with the requirements of the UWWTD and EPA discharge licence Emission Limit Values will be achieved through the implementation of the Irish Water Business Plan and associated Irish Water Investment Programme.
UWW3	Over the period 2017-2021 Irish Water plan to invest approximately €1.7bn in wastewater projects, programmes and asset maintenance, of which approximately €880m is planned for major waste water treatment projects and approximately €350m for capital investment in collection systems. This investment will result in 105 new or upgraded treatment plants in agglomerations or urban areas and works on collection networks in 41 areas.
UWW4	In addition to the above, Drainage Area Plans (DAPs) for waste water collection systems will be completed for 44 agglomerations by 2021, with the prioritisation of plans based on compliance with the UWWTD and meeting other environmental objectives.
UWW5	Irish Water will continue to develop and implement best operational practice across all of their assets, including developing and implementing Standard Operating Practices for all WWTPs, developing a full asset register, and completing a review of treatment plant capacities.
UWW6	Irish Water will commence development of their Wastewater Compliance Strategy in 2017. This will build on existing plans, projects and programmes and provide a long term strategy for ensuring compliance with the requirements of the UWWTD and meeting the requirements of river basin management plans in a cost effective manner.
UWW7	The outcomes of the EPA review of nutrient sensitive areas will be implemented. Waste water discharges into the catchments of newly identified nutrient sensitive areas will be subject to the relevant requirements of the UWWTD.
UWW8	Expenditure of €12 million, targeted at smaller plants causing significant pressures, has been included in the current Irish Water Investment Plan 2017-2021.
UWW9	There will be ongoing research and innovation in the areas of urban waste water management, funded at both national and European level.

Discussion

The Urban Waste Water Treatment Directive (91/271/EEC) (UWWTD) dictates the requirements for collection, treatment and discharge of urban waste water to a satisfactory standard. The purpose of the directive is to protect the environment from any negative impacts associated with waste water.

Some key findings of the 2015 Urban Waste Water Report[14] regarding effluent quality in Ireland include that 51% of the national waste water load (by population equivalent) was compliant with basic quality standards in 2015, compared to an EU compliance rate of 92%. Similarly, 25% of the national waste water load that was discharged into nutrient sensitive areas was compliant with the additional nutrient quality standards specific to these areas. In relation to large urban areas, 83% were fully compliant with the quality standards set out in the UWWTD. Regarding waste water infrastructure, there are 43 areas where waste water is discharged untreated into Ireland's surface waters, in addition to 10 areas where effluent is discharged following only primary treatment.

All discharges to the aquatic environment from sewerage systems owned, managed and operated by

[14] EPA, 2015. *Urban Waste Water Treatment in 2015*. Environmental Protection Agency, Wexford.

Irish Water require a waste water discharge licence or certificate of authorisation from the EPA. The EPA cannot grant an authorisation for a waste water discharge where it "excludes or compromises the achievement of the objectives established for protected species and natural habitats in the case of European Sites where the maintenance or improvement of the status of water is an important factor in their protection …." (Part II of WW Discharge (Authorisation) Regulations 2007).

The EPA, via screening of applications, determines whether a Screening for AA is required from the applicant. In this regard, the conservation objectives of a site, are afforded due consideration and assessment. The Irish Water Capital Investment Programme is targeting areas where water quality compliance is an issue e.g. Dublin Bay and Cork Harbour (IW CIP 2014 - 2016) and any improvements will likely have a knock-on positive benefit for water dependent habitats and species. Infrastructural measures will continue to need Screening for AA and potentially Stage 2 AA at the project level, to be determined via the normal statutory / planning processes. In addition, Irish Water published a 25 year Water Services Strategic Plan (WSSP) in October 2015, which was accompanied by an SEA and a Natura Impact Statement.

Impact Assessment:

Measure UWW1 relates to the regulation of waste water discharges through licensing or certification of all discharges. A licence is required if the population equivalent served by the plant is >500, whilst a certificate of authorisation (CoA) is required for sub-threshold population equivalents (<500). Licence conditions may include stringent measures in order to meet the objectives of the River Basin Management Plans, with the responsibility for compliance falling to Irish Water. This will result in a positive benefit for biodiversity subject to appropriate siting conditions and appropriate discharge limits for sensitive catchments such as those for the freshwater pearl mussel and certain lake habitat types.

Measures UWW2 and **UWW3** are linked measures. Together, they relate to investment by Irish Water through the Irish Water Business Plan and associated Irish Water Investment Programme in order to meet the minimum requirements of the UWWTD and comply with EPA discharge licence Emission Limit Values. It will involve investment in wastewater projects, programmes and asset maintenance. These improvements will have a positive impact through increasing both the effectiveness of existing treatment and increasing the capacity for adequate treatment through additional WWTP infrastructure. There is potential for negative impacts in the short-term on biodiversity when construction is underway, therefore site specific mitigation is required, as established through the appropriate assessment process. However the provision of additional capacity for the treatment of urban waste water and improving the efficiency of existing treatment will also result in direct long-term positive impacts for biodiversity and water quality. It is also a possibility that upgrades would result in more effluent discharged which would have to be considered based on the sensitivity of the receiving waters and may be subject to Screening for Appropriate Assessment even if staying within an existing licensed limit. These local impacts are best addressed by development of siting criteria to guide land use planning around existing facilities in the first instance and also tailored conditions applied on a site by site basis through the planning and regulatory system.

Measure UWW4 relates to Drainage Area Plans (DAPs) for wastewater collection systems which are currently planned for 44 agglomerations over the period to 2021. The purpose of a DAP is to assess the performance of the sewerage network against specific criteria (e.g. hydraulic, structural, operational and environmental performance, etc.) and also to consider improvement options. These plans will assist Irish Water in their investment planning to meet regulatory and customer service objectives. Problems associated with the drainage network can give rise to a range of catchment problems including flooding and the routing of flood flows, polluting CSOs, in-sewer silt build up, catchment growth and land drainage issues. The application of this measure will have medium to long-term positive impacts in terms of the receiving environment including biodiversity and water quality. The development of drainage plans are also likely to result in indirect positive impacts in terms of flood management with

consequent positive effects for all receptors. Any upgrades or replacement works to the sewerage network may themselves result in temporary construction related impacts which will have to be considered on a project by project basis in line with Irish Water procedures and the requirements of the Planning and Development Act 2000 (as amended), and therefore may require a Screening for AA / AA.

One of the key challenges for wastewater management is that there are no national standard operating procedures (SOPs) in place for the collection, treatment and recovery / disposal of wastewater sludge. In the absence of SOPs, a range of practices have developed which introduce risk to the receiving environment. **Measure UWW5,** as with many of the other waste water measures relates to the benefits of having a single national water utility which, since its formation in 2014, has undertaken significant work to identify assets, audit processes and apply standard operating practices across the wastewater sector. This has included a review of the condition and capacity of the assets and a programme of investment. Key to this has been the development of a number of Tier II plans, building on the strategies identified in the Irish Water *Water Services Strategic Plan*.

Measure UWW5 is anticipated to have a positive impact for biodiversity in general as the SOPs will introduce additional oversight and accountability, standardise operations and raise compliance. Long-term positive impacts are anticipated for biodiversity and water quality. It is noted that the implementation of UWW5 should have regard to the SEA and AA already completed for a number of these Tier II plans e.g the National Wastewater Sludge Management Plan.

UWW6 relates to developments of the Irish Water Wastewater Compliance Strategy in 2017, the aim of which is to build on the plans, projects and programmes already in place and to raise the level of compliance in terms of wastewater. The EPA carry out annual reporting on the quality of urban waste water discharged from cities, towns and urban communities. In its most recent report on Urban Waste Water Treatment in 2015, it reviewed the performance of 500 urban waste water schemes, assessing their compliance with the requirements of the Urban Waste Water Treatment Directive. A number of priorities were identified including discharge of raw sewage, poor bathing water quality, impacts on the freshwater pearl mussel, and failure to meet mandatory treatment standards. These issues and others will be addressed by the proposed Wastewater Compliance Strategy.

While the measure relates to the development of a strategy, it is the first step in mitigating the issues. As such it is likely to give rise to indirect positive impacts for biodiversity. As with other measures that may give rise to the need for new or upgraded infrastructure, there is the potential for indirect negative impacts from siting and construction of such infrastructure however, careful siting and application of suitable siting criteria will offset such local impacts. Project specific screening for AA / AA may be required.

EU member states are required under the Urban Waste Water Treatment Directive to identify nutrient sensitive areas. These have been defined as 'natural freshwater lakes, other freshwater bodies, estuaries and coastal waters which are found to be eutrophic or which in the near future may become eutrophic if protective action is not taken'. Assessments are carried out on waters downstream of urban wastewater discharges from agglomerations above a population equivalent (PE) of 10,000. The EPA recently carried out a review of nutrient sensitive areas. 72 waste water discharges with PE above 10,000 were identified and waters downstream assessed. Of the 72 agglomerations, 47 were identified as having areas downstream showing evidence of nutrient sensitivity. **UWW7** relates to increasing the number of areas that are subject to the requirement for more stringent treatment as laid down in the UWWTD due to nutrient sensitivity. This will have a direct positive impact for water quality, whilst also being positive for biodiversity. However there is potential for negative impacts in relation to the appropriate siting of new infrastructure.

It is recognised in the draft RBMP that in some instances the performance of smaller plants, which are subject to certificates of authorisation, can be the cause of significant pressures in water bodies which

have been prioritised for action in this cycle of the RBMP. To address this, **UWW8** commits expenditure of €12 million, targeted at such plants through the current Irish Water Investment Plan 2017-2021. This investment is anticipated to bring medium to long-term positive impacts to biodiversity. In many cases these subthreshold WWTP are not providing adequate treatment of waste water, with some comprising a septic tank or series of septic tanks which may already have exceeded capacity. Irrespective of their capacity, ineffective treatment at these smaller wastewater treatment facilities is a significant cause for concern for the surface waters to which they discharge. The improvements proposed under UWW8 will have a positive impact through increasing both the effectiveness of existing treatment as well as increasing the capacity for adequate treatment through additional WWTP infrastructure. Some of the infrastructure relating to this measure will be specifically targeted at protected areas (e.g. the top 8 FPM catchments), capturing plants that may not otherwise be listed as part of the investment programme due to their size. As with other measures where new or upgraded infrastructure may be required, there is potential for localised impacts associated with the siting and operation of any new infrastructure similar to those outlined under UWW2 and UWW3 above. These local impacts are best addressed by development of siting criteria to guide land use planning around existing facilities in the first instance and also tailored conditions applied on a site by site basis through the planning and regulatory system and should be subject to screening for AA / AA where required.

Research and innovation actions proposed in the draft RBMP, such as **UWW9**, are broadly positive in relation to potential impacts on the environment. They are primarily directed at data gathering, providing the tools, methodologies and data required to inform future actions through a combination of primary research and also with reference to best practice internationally. The specific action mentioned has limited direct impact on environmental receptors, however it is acknowledged that the scope of the research has the potential to impact on future actions which have the potential to increase the efficiency of existing waste water treatment or to develop new techniques that may have the capacity for better/more cost-effective treatments. There is therefore potential for indirect positive long-term impacts as a result of UWW9 however more clarity is needed on the national and EU sources of such funding to which this measure refers.

Proposed Mitigation Measures / Recommendations:

It is acknowledged that Irish Water has existing standard operating procedures which include procedures for the protection of the environment. These operating procedures include compliance with relevant legislation relating to SEA, AA, EIA as well as a wealth of other EU and national water legislation for plans and projects for which they are responsible. The mitigation measures suggested below in relation to implementation of the draft RBMP relate to areas for potential impact identified as part of this NIS for the draft RBMP and are presented in the context of strategic measures with have limited detail. It is acknowledged that some of the measures are already being applied.

- When siting new infrastructure, discharge points must be carefully considered in terms of the assimilative capacity of the receiving waters and accounting for all discharges to the water body. In addition, discharge points must be carefully considered in terms of proximity to European Sites, in particular freshwater pearl mussel catchments and oligotrophic and hard water lakes where high status environmental objectives are a requirement;
- The Wastewater Compliance Strategy (2017), which is currently undergoing screening for AA shall acknowledge the requirements of the draft RBMP;
- New infrastructure or the upgrade of existing infrastructure should be guided by the development of siting criteria to guide land use planning;
- If these alternatives involve the building of a new plant or an extension to an existing plant within or adjacent to an SAC / SPA, screening for AA / AA will be required as per the normal planning and environmental assessment processes.

Table 6-4 Forestry

Forestry Measures	
F1	Forestry Services will implement regulations, policies and requirements related to forestry which are being realigned with national water policy.
F2	Coillte, which owns over half of Ireland's forested lands, will continue to implement its integrated Environmental Risk Assessment approach to its forestry operations.
F3	Forestry Services will promote the uptake of native woodland establishment and conservation scheme and the environmental enhancement of forests scheme.
F4	With regard to the protection of freshwater pearl mussel population from forestry pressures, Forestry Services will develop and implement plans for the protection of designated populations of freshwater pearl mussel from forestry pressures; and complete the ongoing KerryLife project with project partners.
F5	Forestry Services will work with other stakeholders, in particular local authorities, to ensure the strategic deployment of forestry measures to protect high status waters and progress the other priorities set out in this river basin management plan.
F6	DAFM and EPA will continue to undertake forestry and water research to inform future forestry practices regarding the protection and enhancement of water quality.

Discussion

There is now much greater awareness of the negative impacts inappropriately sited forests and poorly managed forest operations can give rise to and the far reaching effects this can have, particularly in relation to biodiversity and water quality. Actions have been taken through other plans such as the Forestry Programme 2014-2020 to address some of the legacy issues. Planting and harvesting of trees can give rise to potential negative impacts for biodiversity including: release of nutrients/suspended solids to freshwater, estuarine and coastal habitats with direct negative impacts on biodiversity including highly sensitive species such as the Freshwater Pearl Mussel (FPM) and sensitive habitats such as fish spawning and nusery areas; eutrophication leading to deterioration of aquatic habitats; alteration of drainage patterns/water flow, leading to erosion and sedimentation of waterbodies; and alteration to existing ecosystem structure and functioning with potential to affect other species such as Hen Harriers which have specific habitat mosaic requirements. This is exacerbated by the need to provide supporting infrastructure such as forestry roads etc. in order to harvest the wood. This infrastructure can also lead to negative impacts on biodiversity as a result of habitat and species disturbance, deterioration of water quality etc.

Previously there was a requirement for mandatory replanting after felling, even in sensitive sites, which has led to legacy issues for water quality and biodiversity. This policy position has now changed and the Forest Service have confirmed that the mandatory replanting provision does not require 'like-for-like' replanting in terms of both species and footprint. The Forest Service now applies greater scope in terms of species diversification and open spaces, effectively enabling the restructuring of forests planted in decades past when environmental sensitivities were not prioritised.

Objective 1 of *Actions for Biodiversity 2011 – 2016* sought to mainstream biodiversity in the decision making process across all sectors. To this end, the interim review of implementation of these actions include the Forestry Act (Act No.31 of 2014) as a key achievement. The Act, once commenced, will replace the 1946 Forest Act. The Act:

- Sets out the specific role of the Minister of Agriculture, Food and the Marine in safeguarding the environment;
- Includes overarching provisions relating to the protection of the environment;
- Integrates the requirements and procedures under the EIA Directive, the Birds and Habitats Directives, and the Water Framework Directive;
- Creates greater flexibility to the Minister in terms of attaching environmental conditions to an approval or licence, and enforcing those conditions; and
- Enables the Minister to produce supplementary regulations, if needed to give effect to the principles and policies set down in the Act, under various headings, including "(y) protection of the environment, habitats and biodiversity".

The provisions of the Forestry Act 2014 will only come into effect, in whole or in part, as and when the Minister for Agriculture, Food and the Marine signs commencement orders for its various sections. The primary purpose of the Bill is to reform and update the legislative framework in relation to forestry and to support the development of a modern forest sector, which operates in accordance with good forest practice and with a view to the protection of the environment.

Impact Assessment:

Measure F1 relates to implementation of forestry policy and associated regulations. Forestry policy, through documents such as the Forestry Programme (and the draft Bioenergy Plan (in prep)) are seeking to increase forest cover from 11 to 18% over the coming years. One of the principle concerns of this increase relates to impacts to biodiversity. Typically commercial forestry is focussed on fast growing non-native species of trees which support a reduced biodiversity and have the capacity to alter soil and species dynamics. Planting of forests requires often significant alteration of drainage patterns in an area while the harvesting of the biomass is associated with release of suspended solids and acidification of adjacent watercourses.

The new Forestry Act 2014, which will supersede the older 1946 Act once commenced, will bring greater emphasis on environmental awareness.

A key aspect of the implementation of the Forestry Programme is the integrated *iForis* database which the Forest Service has developed. It is a digital mapping database tool that brings together many datasets and enables a greater consideration of environmental issues when assessing afforestation applications and over time may lead to the reduction of impacts associated with legacy forestry practices. All new applications over certain thresholds, and those within close proximity of / or within European Sites, that are now submitted for grant aiding or afforestation are subject to Screening for AA. The process is an integral first stage in whether individual projects are approved by the Forest Service. The Forest Service is also updating environmental guidance to take heed of ongoing improvements in knowledge and data acquisition. Measures detailed in Section 6.12.1 of the Forestry Programme 2014-2020 have been developed to mitigate for adverse environmental effects. The requirements of **F1** should result in long-term positive impacts for European sites.

Measure F2 relates to Coillte's use of Environment Risk Assessment (ERA) which is a major component of their Environmental Management System. The main components of the ERA have involved incorporating environmental protection into a GIS-based platform, whereby sensitive areas are automatically colour-coded and flagged to staff during activities. Automated spatial queries means sensitive sites have also been incorporated into Coillte's Forest Management System (FMS). Standard mitigation measures have also been introduced as part of the ERA, which streamlines administration for staff and displays only relevant site-specific measures for sensitive areas. These

aspects of the ERA are therefore considered to have broadly indirect positive impacts for all environmental receptors in the short, medium and long term.

Measure F3 acknowledges the need to encourage further uptake of native woodland establishment and conservation schemes and the environmental enhancement of forests scheme. It is noted that there are commitments in the Forestry Programme to plant 30% broadleaf cover with any new afforestation application and this is seen as positive. This action is anticipated to result in direct positive long-term impacts for biodiversity and water quality. It is however noted that active planning of how these patches of native woodland might connect to each other and to other linear corridors and stepping stones in the surrounding area is needed to prevent the development of isolated patches with limited value. Furthermore, there is also the potential for this forest cover to be directed to more marginal lands which are seen as low economic value but are often of high ecological value as they retain some degree of naturalness and may provide ecosystem services in the form of drainage, water filtration etc. This loss of habitat could result in loss of species and habitat diversity and potentially loss of ecosystem services.

Measure F4 addresses specific issues relating to the impact of forestry on Freshwater Pearl Mussel (FPM). There has been a considerable decline in species distribution and numbers of FPM in Ireland and across the EU in recent years. The NPWS Conservation Status Report (NPWS, 2013) states that FPM are widespread in Ireland, occurring in more than 160 rivers and a handful of associated lakes. The national population estimate is 10.99 million adult mussels, which some records suggest account for the bulk of European Stock, and represents a decline of 8% since 2007. In 2009, legislation was enacted to support the achievement of favourable conservation status for FPM - S.I. 291 of 2009 and NPWS developed 27 FPM Sub-basin Management Plans (draft) to address measures to halt the decline in the species. The potential for conflict with the FPM was clearly acknowledged in the Forestry Programme, and the Forest Service have committed to developing detailed management plans for forestry management within the eight priority FPM catchments and a single inclusive plan for all other remaining FPM catchments. These are not yet finalised but are undergoing both SEA and AA. The environmental assessments will assess the efficacy of as yet unspecified mitigation measures relative to the integrity of European Sites and the FMP. It is expected that the measures will further strengthen the protective measures already in place for the protection of watercourses and should contribute towards quantifiable improvements in water quality as well as reducing impacts upon water sensitive habitats and species including the FPM. The implementation of these plans and the completion of the KerryLife project should have long-term positive impacts for biodiversity and water quality. It is noted that the speed of roll-out of the measures in these plans is critical as the potential for cumulative effects with other related plans such as the Forestry Programme and the Bioenergy Plan could result in negative impacts in the short-term prior to the roll out of the FPM measures. It is also critical that these plans take a catchment approach as opposed to just focusing on a 6km zone around FPM populations (although strict measures are certainly required here to avoid direct impacts).

Measure F5 relates to the strategic deployment of a measure combining an undisturbed water setback and new native woodland to form permanent semi-natural landscape features. The features will be designed to deliver water-related ecosystem services, such as: reduction in sediment mobilisation and runoff into watercourses, interception of nutrient runoff into watercourses, bank stabilisation, food input into the aquatic ecosystem, shading / cooling, regulation of floodwater and mitigating acidification. This action would have direct positive impacts for biodiversity and water quality. A challenge will be to encourage landowners to see the value to wider ecosystem services.

Measure F6 relates to research to inform future forestry environmental practices. This measure is

predicted to be broadly positive as it is seeking to establish an evidence base on which to make informed decisions on future forestry practices. It is noted that a number of COFORD funded research projects/reports have already provided new information on environmental issues. New information and circulars have been issued which reflect changes in legislation and improved knowledge. Many of these have been included in the *Draft Environmental requirements for Afforestation: Water, Biodiversity, Archaeology and Landscape (11th April 2016)* (Forest Service - Department of Agriculture, Forestry and Marine, Dublin). Furthermore the Forest Service are presently in the process of updating much of their environmental guidance, to take on board recent developments in relation to regulation, research and changes in forest practices. The updated guidance will be consolidated as a single document to facilitate better knowledge transfer for landowners and afforestation applicants. This action is anticipated to result in indirect positive long-term impacts for European Sites.
Proposed Mitigation Measures / Recommendations:
• While the top 8 FPM catchments are being prioritised, the strategy for the remaining 19, remains unclear within the plan. This should be clarified in the final RBMP

Table 6-5 Peatlands

Peat Harvesting Measures	
PH1	The Minister for Housing, Planning, Community and Local Government intends to enact regulations in 2017 to (1) require the Environmental Protection Agency to carry out EIA for all existing and new large-scale peat extraction (>50ha) as part of its examination of IPC licence applications for the activity and (2) bringing smaller scale commercial peat harvesting under a new local authority licensing system incorporating EIA, as necessary.
PH2	The Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs will oversee the implementation of the Peatland Strategy, the principal aim of which is to provide a framework for determining and ensuring the most appropriate future use of cutover and cutaway bogs.
PH3	Bord na Mona will implement its Sustainability 2030 Strategy and Biodiversity Action Plan 2016-2021 which addresses the long-term rehabilitation of its cutaway bogs.
PH4	Bord na Mona, in conjunction with the EPA, will assess measures to mitigate the generation and impact of ammonia from their cutaway peatlands.

Discussion

Intact raised bogs, like all wetlands, play an important part in regulating water within a catchment and in maintaining water quality. Bog mosses, which are the main vegetation component of a healthy raised bog can hold 20 times their own weight in water and together with the peat mass, they help to filter contaminants and release 'clean' water. Bogs may fulfil an essential role as source areas for rivers (e.g. Liffey), especially in maintaining low flows during dry periods. Under certain geographical conditions, bogs can help to control the flow of water within a catchment, thus mitigating flooding downstream by reducing the speed at which water leaves the catchment area. However, the storage capacity of a bog is limited and depends on the composition of the top (living) layer of the bog and the quality and intactness of the bog margins. Peat cutting and associated drainage, and loss of vegetation, can increase the amount and speed of water leaving the bog. This water contains higher amounts of carbon and particulate organic carbon (brown water) and nitrogen than natural bog water due to erosion and to leaching of nutrients from the decomposing peat (Holden *et al.* 2004).

The intensity of peat destruction in the 20th century in Ireland has been significant, largely due to peat extraction and agricultural improvement, together with the associated drainage and burning related to these land-uses. Degraded and damaged bog sites look very different to an intact site in that they have a network of drains and ditches on and surrounding the site and the natural characteristics are generally severely affected. Water tables can be lower, consequently causing drying out and shrinkage of the whole bog and significant reductions in the area of the active peat-forming layer. The absence of this layer and associated natural vegetation generally contribute to increased run-off from the bog. The National Peatlands Strategy has acknowledged that peatlands play an important part in maintaining water quality as peatland management can influence the level, quantity and quality of water which in turn can negatively affect water dependant aquatic flora and fauna and increase the level of treatment of water required for drinking water.

Impact Assessment:

Given the breadth of negative impacts that can arise from peat harvesting including: siltation, deterioration in water quality, increased costs associated with drinking water treatment, modified flood regimes, changes to groundwater quality, quantity, changes to ecosystem structure and function and loss or disturbance to flora and fauna, **Measure PH1** is considered to be positive. The measure will further regularise peat extraction and ensure that sufficient oversight is given to the potential for significant environmental effects and that they are considered as part of the planning and environmental assessment processes. This is in line with the requirements of both the SEA and EIA directives. There is likely to be indirect long-term positive impacts for all receptors as issues are identified and mitigation can be applied. The requirements for AA in relation to existing and proposed regulation of peat extraction are currently addressed in existing legislation.

Measure PH2 acknowledges the clear links between peatlands management and water quality as required under the WFD. Run-off from peat harvesting can give rise to increased turbidity, reduced pH, release of aluminium, ammonia, iron, and mercury. There is undeniably a cross-section of stakeholders with registered interest in peatland management including turf-cutters, industry, NGOs, conservationists, state agencies and local residents. Prior to the Peatlands Strategy, there was no clear framework within which these competing interests could be addressed. The Strategy, which was subject to consultation [and was screened for SEA and AA] sets out generic areas or actions to inform other lower level plans. These include principles and actions in relation to better stewardship and specific management around high status sites and European designated sites. Those relating specifically to water quality are:

NPS P 29 Policies and decisions relating to the use of peatlands shall take full consideration of

potential impacts on water quality and the attainment by the State of mandatory water quality standards.

NPS A 26 An assessment shall be undertaken of the additional costs of treating drinking water arising from peatlands degradation and options proposed for reducing such costs through appropriate peatlands management.

It is anticipated that Measure PH2 will have indirect long-term positive effects on European Sites as it provides clarity on the actions and activities required to ensure better peatland management.

Measure PH3 relates to the implementation of the Bord na Mona Biodiversity Action Plan and Sustainability 2030 Strategy. Bord na Mona completed their first Biodiversity Action Plan in 2010 and it focussed on five key objectives: policy and governance; understanding the current baseline; developing methods to rehabilitate and restore peatlands; engaging with stakeholders; and a mechanism for updating the action plan. The updated strategy will build on the work already completed and it is anticipated that this will result in positive long-term impacts for biodiversity.

While the biodiversity action plan is focussed on the ecological aspects of the business, the 2030 sustainability strategy acknowledges Bord na Mona's commercial connection with the bogs. The strategy addresses the future following the announcement by Bord na Mona that by 2030 the company will complete its transition from energy peat into new sustainable businesses. The strategy acknowledges the huge land asset that Bord na Mona holds – 200,000 acres – and identifies the possible uses it may be put to once harvesting of peat for energy ceases. The strategy seeks a diverse portfolio including biomass, solar, landfill gas, wind and waste to energy. On the one hand, such proposals offer significant positive impacts in the medium to long-term. However, the suggested activities have significant potential to negatively impact on biodiversity receptors in themselves. It is recognised that this will be dependent on the proposed activity and proximity to sensitive receptors.

Waste activities for example have the potential to significantly impact on water and indirectly on biodiversity. Upstanding energy generation infrastructure such as wind farms present a significant collision risk for birds and similar for bats. Solar farms are a relatively new venture in Ireland but present issues in relation to glare, landscape and visual and land use change among others.

It is noted that this is not a statutory document and therefore it has not undergone any formal environmental assessment of the wider implications of the proposals contained within. Given the nature of the strategy, the significance of the land bank in question, the potential for cumulative impacts and the potential for impacts from peatlands on biodiversity, water quality etc., it is recommended that consideration is given to screening for SEA and AA.

The final **Measure PH4** requires that possible measures be developed to mitigate the generation of ammonium. There is evidence that high levels of ammonia are being released from peat extraction activities during the draining process and may be causing ecological impacts in receiving waterbodies and the EPA plans to investigate the background concentrations of ammonia in peatlands to determine if they can be a contributory factor in elevated ammonia concentrations in waterbodies. This improved evidence base will contribute to overall positive effects for biodiversity and water quality. No further detail is provided in the draft RBMP. In the absence of further detail it is not possible to provide further assessment of the proposed measures.

Proposed Mitigation Measures / Recommendations:
• Existing research on the mitigation of the generation of ammonium should be acknowledged in order to speed up the process of putting in place appropriate measures for existing extraction sites. In addition, the impacts of dissolved organic carbon and sedimentation in general, should also form part of the research remit. • Given the nature of the Bord na Mona Sustainability 2030 Strategy and the potential for impact from peatlands on water, biodiversity etc., it is recommended that consideration should be given to screening the strategy for AA.

Table 6-6 Aquatic and Riparian Invasive Alien Species

Measures to Protect Water Bodies from Invasive Alien Species (IAS)	
IAS.1	EU Regulation (1143/2014) on 'the prevention and management of the introduction and spread of invasive alien species' will be implemented, with overall responsibility resting with DAHRRGA, with many other actors required to ensure implementation.
IAS.2	Clear governance arrangements for managing aquatic IAS in Ireland, including the assignment of responsibilities and development of agreed co-ordination mechanisms, will be put in place. This work will continue to be led by DAHRRGA and will seek to promote cross-border co-operation on the issue.
IAS.3	DAHRRGA will also lead on the development of management plans for priority IAS, with priority given to high impact IAS were eradication or control is possible.
IAS.4	National guidelines for biosecurity, to prevent the introduction and spread of IAS and to mitigate their impacts, will be developed.
IAS.5	The relevant State bodies, in particular DAHRRGA/NPWS and IFI, and supported by LAWCO, will work to harness community and stakeholder involvement and support to ensure the long-term management and control of IAS.
IAS.6	EPA will continue to fund research on IAS including those impacting on the water environment.

Discussion

Invasive Alien Species has emerged as one of the key challenges facing EU biodiversity as well as presenting serious social and economic challenges. It is estimated that IAS have cost the EU over €12 billion / year for the last 20 years. At the EU level the need to control and eradicate IAS has been incorporated into the EU Biodiversity Stratey through Target 5 which states that *by 2020, IAS and their pathways are identified and prioritised, priority species are controlled or eradicated, and pathways are managed to prevent the introduction and establishment of new IAS.*

IAS negatively impact Irish biodiversity through competition, herbivory, predation, habitat alteration and introduction of parasites or pathogens and poses a risk to the genetic integrity of our native species. Terrestrial and aquatic habitats can be negatively affected, resulting in severe damage to conservation and economic interests, such as agriculture, fisheries, forestry and various recreational activities. Despite this some invasive aquatic plant species continue to be imported onto the island for sale in garden centres. Currently 37 species have been identified across the EU as a high priority for management, nine of these occur in Ireland and include freshwater species such as the Chinese mitten crab (*Eriocheir sinensis*), Curly waterweed (*Lagarosiphon major*), Floating pennywort (*Hydrocotyle ranunculoides*), Parrot's Feather (*Myriophyllum aquaticum*), and Ruddy duck (*Oxyura*

jamaicensis). The river basin public consultations on significant water management issues in 2015 identified IAS as a significant issue for water management.

Impact Assessment:

Measure IAS1 will see the implementation of EU Regulation (1143/2014), the purpose of which is to address the wide ranging impacts associated with IAS including impacts to native biodiversity and ecosystem services, human health and economics. Three types of interventions have been identified: prevention, early detection and rapid eradication, and management. The Regulation also includes special provisions to deal with the specific needs of pet owners, traders, breeders and other stakeholders. This action is anticipated to result in indirect positive long-term impacts for native aquatic, terrestrial and marine biodiversity.

Improved governance arrangements are proposed under **Measure IAS2**. It is recognised that the management and control of IAS is a complex area as it involves a cross section of stakeholders and introduces a transboundary dimension. Clear governance arrangements and coordination mechanisms across relevant public bodies offers many potential benefits including better use of resources, knowledge sharing; co-ordinated implementation; consistency of approaches and communications; ability to tackle high risk cases which may be occurring in several local authority areas etc. This would have indirect positive long-term impacts for biodiversity. Allied to Measure IAS2 is the commitment to develop guidelines on biosecurity under **Measure IAS4**. The development of such guidance and protocols is considered positive as it will provide clarity on what is expected of staff when carrying out duties in relation to water management and maintenance. It is noted that there are protocols in existence including those from Invasive Species Ireland and the IFI and it is not clear from the proposed measure what the role or focus of this additional public body developed guidance is intended to be. As a central repository for IAS information, the inclusion of such material on the Invasive Species Ireland website with links to the relevant public bodies would enhance opportunities to promote the use of these protocols more widely among other water users.

It is intended under **Measure IAS3** that NPWS, as part of DAHRRGA, would develop plans to specifically address the actions required in terms of prevention, early detection and rapid eradication, and management of the IAS. It is not clear from the measure if the plans will focus on all IAS with potential to reach Ireland or if it is to focus on the nine species already present on the island of Ireland. Particular attention is needed in terms of the additional risk posed in the medium to long term by climate change which may increase susceptibility for IAS going into the future. Early consideration of this should be part of any prevention strategy. It is noted that there has been some successes of note in relation to the control and eradication of IAS in recent times including eradication of the fish species chub (over the period 2006-2010) and significant reduction of the coverage of curly waterweed in Lough Corrib from 100ha to less than 20ha. However, in parallel to this has been a significant increase in the observation of plants such as Japanese Knotweed, and to a lesser extent, Himalayan balsam. This increased prevalence may be partly related to better identification and a wider knowledge base on the threats posed by the species for construction, land management etc. leading to more reporting. It is noted that the EU regulations do not include some of the most prevalent IAS in Ireland including Japanese knotweed, Himalayan Balsam and Giant Hogweed. Therefore, focussing on only the EU list may not adequately address the issues being experienced in Ireland at the present time.

There is recognition under **Measure IAS.5** that community and stakeholder involvement and support is essential to ensure the long-term sustainability of IAS projects. This is particularly important with regard to prevention and detection and aligns with the overall integrated catchment management approach proposed through the RBMP. Without clear commitment from local communities, national

stakeholders such as IFI, the National Biodiversity Data Center, NPWS and the Local Authority Water and Communities Office, IAS projects will not see success. A key feature of the measure is the inclusion of the IAS topic within the GLAS training programme with a view to increasing both advisor and farmer awareness and knowledge of the threats posed by invasive species. Such education initiatives have a significant role to play in changing behaviour and attitudes not only about IAS but water management generally. This measure will result in indirect positive long-term impacts for biodiversity.

Measure IAS.6 includes for EPA funded research on IAS. Increased funding will bring positive benefits as it will allow activities or research to be carried out which may otherwise not be done**.** The projects carried out under the funding will enhance IAS knowledge in relation to the areas of prevention, detection, eradication and management on a regional and national level which should bring associated environmental improvements.

Proposed Mitigation Measures / Recommendations:

- The list of 9 invasive species prioritised through Regulation (No. 1143/2014) on 'the prevention and management of the introduction and spread of invasive alien species' does not sufficiently reflect the threat from existing species in Ireland. This list should include further species of importance in an Irish context and chosen by an all-island IAS group.
- Recognition of the place of the Birds and Natural Habitats Regulations 2011 (as amended), in particular Regulation 49 (prohibition on introduction and dispersal of certain species) and 50 (prohibition on dealing with and keeping certain species) and the Third Schedule, should be included in the Draft RBMP.
- Enhanced co-operation between Public Authorities on IAS, should include those at the freshwater / marine interface e.g. Marine Institute, Sea Fisheries Protection Authority etc.
- Measure IAS.3 would benefit from clarity on how existing practices and protocols are to be integrated and who will have responsibility.

Table 6-7 The Physical Condition of the Water Environment

Hydromorphology Measures	
HYMO1	Existing regulations providing for EIA to (1) mitigate the impact of planned land-use changes on waters and (2) which reduce the threshold for exempted development threshold for drainage of wetlands from 20 hectares to 0.1 hectares will continue to be implemented.
HYMO2	The EPA will improve assessment methods and knowledge of the physical condition of surface waters, including; developing the Morphological Quality Index for Irish rivers and enhanced use of GIS for assessing lakes, transitional and coastal waters.
HYMO3	The EPA, with the support of other agencies, will also develop the evidence base regarding the link between physical integrity of water bodies and ecological status and defining appropriate environmental supporting conditions with regard to hydromorphology.
HYMO4	Mitigation measures incorporated in the OPW drainage maintenance programme will be applied for all such works.
HYMO5	IFI will lead a multi-stakeholder programme that will collect and collate data to support the development of an inventory of barriers to fish migration nationally.
HYMO6	The feasibility of implementing measures to improve fish migration in the Shannon

Hydromorphology Measures	
	catchment will be examined, with all relevant State bodies working co-operatively.
HYMO7	Four EPA research projects related to hydromorphology (SILTFLUX, COSAINT, DETECT and RECONNECT) will be completed and the outputs used to inform future actions to mitigate the impact of hydromorphological impacts.

Discussion

Varying levels of direct physical alteration to water bodies by humans has resulted in serious modification to ecosystems; however hydromorphology is an important contributor to maintaining healthy ecosystems. Physical modifications vary in their degree of alteration and include dams and reservoirs for energy generation and drinking water, weirs, river crossings and embankments, marine ports and coastal/flood defences. The ecological implications of these alterations have not always been fully considered, and in many cases the impacts are not seen directly at the alteration site, rather downstream through changes to volume, velocity of flow or changes in fluvial geomorphology (which affect the balance between flow and sediment supply). A direct impact may include physical barriers in streams which can impede fish migration whilst an indirect impact from the same barrier also limits the movement of sediment or can alter flow velocity, with knock on impacts for habitats downstream. Abnormally high siltation levels in particular are a cause for concern. Physical modifications can remove the natural pools and shallows that fish require and reduce the availability of suitable habitat.

Impact Assessment:

HYMO1 relates to the implementation of legislation on land-use changes and drainage of wetlands. In both cases direct positive benefits are anticipated for biodiversity.

HYMO2 relates to the improvement of assessment methods and increasing knowledge of the physical condition of surface waters. As a data gathering and modified assessment measure, it is anticipated to have positive impacts for all receptors as it will improve the evidence base on which decisions are to be made. It has become increasingly obvious that there is a need to change how hydromorphology is accounted for in terms of ecological evaluation and assessment. The EPA is developing the Morphological Quality Index (MQI) in an Irish context, with the aim of accounting for any shortfall with existing assessment methods such as the River Hydromorphological Assessment Technique (RHAT) technique. The MQI will provide a more robust assessment which will ultimately give greater insight into river hydromorphology, existing pressures that impact the hydromorphology of rivers and also how rivers respond to the pressures. There will also be improvements in how the physical condition of lakes, estuaries and coastal waters are assessed through a combination of GIS analysis and field surveys. Overall, this will be a positive measure, particularly if assessments include for the conservation objectives of protected species e.g. connectivity from estuary through to second order streams for salmon.

HYMO3 is a data gathering measure and as such it is anticipated to have positive impacts for all receptors as it will improve the evidence base on which decisions are to be made.

HYMO4 relates to the OPW drainage maintenance programme which is carried out on the network of arterially drainage channels. The maintenance programme contains mitigation measures that will be applied to approximately 2,000 km of channel annually, where maintenance work will be carried out on a given six-year cycle (11,500km). Key aspects of the measures applied include: Environmental Management Protocols and Standard Operating Procedures; the continued roll out of the Environmental River Enhancement Programme (EREP) in conjunction with IFI; training; ecological and environmental assessment; and monitoring. There is no statutory requirement under the Arterial Drainage Acts 1945 & 1995, for the production of a 'Plan' or Programme', for Arterial Drainage

Maintenance. However, an annual programme of maintenance is compiled to maintain the drainage watercourses which are prioritised based on the rate of deterioration and the risk arising. The majority of Arterial Drainage Maintenance works are on channel maintenance with an average channel requiring maintenance every four to six years. OPW are currently conducting an SEA for Arterial Drainage Maintenance Activities 2016-2021. The SEA/AA is being conducted on the 2016 - 2021 activities which is a six year snapshot of these ongoing repetitive type maintenance activities. The Scoping stage has been completed and the SEA process is currently at Environmental Report stage with public consultation to be carried out in Spring 2017. The 2016-2021 timescale has been adopted to facilitate coordination with the 2nd cycle River Basin Management Plan and the Catchment Flood Risk Assessment and Management Studies (CFRAMS) (on the basis of six year cycles under the WFD and Floods Directive).

HYMO5 relates to the development of a national inventory of barriers to fish migration by IFI. This will require significant work to collect and collate the data into a geo-referenced barriers inventory, as a recent IFI project documented over 600 barriers to river connectivity on the Nore river alone[15]. As with HYMO3 above, this is a data gathering measure and as such it is anticipated to have positive impacts for all receptors as it will improve the evidence base on which decisions are to be made. Water quality and fish life, are likely to experience positive medium to long-term direct impacts from changes which reduce the number or frequency of these barriers. A project level screening for appropriate assessment will be required to assess both the positive and negative effects of such barrier removal projects, in order to assess the overall benefits of removal.

HYMO6 relates to the feasibility of constructing a bypass channel to improve fish migration in the lower Shannon catchment. The River Shannon is a complex river system made more so by the many competing interests and a lack of an overall management body. Currently over 16 local authorities share a boundary with the river making coordinated measures difficult to achieve and increasing the potential for cumulative impact from abstractions, recreation, discharges etc. This measure targets the lower Shannon and focusses on the potential for construction of a bypass channel to improve fish migration. At this stage, and following recommendations from this AA (and SEA) assessment, it is proposed to first establish feasibility of such a measure, with particular reference to potential to impact on European Sites and protected species. While improvements to fish migration are to be welcomed and would give rise to medium to long-term positive impacts to certain fish species (salmon and eel in particular) and other species which may be dependant, it is noted that changes to current flow regimes may have unintended consequences for other biodiversity, flora and fauna, particularly when taken in combination with other pressures on the lower Shannon. Should the feasibility study determine the potential for such a project, a project specific screening for AA / AA would be required to determine potential for impacts on the Natura 2000 network.

HYMO7 relates to research projects which will be used as an evidence base to inform future actions to mitigate the impact of hydromorphological impacts. These projects will have direct positive benefits for biodiversity by improving the evidence base. The actions arising from the projects cannot be assessed at this stage but it is recommended that they be subject to screening for AA prior to their implementation.

Proposed Mitigation Measures / Recommendations:

- Improved hydromorphology assessment tools should include for the hydromorphological requirements supporting the favourable conservation status of water dependent species e.g. salmon, lamprey.For the OPW Arterial Drainage Maintenance activities (HYMO4), it is

[15] Gargan, P. G., Roche, W. K., Keane, S., King, J. J., Cullagh, A., Mills, P. and O' Keeffe, J. (2011) *Comparison of field- and GIS-based assessments of barriers to Atlantic salmon migration: a case study in the Nore Catchment, Republic of Ireland*. Journal of Applied Ichthyology 27 (Suppl. 3) (2011), 66–72.

recommended that the environmental management practices are reviewed and updated during this six year cycle to ensure their effectiveness and that they continue to evolve from lessons learned.

- The Environmental River Enhancement Programme should be reviewed, and fully resourced in order to counteract potential negative impacts from flood relief schemes, arterial drainage maintenance programmes and flood risk management plans.

Table 6-8 Abstraction Pressures

Abstraction Pressures Measures	
ABS1	The EPA is currently reviewing the national hydrometric monitoring programme. From the review it will identify the revisions necessary to provide the required flow and water level estimates needed to assess the impact of abstraction pressures on surface water and groundwater bodies.
ABS2	The EPA will undertake further assessment of the 4% of water bodies identified as potentially at risk of over-abstraction. This will establish if any of these water bodies are failing to meet their objectives under the WFD and will advise on any appropriate measures to mitigate the pressures.
ABS3	The Department of Housing, Planning, Communityand Local Government will in 2017 progress legislative proposals to establish a comprehensive and maintained register for water abstractions greater than 25 cubic meters per day.
ABS4	The Department of Housing, Planning, Community and Local Government will consult on a proportionate and risk-based framework for the regulation of relevant abstractions with the view to progressing the necessary legal and administrative regulation to ensure continued sustainable use of our water resources.

Discussion

Water abstraction is essential for a multitude of uses including agriculture, industry, public drinking water and power generation. As stated in the draft RBMP, the WFD requires that abstractions of surface water or groundwater which are likely to have a significant effect on water status are regulated. In Ireland 3% of rivers, 9% of lakes and 4% of groundwater bodies have been identified as potentially at risk of over-abstraction. At a national level, this is a relatively low level of risk in comparison with other pressures assessed. However, at a more local level, abstraction issues can result in a range of more significant effects. Water abstraction can give rise to potential negative impacts for biodiversity by altering the hydrological regime of water bodies, such as flow and water level with indirect effects for water dependent species. Indirect impacts may occur through abstraction of groundwater and the resultant effect on groundwater dependent habitats, such as alkaline fens and petrifying springs. Water quality can be reduced due to the dilution capacity for external inputs into the system being reduced. However, sourcing an alternative water abstraction source and having to pump water from one area into another (e.g. inter-catchment transfers) in itself can have indirect negative impacts on biodiversity and water quality, dependent on the location, due to the requirement to construct infrastructure for same.

Impact Assessment:

Measures ABS1 and **ABS3** are related to information/data gathering and are predicted to be positive as they seek to establish an evidence base on which to identify abstraction pressures on surface and groundwater bodies going forward. For **ABS1,** by analysing reliable flow and/or estimates for

individual water bodies, abstraction amounts can be compared to water flow/level to determine if the abstraction rates are sustainable and hence inform future decision making. The National Hydrometric Monitoring Programme is the overall responsibility of the EPA, with monitoring stations operated by a combination of the EPA, local authorities, OPW and ESB. The EPA is also reviewing modelling needs to facilitate the making of water balance assessments in order to support future water resource management decisions. Establishment of a database for abstractions greater than 25m^3 (as per the Water Pollution Act) will enable identification of existing abstractions in certain areas that may influence water flow/level and help determine sustainable abstraction rates to inform decision makers.

Measure ABS2 acknowledges that there are water bodies already known to be at risk of over-abstraction. This measure seeks to establish if they are failing to meet their objectives under the WFD and to identify mitigation measures where needed although the nature of the measures are not clear. The draft RBMP identifies several developments that have helped improved understanding of the risks associated with water abstractions including; the updating of the water abstraction database; the publication of EU guidance[16] on ecological flows; and a review of the national hydrometric programme. Identification of mitigation measures, although currently unknown, is anticipated to result in long-term positive impacts for biodiversity and water quality.

Measure ABS 4 relates to drafting of legislation to regulate abstractions at a catchment level to protect water bodies. The regime is likely to comprise a system of administrative and legal controls for the regulation of water quantity and as such will not have a direct impact on environmental receptors. It is anticipated that they will result in long term indirect positive impacts on biodiversity and water quality. The measure will also reinforce the need and implementation of Measures ABS1 – ABS3. It is envisaged that the proposed management regime will comprise a system of general binding rules which will apply in the case of the majority of abstractions and provide for the individual assessment of the more significant abstractions, typically where the abstraction is greater than 250 cubic meters per day. It is noted that the issue of climate change and how it might affect the long-term sustainability of abstractions is not discussed but could become a significant issue in the long-term. The proposed approach will be subject to separate public consultation. The role of AA in the assessment of such abstractions will be an important part of the evidence base and this measure should directly acknowledge the need for AA as part of any control regime.

Proposed Mitigation Measures / Recommendations:

- The role of AA in the assessment of abstractions will be an important part of the evidence base and this measure should directly acknowledge the need for AA as part of any control regime.
- The role of climate change in terms of the long-term sustainability of abstractions should be investigated and considered in any licensing context.
- Consideration should be given to including a specific measure to reduce abstraction demand, particularly where risks have been identified to sensitive water courses.

Table 6-9 Other Pressures

Other Pressures Measures	
OP1	The forthcoming National Planning Framework will integrate with this River Basin Management Plan. To support this, following the adoption of the RBMP and completion of the NPF, DHPCLG will prepare high level guidance for planning authorities on the relationship between physical planning and river basin management planning. This

[16] 'Ecological Flows in the Implementation of the Water Framework Directive, CIS Guidance Document No. 31', Technical Report 2015-086, European Commission, 2015.

Other Pressures Measures	
	guidance will provide a methodology for planning authorities to ensure that relevant plans and planning decisions are consistent with River Basin Management Plans and the requirements of the WFD.
OP2	OPW will undertake project level assessment of all relevant proposed physical flood management measures before submitting plans for exhibition, including, where necessary, a detailed appraisal under Article 4 of the WFD.
OP3	DHPCLG will work to ensure that relevant actions relating to the water environment are addressed in the National Climate Change Adaptation Framework.
OP4	Site specific environmental assessments will be carried out on each water supply zones where orthophosphate treatment is proposed as part of the National Lead Strategy for Drinking Water.

Discussion

OP1: The draft River Basin Management Plan recognises the need for alignment and integration with the planning system in order to ensure effective water management and compatibility between planned growth and environmental sustainability. Land use planning can be both effect waterbodies and be affected by waterbodies. Key issues in terms of how land use can negatively impact on water include: the effects of land use change, run-off, release of suspended solids and other pollutants, abstractions, modifications, and discharges. Key issues in terms of how water can impact on land-use planning include: limiting abstractions; insufficient capacity for waste water treatment etc. A key aspect in terms of land use planning will be the proposals contained in the draft National Planning Framework which is currently in preparation and the associated three Regional Spatial and Economic Strategies (RSESs). These documents together present an opportunity to align future land use planning proposals with sustainable water management for the benefit of society in general. The NPF is not available at this time for review, however a draft will be published in mid-2017. It is recommended that a dedicated workshop / meeting takes place between the RBMP and NPF and RSES teams to maximise coordination and alignment opportunities prior to the documents being finalised. The development of guidelines as presented under OP1 will bring greater clarity to those involved in land use planning in terms of meeting the water quality objectives outlined in the WFD. As such this measure is considered positive for all biodiversity receptors and is anticipated to have indirect positive effects in the medium to long-term.

OP2: The broad purpose of the WFD is to protect ecosystems, prevent pollution and promote sustainable water use with a strong focus on water quality and the health of aquatic ecosystems. The WFD represents one arm of water management; however, there are other elements which the EU is tackling in parallel, with one such element being flooding. The frequency and intensity of flood events in Ireland and Europe generally has increased in the recent past and it is predicted that this situation will continue into the future. In response to this the EU has developed a directive on the assessment and management of flood risk ("Floods Directive"). The purpose of the Floods Directive is "*to establish a framework for the assessment and management of flood risks, aiming at the reduction of the adverse consequences for human health, the environment, cultural heritage and economic activity associated with floods in the Community*".

The Floods Directive is intended to be linked to the WFD for more coherent river basin management and this is both acknowledged and supported in the Floods Directive. Since the publication of the first RBMPs in 2010 considerable progress has been made in developing the flood risk management plans. The plans are being developed at a River Basin District level in line with the River Basin

Districts which were identified for Ireland in the first RBMP cycle. Article 9 of the Floods Directive requires further coordination through flood risk mapping and involvement of interested stakeholders and also suggests the possible future integration of reviews under the Floods Directive with future RBMP reviews.

OP2 commits to undertaking project level assessment of all relevant proposed physical flood management measures. This is further clarified in the text to normally include an Environmental Impact Assessment (EIA) and, where necessary, a project-level Appropriate Assessment (AA) in line with the Birds and Habitats Directives. The assessment will also enable a detailed appraisal of the potential impacts of the final measures on the water body hydromorphology and status to be undertaken including, where necessary, a detailed appraisal under Article 4(7) of the WFD (derogation related to deterioration caused by new modifications). The application of these statutory processes is considered to be positive for all environmental receptors as it will ensure better oversight generally on the receiving environment.

OP3: Climate change impacts in Ireland are expected to include more intense rainfall events as well as periods of increased drought along with a rise in sea level. These events will impact on water quality and water services through increased risk of sewer flooding, possible inundation of treatment plants and other assets; deterioration in water quality in rivers and lower dry weather river flows reducing the water available for abstraction or for diluting treated effluent. A key issue therefore will be how resilient the measures proposed in the draft RBMP are in the context of future climate change predictions e.g. proposed abstraction measures discussed in the previous section.

The National Policy Position on climate action and low carbon development was published on the 23rd April 2014. The policy sets a fundamental national objective to achieve transition to a competitive, low-carbon, climate-resilient and environmentally sustainable economy by 2050. The policy states that GHG mitigation and adaptation to the impacts of climate change are to be addressed in parallel national strategies – respectively through a series of National Mitigation Plans (the first of which is the subject of an ongoing SEA and AA on behalf of the DCCAE) and a series of National Climate Change Adaptation Frameworks to be prepared by all public bodies. While such public bodies include relevant water stakeholders such as Irish Water, a dedicated consideration of Climate Change Adaptation in the context of the Programme of Measures proposed in this draft RBMP is needed to ensure that the measures remain fit for purpose into the future.

OP4: The legal limit for lead in drinking water was lowered in December 2013 from 25 micrograms per litre to 10 micrograms per litre (also expressed as parts per billion). This was in response to health concerns, particularly in relation to high risk groups such as pregnant women and babies. The Government published a National Strategy to reduce exposure to Lead in Drinking Water in June 2015. In support of this strategy Irish Water, as the national public water utility has drafted the Irish Water Lead in Drinking Water Mitigation Plan in consultation with the HSE and EPA. The Irish Water Lead in Drinking Water Mitigation Plan has undergone both SEA and AA.

Proposals under consideration include orthophosphate treatment to the water supply at various treatment sites as an interim mitigation measure for the protection of public health. Orthophosphate is a corrosion inhibiter that creates a protective coating on lead and other metal pipes which prevents the lead dissolving into the water. Orthophosphate treatment at very low concentrations has the potential to reduce the risk of exposure to lead for properties that have lead pipework and fittings containing lead. Orthophosphate treatment takes a period of 6-18 months to develop a full coating, after which dosing must be maintained in order to sustain the protective coating. As such, the Lead in Drinking Water Mitigation Plan has the potential to impact on the

RBMP, as the additional orthophosphate may increase the phosphorus loading to receiving waterbodies as a result of discharges, leakage and sludge reuse on agricultural lands, potentially causing nutrient enrichment. Due to this risk, Irish Water has devised an Environmental Assessment Methodology (EAM) to allow specific environmental risk assessment of any proposed orthophosphate dosing. This methodology will ensure that orthophosphate treatment will only be undertaken in areas where there will be no significant impact on the environment. This methodology has been discussed and agreed with the EPA. A priority project has been proposed in Limerick City and an AA and EAM has been applied. Orthophosphate Treatment for the protection of public health commenced in Limerick City in November 2016. A similar process of project specific AA and EAM will be applied for each proposed corrective water treatment installation.
Proposed Mitigation Measures / Recommendations:
• It is recommended that communication takes place between the RBMP and NPF and RSES teams to maximise coordination and alignment opportunities prior to the documents being finalised. Consideration of any conflicts which might arise between the implementation of the CFRAMS and RBMP should be formally facilitated before either set of plans is finalised and adopted. • A dedicated consideration of Climate Change Adaptation in the context of the Programme of Measures proposed in this draft RBMP is needed to ensure that the measures remain fit for purpose into the future.

Table 6-10 Protected Areas and High Status Waters

Measures for Protected Areas & High Status Waters	
Drinking water protected areas	
DW1	As part of the development of Drinking Water Safety Plans, Irish Water will complete 353 Source Risk Assessments by 2021.
DW2	Irish Water will undertake a programme of raw water monitoring at 191 abstraction points to support the above risk assessments.
DW3	The National Federation of Group Water Schemes will continue its programme of source protection plans, with plans prepared for all relevant schemes.
DW4	The development of source risk assessments will contribute towards the identification of appropriate mitigation measures. An integrated and co-operative approach with all stakeholders will be required for the assessment, identification and delivery of necessary measures and the ongoing protection of drinking water sources, which will be facilitated through the implementation structures for this RBMP.
Bathing water protected areas	
BW1	Works will be progressed to ensure 6 bathing water areas classified as poor in 2015 meet required standards.
Natura 2000 Sites	
N1	At risk water dependant Natura 2000 sites will be prioritised for supporting measures.
N2	DAHRRGA and EPA will undertake research to develop the required water related standards to support the conservation objectives for marl and oligotrophic lakes which have been identified as potentially requiring more stringent water quality conditions.
N3	The DAHRRGA, with support from other agencies, will implement its strategy for designated freshwater pearl mussel areas.
N4	The DAFM in collaboration with DAHRRGA will establish Locally Led Agri-Environment Schemes (LLAES) funded through the RDP for the eight priority designated Freshwater Pearl

Measures for Protected Areas & High Status Waters	
	Mussel areas. The KerryLife project will be completed and provide important lessons for protecting other freshwater pearl mussel catchments.
N5	Forestry Services will implement the Plan for Forestry & Freshwater Pearl Mussel in Ireland, which includes Catchment Forest Management Plans for the 8 priority FWPM catchments.
N6	DAHRRGA will review and revise, as necessary, the national freshwater pearl mussel conservation strategy during cycle 2 to incorporate the findings of the above initiatives, as well as the results of monitoring and research programmes.
High Status Waters	
HS1	Existing measures, such as the GLAS scheme, forestry scheme and septic tank inspections will continue to promote the protection of high status waters. Uptake of these schemes in high status areas will continue to be promoted and a proportion of septic tank inspections will be weighted towards high status catchments.
HS2	Recognising that protecting high status waters is a priority, a "Blue Dot Catchments Programme" will be developed and implemented. This will establish a network of river and lake catchments with the shared objective of protecting and restoring high ecological status waters. This programme will be delivered through local authority structures, integrating with wider implementation structures, and will facilitate focussed deployment of resources to "Blue Dot" catchments.
HS3	In addition to facilitating focussed deployment of resources, the Blue Dot programme will facilitate public awareness and engagement including the development of community led catchment initiatives through LAWCO.

Drinking water protected areas
Discussion
Drinking water quality standards are set out in the European Union (Drinking Water) Regulations 2014, S.I. No. 122[17] which gives effect to Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption. The Regulations include microbiological parameters (*E. coli* and *Enterococci*), and chemical parameters such as metals, trihalomethanes (THM), polycyclic aromatic hydrocarbons (PAHs), and other indicator parameters such as conductivity, iron, manganese etc. The key source of information on the quality of drinking waters in Ireland, is the annual Drinking Water Report produced by the EPA. As an indication of 'quality' of supply, the number of boil water notices and water restrictions provide information on the type of issues arising. Some issues are relevant to the WFD Programme of Measures in terms of the potential to mitigate impacts on drinking water sources via catchment protection measures e.g. faecal contamination through management of diffuse and point sources of pollution, and pesticide control (e.g. MCPA[18]) through agricultural measures, while others are outside of the scope of the WFD measures e.g. lead piping, excessive levels of aluminium in treated waters or THMs resulting from inadequate pre-treatment of the water and/or poor control over the disinfection process itself. The EPA have a number of priority actions identified of which the following can be assisted via the River Basin Management Plan Programme of Measures: Protect sources and abstraction points. A recent report by the EPA[19] states that pesticides, specifically MCPA has emerged as a significant water quality issue in 2015. 61 supplies had pesticide exceedances in 2015, which represented a significant increase on 2014 (28 supplies). The completion of Drinking Water Safety Plans from

[17] http://www.irishstatutebook.ie/eli/2014/si/122/made/en/print
[18] *MCPA* (2-methyl-4-chlorophenoxyacetic acid)
[19] http://www.epa.ie/pubs/reports/water/drinking/2015%20DW%20Report%20Public%20Supplies_web.pdf

source to tap is the key measure quoted to ensure future resilience of the public water supply. Six DWSPs were completed and 173 in preparation at the end of 2015. While the primary objective of a DWSP is to protect human health, the catchment specific mitigation measures and co-operation of all stakeholders in the catchment including government agencies, industry, farmers, landowners, environmental non-governmental organisations, recreation/sporting bodies etc., is beneficial for water quality and biodiversity in general. The EPA states that "*Successful engagement of such stakeholders will serve a dual role or improving raw water source protection for the supply as well as assist in meeting the Water Framework Directive requirements of maintaining or improving water quality status*[20]".

Impact Assessment:

Measures DW1 – DW4 relate to ongoing efforts by Irish Water to establish the baseline situation and develop targeted responses to ensure a safe and sustainable drinking water supply for all its customers. This will involve risk assessments, monitoring and planning. This foundation work is critical to informed decision making on what measures are required to address issues identified. The measures are related to information/data gathering and are predicted to be broadly positive as they seek to; establish an evidence base on which to identify drinking water sources which may require protection measures, with the aim of therefore avoiding the need for future water treatment. Increasing the evidence base of drinking water sources at risk will also have long-term positive impacts on water quality and biodiversity. Measure DW3 relates to the provision of incentives to the remaining Group Water Schemes in order to facilitate the development of source protection plans. These plans involve a professional assessment of water sources, the delineation of "the zone of contribution" around each source, mapping of catchments and assessments of groundwater vulnerability. This measure is likely to be positive long-term for biodiversity and water quality. Overall, the long-term impacts will be positive as it will lead to an increase in protection of water sources, thereby reducing the need for water treatment. DW4 references the development of mitigation measures however no further detail is available at this time and may in due course require integrated catchment management and the design of drinking water treatment plants. As such there is potential for indirect positive or negative effects depending on what and how the mitigation is applied.

Proposed Mitigation Measures / Recommendations:

None required

Bathing Water protected areas

Discussion

Ireland's bathing waters are in their majority reaching there environmental standards, with only 6 bathing waters requiring measures to resolve poor quality classification. Waste water discharge was the leading cause of below good quality in bathing waters, often due to the lack of adequate treatment before release or release of overflows during storm events from combined sewer. Management measures have already been identified for these areas. Bathing water profiles serve as an 'action plan' with measures identified to maintain or improve existing bathing water classifications.

Impact Assessment:

BW1 relates to works to improve the quality of bathing water sites which were classified as poor in 2015. Works may include capital investment and as such have the potential for indirect impacts on the receiving environment where new or upgraded infrastructure is required. Positive impacts would be anticipated for water and biodiversity from improved treatment and discharge quality to

[20] http://www.epa.ie/water/dw/drinkingwatersafetyplans/

estuarine or coastal areas, however, temporary negative impacts associated with infrastructure may be experienced. Proposed works will need to be screened for EIA and AA as a minimum as per normal planning and environmental assessment processes.

Proposed Mitigation Measures / Recommendations:

None required

Natura 2000 Sites

Discussion

Natura 2000 is a network of sites selected to ensure the long-term survival of Europe's most valuable and threatened species and habitats**.** The Natura 2000 network stems from the Habitats Directive and Birds Directive. Member States choose sites depending on which of the two nature directives – Birds or Habitats – warrants the creation of a particular site. Under the Habitats Directive, Member States designate Special Areas of Conservation (SACs) to ensure the favourable conservation status of each habitat type and species throughout their range in the EU. Under the Birds Directive, the network must include Special Protection Areas (SPAs) designated for particularly threatened species and all migratory bird species.

A 2011 European Commission document[21] sets out *Frequently Asked Questions* relating to the *Links between the Water Framework Directive (WFD 2000/60/EC) and Nature Directives (Birds Directive 2009/147/EC and Habitats Directive 92/43/EEC)*. According to EC (2011), '*there is a need to identify the water related requirements to achieve favourable conservation status of habitats and species dependent on water'*; the focus therefore for Natura 2000 sites is on those dependent on water and on the water related requirements.

EC (2011) also states that, according to WFD Article 4.1(c), the WFD objective of good status may need to be complemented by additional objectives in order to ensure that conservation objectives for protected areas are achieved. For example, if a certain concentration of a nutrient is needed to achieve good ecological status and a more stringent value is needed to achieve a site's conservation objectives, then the latter applies. EC (2011) points out that '*it may not always be easy to decide whether one objective fully covers the other*' particularly as the objectives in the WFD and the Birds and Habitats Directives (BHD) are not defined in the same way. In the BHD, the overall objectives refer to species and habitat types at the level of the biogeographic region, but also objectives are set on site level to achieve those, whereas the objectives of the WFD refer to water bodies. The Habitats Directive is clear that Member States must show progress in achieving favourable conservation status and must '*take appropriate steps to avoid ……. the deterioration of natural habitats and the habitats of species ….*'.

In 2013, the National Parks and Wildlife Service produced their report on the Status of EU protected habitats and species in Ireland (NPWS, 2013[22]). Ireland has protected 430 candidate Special Areas of Conservation (SACs). 358 (83%) SACs contain at least one water dependant feature (most designated for more than one habitat and/or species). Fifty-eight habitats and 61 species are covered by the 2013 NPWS Status report of which 44 are water dependent habitats, and 22 are water dependent species (**Appendix I**). Five water dependent habitats (11%) were deemed to be at favourable conservation status. Eleven water dependent species (50%) are at favourable conservation status.

The Birds Directive, requires the identification of Special Protection Areas (SPAs) for the species listed on Annex I of the directive, together with significant population of other regularly occurring migratory species and their wetland habitats. Ireland has designated 165 SPAs, and the majority are for breeding seabirds and wintering waterbirds. Ireland however, currently does not have a

[21] http://ec.europa.eu/environment/nature/natura2000/management/docs/FAQ-WFD%20final.pdf

[22] National Parks and Wildlife Service (2013). The status of EU Protected Habitats and Species in Ireland. Volumes 1-3. Unpublished Reports, National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

prioritised list of water dependent birds which could be targeted through the RBMP process in a similar way to the habitats / species water dependency list. A starting point towards establishing stronger linkages between the WFD and the Birds Directive could be the series of 10 Group Species Action Plans for Irelands priority, migratory and dispersed birds based on their habitat requirements[23]. These plans encompass those species that are found on the *Birds of Conservation Concern in Ireland* Red and Amber lists, including those regularly occurring birds in Ireland also found on Annex I of the European Birds Directive and a few additional bird species needing protection. This would require further discussion with NPWS and BirdWatch Ireland.

Article 4.1(c) of the WFD specifies that the programme of measures in an RBMP "*shall achieve compliance with any standards and objectives* [for protected areas] *at the latest 15 years after the date of entry into force of*" the WFD. The RBMP therefore much include the water-related measures necessary to achieve the standards and objectives for the SACs and SPAs included on the Register of Protected Areas established under Article 6 and Annex IV of the WFD. It should be noted that for many habitats and species in decline, there is limited time available to take action e.g. for the FPM.

Impact Assessment:

Measures N1-N2 are related to information/data gathering and are predicted to be broadly positive as they seek to gain an accurate picture of the actions required. **Measure N1** relates to monitoring and assessment of 'at risk' Natura 2000 sites with water dependence. The measure will likely have a long term positive impact on biodiversity and water quality as it will guide more efficient and targeted mitigation efforts and will aid protection of the sites. **Measure N2** relates to the protection and improvement of marl lakes and oligotrophic lakes. Annex I lake habitat types which require higher water quality standards (high status), as documented in Chapter 4 of O'Connor, A. (2015[24]) are:

- Habitat 3110 Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*)
- Habitat 3130 Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and / or of the *Isoëto-Nanojuncetea* (mixed *Najas flexilis* lake habitat)
- Habitat 3140 Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. (Hard-water lakes) (for lakes in catchments dominated by shallow soils and subsoils and exposed limestone pavement; a good status objective is sufficient for coastal sub-types and larger more mixed catchments with deeper soils and lower groundwater vulnerability), and
- Habitat 3160 Natural dystrophic lakes and ponds (appropriate targets need to be developed for attributes such as DOC, abundance of bacterial, fungal and associated communities etc., which are currently not assessed as part of the EPA national lakes monitoring programme).

All four habitats have been identified as requiring more stringent water quality protection measures and their inclusion as part of this measure to support the conservation objectives of these habitat types will have long-term positive impacts for marl and oligotrophic lakes.

Measures N3 and N6 relate to the National Conservation Strategy for the Freshwater Pearl Mussel (*Margaritifera margaritifera* and *Margaritifera durrovensis*) which is seeking to ensure the long-term survival of the species in Ireland, while maintaining its broad geographic range. The strategy, is the

23 http://www.birdwatchireland.ie/OurWork/SpeciesHabitatConservationinIreland/ActionPlansforIrishBirds200911/tabid/946/Default.aspx

24 O'Connor, Á. (2015) Habitats Directive Annex I lake habitats: a working interpretation for the purposes of site-specific conservation objectives and Article 17 reporting. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland. https://www.npws.ie/content/publications/habitats-directive-annex-i-lake-habitats-working-interpretation-purposes-site

responsibility of DAHRRGA, confirms that the measures needed to restore favourable conservation status in the 27 SAC catchments would be resource heavy and cannot be tackled in all 27 catchments in the same period. Instead the strategy focusses on 8 priority catchments in the first instance on the basis of several criteria including population size; closeness to the achievement of favourable conservation status; habitat condition and where the impacting pressures are best understood and therefore, the measures employed are expected to be effective. This approach has in turn been mirrored by other agencies such as DAFM in their own plans. The implementation of N3 and N6 is expected to deliver long-term direct positive impacts for biodiversity and water quality, including for other qualifying interests such as Atlantic salmon. It must be acknowledged that the strategy relies on significant cooperation from other sectors, in particular forestry and agriculture. Supporting measures, through these other sectors are expected to necessitate altered management practices and curtailment of some current and historic landuse practices. It should be noted that there is an urgency as to the deployment of measures so as to begin remediation of the FPM habitat in sufficient time before further damage and population losses are experienced.

Measures N4 relates to the establishment of Locally Led Agri-Environment Schemes (LLAES). The intention of the scheme is to offer a complementary approach to other models which have an environmental focus such as that used under the Green Low-carbon Agri-Environment Scheme (GLAS), although the two schemes are separate. These LLAES encourage farmers to be mindful of environmental issues, and in this case, of impacts acting upon FPM populations resulting from agricultural processes (e.g. sedimentation, nutrient enrichment). The scheme is aimed at encouraging locally-driven solutions to address the many environmental and biodiversity challenges which manifest themselves at local level. A project team will be appointed to develop suitable actions at local level across all areas, working with farmer representatives on the ground, aided by approved planners and other experts. As the schemes are still to be designed, no specific measures are mentioned therefore it is not possible to assess specific outcomes. Direct positive impacts are anticipated for water quality and biodiversity. Measure N4 also relates to the completion of the KerryLife project, a demonstration project with the objective of creating sustainable land use techniques and practices for local farmers and forest-owners in freshwater pearl mussel catchments. The project is located in the Caragh and Kerry Blackwater river catchments in South Kerry. It commenced in 2014 and will run over a 5½ year period to 2019 with the intention to restore two internationally important freshwater pearl mussel populations. **Measure N4** on the KerryLIFE project is possibly one of the most critical in the arsenal of measures working toward protecting this sensitive species as it will provide real world feedback on the effectiveness of measures. In reality, the issue for conservation of FPM in other catchments will be similar to the issues encountered here and as such the result from KerryLife will be an important precursor to focussed measures elsewhere. The measure will have a direct positive impact for biodiversity, flora and fauna, water and soils in the specific catchments involved and indirect medium to long term positive effects for other FPM catchments which will benefit from the lessons learned. As with other measures which may require changes to management practices, there may be indirect short term negative effects for material assets.

Measure N5 is related to the implementation of a Plan for Forestry and the FPM and the revision of the 'Forestry and Freshwater Pearl Mussel Requirements'. The potential for conflict with FPM was clearly acknowledged in the most recent Forestry Programme 2014-2020 and the Forest Service have committed to developing detailed management plans for forestry management within the eight priority FPM catchments and a single inclusive plan for all other remaining FPM catchments. These are not yet finalised but are undergoing both SEA and AA. The environmental assessments will assess the efficacy of as yet unspecified mitigation measures relative to the integrity of European Sites and the FMP. It is hoped that the measures will strengthen the protective measures already in place for the protection of watercourses and should contribute towards quantifiable improvements

in water quality as well as reducing impacts upon water dependent habitats and sensitive species including the FPM. The implementation of these plans would be expected to have long-term permanent positive impacts for biodiversity and water quality depending on the mitigation and altered practices necessary to secure the protection of the FPM being adhered to.

Proposed Mitigation Measures / Recommendations:

- Measure N4 should acknowledge the need for environmental assessment and appropriate assessment of local solutions prior to implementation with particular attention paid to other protected habitats and species which could be unintentionally impacted e.g. kingfisher, otter.
- Ireland currently does not have a prioritised list of water dependent birds which could be targeted through the RBMP process in a similar way to the habitats / species water dependency list. It is desirable that NPWS and BirdWatch Ireland liaise with the EPA to develop such a list as a starting point towards establishing stronger linkages between the WFD and the Birds Directive.

High Status Sites

Discussion

The EPA has highlighted, as a key concern, the decline in high ecological quality river sites (EPA, 2009). Such waters are indicators of largely undisturbed conditions and reflect natural background status or only minor distortion by anthropogenic influences. They are used as reference from which deviation in quality is measured. Their importance includes supporting aquatic species sensitive to enrichment or siltation e.g. freshwater pearl mussel (*Margaritifera margaritifera*) and juvenile salmon (*Salmo salar*). A decline in the percentage number of high quality river sites was noted in all River Basin Districts (RBDs) between 1987 and 2009. The most striking decline was the seven-fold decrease in Q5 sites, which accounted only for less than 2 % of all sites in the 2006-2008 survey period (EPA, 2009). One of the objectives of the Water Framework Directive (WFD) is to maintain high status water quality where it exists but where practical, the RBDs should, strive to restore former high quality sites (EPA, 2009). This information prompted the EPA to fund a STRIVE research project to develop management strategies for the protection of high status waters, and the outputs from this desktop study were published in Ní Chatháin et. al. 2012[25] and Irvine et al. 2011[26]. The report stated that:

- To date, the key focus in the implementation of the WFD has largely been on the objective that all water bodies meet at least good status by 2015. The WFD environmental objective that specifies no deterioration, has received far less attention.
- The need to stem the degradation of high status sites merits high priority, not least because preventing, or addressing small impacts is a feasible option, and likely much more cost effective than large scale restoration to good status for sites at moderate status or worse.
- The importance of the decline of high status sites is not confined to a breach of a European Directive, but is of fundamental significance for maintenance of biodiversity, ecological integrity and as refugia of species from a widely impacted landscape.
- While serious pollution has decreased significantly in the period 1987 to 2008 and the rate of increase in the channel length classified as being in moderate and poor status has been reduced, there has been a dramatic loss of the best quality high status sites. Rivers best illustrate this however there is no reason to suppose that lakes in such catchments are not also impacted by many of the same pressures.
- In order to protect the remaining high status sites and to reverse the trend of decline, it is important to tackle the principal pressures causing the ecological damage. Apart from obvious

[25] http://www.epa.ie/pubs/reports/research/water/strivereport99.html
[26] http://erc.epa.ie/safer/iso19115/displayISO19115.jsp?isoID=3000

point source pollution or accidental releases of pollutants, relatively low intensity activities are important in this context including, e.g. land use changes such as field drainage and fertilisation, one-off housing, forestry activities, wind farms, animal access to waters, and sheep dip pesticides.

The desk study proposed a series of strategies in a discussion document in order to address the decline of high status sites and water bodies, and stressed that the most urgent response was needed within local and public authorities until such time as some of the proposed mechanisms were in place. Strategies presented were based on the following five key points:

1. Planning and development in High Status catchments is an environmental issue;
2. High status catchments provide valuable ecosystem services;
3. High status catchments have little to no capacity for further intensification;
4. High status catchments and protected areas require similar protection strategies;
5. County Development Plans, and all plans, and policies should reflect the sensitivity of high status water bodies.

Since the outputs of this desk study were published, a continued decline in high status waters has been recorded through the WFD national monitoring programme. By 2015, 0.7% of river sites were classified at Q5 status (versus 13.4% between 1987-1990), and 16.9% at Q4-5 (versus 18.1% between 1987-1990 and a high of 20.9% between 1991 and 2000). The Draft RBMP has placed a strong emphasis on the protection of high status waters, and has given it the highest priority in its implementation strategy.

Impact Assessment:

Measure HS1 specifically relates to the promotion of the uptake of the GLAS scheme (Green Low Carbon Agri-Environmental Scheme) and forestry schemes in high status catchments. The GLAS scheme aims to promote the participation of farmers in implementing actions to improve water quality in agricultural areas. This scheme priorities high status and 'at risk' catchments. It is focused on helping farmers gain a greater understanding of the benefits of their actions on the water environment. This measure is likely to have a significant positive impact on biodiversity. The benefits of this measure are dependent on the level of participation of the farmers whom elect to take part in the scheme. Measure HS1 also relates to the monitoring of septic tanks in high status catchments; inspections will be weighted towards tanks in high status catchments. Septic tanks are a major cause of diffuse pollution to surface and ground water bodies, particularly in rural areas. This is largely due to lack of maintenance of systems. This pollution causes nutrient enrichment of water bodies and contamination of drinking water sources in some cases. Weighting the monitoring of septic tanks to those in high status catchment affords protection to high status water bodies by increasing the probability of detecting septic tank related pollution incidences and directing protection measures towards these areas. This is crucial as high status water bodies are extremely sensitive to environmental impacts. Therefore, this measure is wholly beneficial to biodiversity, and in turn, those water dependent species and habitats which require high status.

Measures HS1 and HS2 relate to the development and implementation of the 'Blue Dots Catchments Programme'. This programme will be focused at a catchment level and aims to protect and restore high ecological status of rivers and lakes within the catchment. The purpose of the Blue Dot programme is to provide a means of focussing attention and resources across a range of agencies with the aim of protecting, and where required, restoring high ecological status. Previously a 'red dot' programme run by the EPA saw a reduction of seriously polluted river channel length from 122km in 1997 to just 6km in 2015 so an evidence base exists for this type of approach. Much of the focus of the blue dot programme will be education, awareness and support measures for the purpose of improving the protection of water quality. e.g. uptake of GLAS, promotion of the forestry

native woodland schemes etc.

Given the complexity of issues facing many of these high status waterbodies, an integrated and coordinated response across key agencies is essential if it is to be successful and this will be supported by a working group identified in Measures HS2, which spans a number of the key agencies. These measures will have a long-term positive impact on biodiversity, flora and fauna, soil and water quality and population and human health.

Measure HS3 relates to generating public awareness and encouraging community engagement, led through initiatives put forward by LAWCO. As such it is anticipated to have positive impacts for biodiversity as community engagement promotes better understanding of the local catchment and its issues and directly supports behavioural change.

Proposed Mitigation Measures / Recommendations:

- Every effort should be made to expedite the establishment of the blue dot programme and the establishment of the high status working group. The group should also include in its consideration the high status objective requirements for the Annex II freshwater pearl mussel species and for Annex I lake habitats in certain sites as identified by the NPWS.
- The promotion of agriculture and forestry environmental schemes should also focus on sensitive lake and turlough catchments.
- Consideration should be given to the inclusion of qualifying features with a high status requirement e.g. the freshwater pearl mussel, Annex I lake habitat types within the National Inspection Plan for DWWTS.

Table 6-11 Economic Analysis

Measures to Improve Economic Analysis	
EA1	CER as economic regulator, will approve Irish Water costs and continue to drive efficiencies within its cost base. For example, Irish Water is required to deliver efficiencies of around 20% within its base controllable operating expenditure over the period from the start of 2015 to the end of 2018.
EA2	CER will also monitor Irish Water's delivery for money spent and publish information to improve transparency in this regard. For example, the CER is currently putting in place a suite of metrics against which it will assess Irish Water's performance, over time and against international comparators. These metrics will relate to, for example, customer service, environmental performance, quality of service for water supply, security of water supply and sewerage service.
EA3	CER will continue to develop and implement a harmonised suite of non-domestic water tariffs that will benefit customers in terms of transparency, equity and simplicity. Similar work will be progressed by the CER in relation to a harmonised suite of charges for connection to the water and wastewater systems
EA4	Metering information will be used by both Irish Water and CER to improve our understanding of water use and leakage. Irish Water will continue its programme to address leakage and unaccounted for water, with an expected outcome of saving around 82.5 million m^3 of water per annum by 2021.
EA5	Data from both non-domestic and domestic water meters will be used to develop basic annual water statistics to be produced and published by the CSO, in co-operation with

	other stakeholders. CSO will also develop catchment specific statistics to support delivery and monitoring of this RBMP – again in co-operation with other stakeholders.
EA6	The economic analysis of water will be developed on an ongoing basis throughout this second cycle, in particular following decisions around the future structures and funding model for the delivery.

Discussion & Impact Assessment:

Measures EA1-EA6 relate to the economic analysis of water, specifically the requirement of Article 9 of the WFD which requires Member States to take account of the principle of recovery of the costs of water services, including environmental and resource costs, in accordance with the polluters pay principle. In the main the measures relate to data collection and analysis of water usage, acceptable tariffs and regulation of Irish Water by CER. These mainly administrative measures will inform future decision making on funding models for the delivery of improvements. As such they will have indirect positive impacts for water by providing the evidence base necessary for decision making.

No specific measures related to water conservation or cost recovery are included in the draft RBMP. While it is acknowledged that the supporting text in the plan does reference conservation and indeed ongoing water conservation initiatives, the plan could be strengthened by the addition of a specific measure signposting how water conservation will be managed and integrated through the second cycle of the plan. It is suggested that specific education and conservation measures should be a feature of all cycles of the RBMP to demonstrate to all the importance of these fundamental measures in long-term sustainability.

Lower overall requirement for water has many positive knock-on effects for the environment. Water availability is a key driver of development and economies therefore strategies to reduce consumption would result in less water requiring treatment and consequently less waste water requiring treatment. The success of such measures will be closely related to education and awareness.

The concept of cost recovery was introduced in the WFD. Cost recovery is a controversial measure. It is noted that the recommendations of the Expert Commission on water charges and the cost recovery model is being discussed at a Dáil Committee.

- **Proposed Mitigation Measures / Recommendations:** Include specific measures to support education and awareness programmes and water conservation.

6.4.2 Assessment of In Combination Effects with Other Plans or projects

The assessment of in-combination effects with other plans or projects is a crucial and often difficult aspect of Article 6(3) assessment, particularly at the plan level. This step aims to consider the policy and framework within which the Draft RBMP is being developed and to identify at this early stage any possible in-combination effects of the Draft RBMP with other plans and projects. In theory, there are many other plans / projects that interact with or have the potential to combine pressures and threats to European Sites, however, the in-combination assessment is a matter of applying a practical and realistic approach.

In line with MN2000 guidance, a stepwise approach has been taken to consideration of in-combination effects as follows:

- Identify plans / projects that might act in combination;
- Identify the types of impact that might occur;
- Define boundaries of the assessment;
- Identify pathways for impact; and
- Impact prediction and assessment.

Broadly speaking cumulative impacts at the plan level can occur from two sources as follows:

- Interaction of measures within the draft RBMP; and
- Interaction from policies and proposals in other related plans.

Interaction of Measures within the Draft RBMP

Cumulative environmental benefits are anticipated from the combined actions proposed within the draft RBMP. These actions are expected to materialise over the plan period and beyond. As might be anticipated the greatest cumulative benefit should be in relation to water quality, as the actions proposed contribute to achieving at least *good status* and maintaining high status or restoration to high status, in line with the objectives of the WFD. This will be achieved in the main by acquiring more and better data, improving the evidence base for decision making and targeting resource allocation etc. For biodiversity in general, these measures are positive, especially for water dependant habitats and species as the cumulative effect of all of the measures will lead to an improvement in water quality. This will be particularly important in relation to protected species such as the FPM. The cumulative impact of the measures proposed under Rural Diffuse, Forestry and Protected and High Status Waters will be essential to halt the decline of the species in the eight priority FPM catchments. The measures proposed also for Annex I lake habitat types are essential to improve the assessment of habitats and inform the water related standard requirements. The interplay of the various programmes of measures is the key to achieving real gains in this regard.

Interaction from Policies and Proposals in Other Related Plans

There are a number of key national policies which have the potential to result in cumulative impact (both positive and negative) on the receiving environment with the draft RBMP. The most noteworthy of these are policies relating to agriculture, forestry, climate and land use planning. These can positively contribute to achieving the objectives laid out in the draft RBMP if implemented in an holistic way which captures the complexity and multi-dimensionality of situations in catchments and recognises the interplay between human, ecological and biophysical systems, or they can also become cumulative pressures on waterbodies, driving trends downward and moving Ireland further away from achieving its obligations under the WFD. Critical to this is the linking of national policy and approaches for biodiversity, spatial planning, agriculture, GHG emissions and flood mitigation to a greater degree. As the RBMP is a national plan, the review of such key plans/ programmes has both focused at a higher European level whilst reflecting upon both national and regional plans and programmes.

Table 6-12 below outlines other plans and programmes which have been reviewed and assessment for potential in-combination impacts. **Table 6-9** also assesses potential other measures related to other plans and programmes.

Table 6-12 In-Combination Impacts with Other Plans and Strategies

Plan	Key Types of Impacts	Potential for In-combination Effects and Mitigation
National Planning Framework (Ireland 2040 Our Plan, in preparation) Possibly one of the most critical inter-dependencies for the second cycle of the RBMP is how it is integrated into the development of national planning policy through the National Planning Framework (in prep). The National Planning Framework is a long-term strategy for the next 20 years and it will focus on ensuring compatibility between future growth of cities/ towns within Ireland alongside environmental sustainability. It is intended that the National Planning Framework will both provide a strong focus to guide and inform future planning and set the framework for integrated investment decisions. It is intended that the national policy will be detailed through Regional Spatial and Economic Strategies (in prep) which will set long term national, regional and local development frameworks from within which sectors will work together to ensure proper planning and sustainable development. Both the National Planning Framework and the Regional Spatial and Economic Strategies will be subject to the AA process. It is anticipated that the National Planning Framework will be developed over the course of 2017 and this will allow for informed discussion before either the National Planning Framework or the RBMP is finalised.	▪ Habitat loss or destruction; ▪ Habitat fragmentation or degradation; ▪ Alterations to water quality and/or water movement; ▪ Alteration to air quality; ▪ Disturbance.	The plan will be subject to AA, with the Minister for the DHPCLG as the Competent Authority in terms of appraising the AA process[27]. There is therefore significant scope for integration of the planning and environmental processes under the same Government Department. The potential for in-combination effects are unclear as the plan is not sufficiently developed at this stage. Impacts would be expected to be in relation to requirement for infrastructure. However, it is a policy[28] of the National Planning Framework to ensure the resilience of our natural resources and cultural assets. Linkage to wider policies such as for European Sites under the Birds and Habitats Directives and the Water Framework Directive is recognised and the need to set high level planning policies in protecting and making responsible use of our natural environment.
Catchment based Flood Risk Assessment and Management (CFRAM) Programme, under the Floods Directive The Office of Public Works (OPW) is responsible for the implementation of the Floods Directive 2007/60/EC which is being carried out through a Catchment based Flood Risk Assessment and Management (CFRAM) Programme. As part of the directive Ireland is required to undertake a Preliminary Flood Risk Assessment, to identify areas of existing or potentially significant future flood risk and to prepare flood hazard and risk maps for these areas. Following this, flood risk management plans are developed for these areas setting objectives for managing the flood risk and setting out a prioritised set of measures to achieve the	▪ Habitat loss or destruction; ▪ Habitat fragmentation or degradation; ▪ Alterations to water quality and/or water movement; ▪ Disturbance; ▪ In-combination impacts within the same scheme	CFRAM Studies and their product Flood Risk Management Plans, will each undergo appropriate assessment. Any future flood plans will have to take into account the design and implementation of water management infrastructure as it has the potential to impact on hydromorphology and potentially on the ecological status and favourable conservation status of water bodies. The establishment of how flooding may be contributing to deterioration in water quality in areas where other relevant pressures are absent is a significant consideration in terms of achieving the objectives of the WFD. The AA of the plans will need to consider the potential for

[27] http://www.housing.gov.ie/sites/default/files/publications/files/towards_a_national_planning_framework_december_2015.pdf , p.18
[28] http://www.housing.gov.ie/sites/default/files/publications/files/towards_a_national_planning_framework_december_2015.pdf , Appendix II – Page 2

Plan	Key Types of Impacts	Potential for In-combination Effects and Mitigation
objectives. The CFRAM programme is currently being rolled out and Draft Flood Risk Management Plans have been prepared. These plans have been subject AA.		impacts from hard engineering solutions and how they might affect hydrological connectivity and hydromorphological supporting conditions for protected habitats and species.
National Climate Change Adaptation Framework 2012 The framework provides strategic focus to ensure adaptation measures are taken across different sectors and levels of government to reduce Ireland's vulnerability to the negative impacts of climate change. There is a requirement for each government department to prepare sectoral plans. With the establishment of the Climate Action and Low Carbon Development Act 2015 there is now a statutory basis on which National Climate Change Adaptation Frameworks and Sectoral Adaptation Plans are to be established. It is expected that the National Climate Change Adaptation Framework will be finalised later in 2017 followed by the development of sectoral adaptation plans. The policies and measures developed by the Adaptation Framework are likely to focus on infrastructural measures which have the potential to impact on hydromorphology which has specific relevance for the RBMP and Natura Directives. In addition, a climate Mitigation Plan is also being prepared by the DCCAE and this too will contain specific measures to mitigate against climate change. The focus in this plan is the transport, energy, built environment and agriculture sectors.	• Habitat loss or destruction; • Habitat fragmentation or degradation; • Alterations to water quality and/or water movement; • Disturbance; • In-combination impacts within the same scheme	Ireland will have to adhere to the goals and targets set by the EU in relation to climate and energy and the National Policy Position on climate action sets a fundamental national objective to achieve the transition to a competitive, low-carbon, climate-resilient and environmentally sustainable economy by 2050. The policy states that greenhouse gas mitigation and adaptation to the impacts of climate change are to be addressed in parallel national strategies, through a series of National Mitigation Plans and a series of National Climate Change Adaptation Frameworks respectively. Alongside the focus towards reducing greenhouse gas emissions Ireland also needs to increase its share of renewable energy. Renewable energy sources include a range of possibilities, although to date much of the focus has been on wind energy and the focus is often in remote and upland areas including peatlands and forestry. In both cases, environmental sensitivities which relate to water dependant habitats and species can be a significant issue at project level and this must be part of broader considerations on the inter-dependency of national policy positions, especially where defined targets have been set. As part of policies and frameworks being developed going forward, consideration should be given to these sensitive areas and guidance developed in terms of future development.
Foodwise 2025 Foodwise 2025 strategy identifies significant growth opportunities across all subsectors of the Irish agri-food industry. Growth Projection includes increasing the value added in the agri-food, fisheries and wood	▪ Land use change or intensification ▪ Water pollution	Foodwise 2025 was subject to its own AA[29]. Growth is to be achieved through sustainable intensification to maximise production efficiency whilst minimising the effects on the environment however there is increased risk of nutrient

[29] http://www.agriculture.gov.ie/media/migration/foodindustrydevelopmenttrademarkets/agri-foodandtheeconomy/foodwise2025/environmentalanalysis/AgriFoodStrategy2025NISDRAFT300615.pdf

Plan	Key Types of Impacts	Potential for In-combination Effects and Mitigation
products sector by 70% to in excess of €13 billion.	▪ Nitrogen deposition ▪ Disturbance to habitats / species	discharge to receiving waters and in turn a potential risk to biodiversity and Europe Sites if not controlled. With the required mitigation in the Foodwise Plan, no significant in-combination impacts are predicted. Mitigation measures included cross compliance with 13 Statutory Management Requirements, EIA Agricultural Regulations 2011, GLAS, and AA Screening of licencing and permitting in the forestry and seafood sectors.
Rural Development Programme 2014 – 2020 The agricultural sector is actively enhancing competitiveness whilst trying to achieve more sustainable management of natural resources. The common set of objectives, principles and rules through which the European Union co-ordinates support for European agriculture is outlined in the Rural Development Programme (RDP) 2014-2020 under the Common Agricultural Policy. The focus of the programme is to assist with the sustainable development of rural communities and while improvements are sought in relation to water management, the objectives posed by the RDP are different from those contained in the RBMP. However, within the RDP are two targeted agri-environment schemes; Green Low Carbon Agri-Environment Scheme (GLAS) and Targeted Agriculture Modernisation Scheme (TAMS). They provide the role of a supportive measure to improve water quality and thus provide direct benefits in achieving the measures within the RBMP. The achievement of the objectives outlined within GLAS, to improve water quality, mitigate against climate change and promote biodiversity will be of direct positive benefit in achieving the measures within the RBMP and the goals of the Natura Directives. The scheme has an expected participation for 2014-2020 of 50,000 farmers which	• Overgrazing; • Land use change or intensification; • Water pollution; • Nitrogen deposition; • Disturbance to habitats / species;	The RDP for 2014 – 2020 has been subject to SEA[30], and AA[31]. The AA assessed the potential for impacts from the RDP measures e.g. for the GLAS scheme to result in inappropriate management prescriptions; minimum stocking rates under the Areas of Natural Constraints measure leading to overgrazing in sensitive habitats with dependent species, and TAMS supporting intensification. Mitigation included project specific AA for individual building, tourism or agricultural reclamation projects, consultations with key stakeholders during detailed measure development, and site-based monitoring of the effects of RDP measures. With such measures in place, it was concluded that there would be no significant in-combination impacts on Natura 2000 sites.

[30] https://www.agriculture.gov.ie/media/migration/ruralenvironment/ruraldevelopment/ruraldevelopmentprogramme2014-2020/StrategEnvironmAssessSumState090615.pdf

[31] https://www.agriculture.gov.ie/media/migration/agarchive/ruralenvironment/preparatoryworkfortherdp2014-2020/RDP20142020DraftAppropriateAssessmentReport160514.pdf

Plan	Key Types of Impacts	Potential for In-combination Effects and Mitigation
have to engage in specific training and tasks in order to receive full payment. Farmers within the scheme must have a nutrient management plan which is a strategy for maximising the return from on and off-farm chemical and organic fertilizer resources. This has a direct positive contribution towards protecting waterbodies from pollution through limiting the amount of fertiliser that is placed on the land. The scheme prioritises farms in vulnerable catchments with 'high status' waterbodies and also focuses on educating farmers on best practices to try and improve efficiency along with environmental outcomes. The TAMS scheme is open to all farmers and is focused on supporting productive investment for modernisation. This financial grant for farmers is focused on the pig and poultry sectors, dairy equipment and the storage of slurry and other farmyard manures. Within the TAMS scheme are two further schemes; the Animal Welfare, Safety and Nutrient Storage Scheme and the Low Emission Slurry Spreading Scheme. Both schemes are focused on productivity for farmers but have the ability to contribute towards a reduction in point and diffuse source pollution through improved nutrient management.		
Nitrates Directive (91/676/EEC) and Nitrates Action Programme 2017 (S.I. 605 of 2017) This Directive has the objective of reducing water pollution caused or induced by nitrates from agricultural sources and preventing further pollution. The NAP is Ireland's response to implementing the directive.	▪ Habitat degradation; ▪ Disturbance to habitats/species; ▪ Alterations to water quality and/or water movement; ▪ Nutrient enrichment; and • Alteration to air quality.	No risk of likely significant in-combination effects from the Directive as the primary purpose of is to improve environmental quality. Furthermore it is noted that the latest update to the NAP underwent AA and an NIS was prepared. This will ensure appropriate mitigation is included to prevent significant in-combination effects from occurring.
Forest Policy Review: Forests, Products and People – A Renewed Vision (2014) / Forestry Programme 2014 - 2020 Ireland's forestry sector is striving to increase forestry cover and one of the recommended policy actions in the Forest Policy Review: Forests, Products and People – A Renewed Vision (2014) is to increase the level	• Habitat loss or destruction; • Habitat fragmentation or degradation; • Water quality changes;	Ireland's Forestry Programme 2014 – 2020 has undergone AA[32]. A key recommended is that all proposed forestry projects should be subject to an assessment of their impacts and the proximity of Natura 2000 habitats and species should be taken into account when proposals are generated.

[32] https://www.agriculture.gov.ie/media/migration/forestry/publicconsultation/newforestryprogramme2014-2020/nis/ForestryProgrammeNaturalImpactStatement290914.pdf

Plan	Key Types of Impacts	Potential for In-combination Effects and Mitigation
of afforestation annually over time and support afforestation and mobilisation measures under the Forestry Programme 2014-2020. Two key objectives within the Forestry Programme 2014-2020 that will influence the RBMP are to increase Ireland's forest cover to 18% and to establish 10,000 ha of new forests and woodlands per annum. As part of this programme there are a number of schemes that promote sustainable forest management and they include the Afforestation Scheme, the Woodland Improvement Scheme, the Forest Road Scheme and the Native Woodland Conservation Scheme. Under the Native Woodland Conservation Scheme funding is provided to restore existing native woodland which promotes Ireland's native woodland resource and associated biodiversity. Native woodlands provide wider ecosystem functions and services which once restored can contribute to the protection and enhancement of water quality and aquatic habitats. New guidance and plans are also being developed to address forestry adjacent to water bodies, Freshwater Pearl Mussel Plans for 8 priority catchments and a Hen Harrier Threat Response Plan (NPWS). The mitigation measures within these plans will be particularly important in terms of protecting sensitive habitats and species from such forestry increases.	• Disturbance to species.	
Water Services Strategic Plan (WSSP, 2015) Irish Water has prepared a Water Services Strategic Plan (WSSP, 2015), under Section 33 of the Water Service No. 2 Act of 2013 to address the delivery of strategic objectives which will contribute towards improved water quality and WFD requirements. The WSSP forms the highest tier of asset management plans (Tier 1) which Irish Water prepare and it sets the overarching framework for subsequent detailed implementation plans (Tier 2) and water services projects (Tier 3). The WSSP sets out the challenges we face as a country in relation to the provision of water services and identifies strategic national priorities. It includes Irish Water's short, medium and long term objectives and identifies strategies to achieve these objectives. As such, the plan provides the context for subsequent detailed implementation plans (Tier 2) which will document the approach to be used for key water service areas such as water resource management, wastewater	• Habitat loss and disturbance from new / upgraded infrastructure; • Species disturbance; • Changes to water quality or quantity; • Nutrient enrichment /eutrophication.	The overarching strategy was subject to Appropriate Assessment and highlighted the need for additional plan/project environmental assessments to be carried out at the tier 2 and tier 3 level. Therefore no likely significant in-combination effects are envisaged.

Plan	Key Types of Impacts	Potential for In-combination Effects and Mitigation
compliance and sludge management. The WSSP also sets out the strategic objectives against which the Irish Water Capital Investment Programme is developed. The current version of the CAP outlines the proposals for capital expenditure in terms of upgrades and new builds within the Irish Water owned asset and this is a significant piece of the puzzle in terms of the expected improvements from the RBMP.		
National Wastewater Sludge Management Plan (2015) The National Wastewater Sludge Management Plan was prepared in 2015, outlining the measures needed to improve the management of wastewater sludge.	• Habitat loss and disturbance from new / upgraded infrastructure; • Species disturbance; • Changes to water quality or quantity; • Nutrient enrichment /eutrophication.	The plan was subject to both AA and SEA and includes a number of mitigation measures which were identified in relation to transport of materials, land spreading of sludge and additional education and research requirements. This plan does not specifically address domestic wastewater loads, only those relating to Irish Water facilities. A plan is proposed in relation to national drinking water sludge management to complement the NWSMP, but no details on the drinking water sludge plan are yet available. In relation to the plan as it stands, no in-combination effects are expected with the implementation of proposed mitigation measures.
Lead in Drinking Water Mitigation Plan The Government published a National Strategy to reduce exposure to Lead in Drinking Water in June 2015. In support of this strategy Irish Water, as the national public water utility has prepared the Irish Water Lead in Drinking Water Mitigation Plan in collaboration with the HSE and EPA. The plan proposes orthophosphate dosing of the water supply at various treatment sites as orthophosphate is a corrosion inhibiter that creates a coating on lead and other metal pipes which prevents the lead dissolving into the water. Orthophosphate dosing takes a period of 6-18 months to develop a full coating, after which dosing must be maintained in order to sustain the protective coating. As such, the Lead in Drinking Water Mitigation Plan has the potential to significantly impact on the objectives of the RBMP	• Introduction of orthophosphate into the water environment / nutrient enrichment / eutrophication	An AA of the Lead Mitigation Plan has been undertaken[33]. Mitigation measures proposed included a lead services replacement Standard Operating Procedure to ensure best industry practice for the management of site operation. Another measures, Corrective Water Treatment i.e. orthophosphate treatment, is proposed as an interim measure to reduce lead concentrations in drinking water. A bespoke environmental assessment methodology has been developed for the plan, in consultation with the EPA and NPWS, to ensure that risks to water bodies in the context of achieving WFD objectives and Birds and Habitats Directives, can be assessed and mitigated as the dosing programme is rolled out. Subject to the AA process which has been specified for each dosing location, and appropriate mitigation measures being identified, it is expected that there will be no in-combination effects on

[33] https://www.water.ie/projects-plans/lead-mitigation-plan/public-consultation/Lead-in-Drinking-Water-Mitigation-Plan-Natura-Impact-Statement.pdf

Plan	Key Types of Impacts	Potential for In-combination Effects and Mitigation
		Natura 2000 sites.
National Water Resources Plan (in prep.) This Framework will deliver a sustainable water supply on a catchment and water resource zone basis, meeting growth and demand requirements through drought and critical periods. The resources plan will need to take account of WFD objectives and the programme of measures proposed in the relevant catchments and water resource zones. Specific measures in the plan with relevance to Irish Water include those for urban wastewater and urban runoff and also as part of other measures in relation to the lead in drinking water.	• Increased abstractions leading to changes / pressure on existing hydrology / hydrogeological regimes.	The plan will seek to develop sustainable water supplies but must consider particularly critical drought periods when assimilation capacity for diffuse runoff may be reduced. The potential for in-combination impacts are unclear as the plan is not sufficiently developed at this stage.
National Hazardous Waste Management Plan 2010-2020 The National Hazardous Waste Management Plan 2010-2020, prepared by the EPA identifies priority actions to prevent hazardous waste, improve the collection rate of hazardous waste in certain categories, movement towards self-sufficiency in hazardous waste management for Ireland and the identification and regulation of legacy issues in relation to hazardous waste. In addition three Regional Waste Plans (Eastern-Midlands; Southern; and Connaught-Ulster) were published in 2015 to provide a framework for the prevention and management of wastes for the three defined regional area. These documents include policies and actions complementary to the draft RBMP, in particular those addressing remediation of historic and illegal landfills.	• Introduction of hazardous substances into the environment	Non-compliances with the Environmental Quality Standards for Priority Substances and Priority Hazardous Substances in Ireland is very low and not of significant concern with the exception of two ubiquitous substances (mercury and PAHs). Good chemical status can only be achieved if there are no breaches of Environmental Quality Standards for any priority substance. In relation to the RBMP, this will influence for example, certain agricultural practices including the application of herbicides and pesticides and the use of sheep dip. The National Hazardous Waste Management Plan has been subject to Screening for AA. The revised plan has been screened out for AA, however, any specific plan or project proposal relating to or arising out of the recommendations in the revised plan will need to be subjected to the AA processes at the level of the more details sectoral plans and ultimately at individual project level[34]. As such, no in-combination effects are expected with the RBMP.
Harnessing our Ocean Wealth - an Integrated Marine Plan for Ireland 2012 Ireland aims to have the ocean become a key component for economic	• Hydromorphological impacts through ports,	This increased productivity and activity is likely to have implications for estuaries and transitional waters under the

[34] http://www.epa.ie/pubs/reports/waste/haz/NHWM_Plan.pdf

Plan	Key Types of Impacts	Potential for In-combination Effects and Mitigation
recovery and sustainable growth. As a national asset the potential of the Irish Sea is seen as something to be harnessed as outlined in Harnessing our Ocean Wealth an Integrated Marine Plan for Ireland 2012. Three high-level goals have been developed: Ireland will utilise market opportunities to improve the maritime economy and create sustainable growth; Improve the health of the sea ecosystems for economic benefit, and goods and services such as food, climate, health and well-being; and Encourage engagement with the sea to increase awareness of its value. There are two key targets: Double the value of our ocean wealth to 2.4% of GDP by 2030; and increase the turnover from our ocean economy to exceed €6.4bn by 2020.	harbours, piers, marinas – infrastructure expansion • Introduction of invasive alien species • Introduction of polluting matter to the marine environment	RBMP e.g. impacts to designated shellfish waters.
National Peatlands Strategy (NPS) and Raised Bog SAC Management Plan The National Peatlands Strategy has been developed to give direction to Ireland's approach to peatland management including bog conservation and restoration, over the coming decades. The strategy was developed to deal with long term issues such *"as land management and development, restoration, conservation, tourism potential, carbon accounting and community participation in managing this resource"*. In addition to the strategy the National Parks and Wildlife Service are close to publishing the National Raised Bog SAC Management Plan which is being produced to outline the approach to be taken specifically for the conservation and management of the 53 Raised Bog SAC sites. It is be informed by and will support the aims of the National Peatlands Strategy. It is intended that a Site Specific Management Plan will be developed for each of the 53 SAC sites, which will identify the specific measures to be applied to the specific site.	▪ Habitat loss or destruction; ▪ Habitat fragmentation or degradation; ▪ Alterations to water quality and/or water movement.	The Raised Bog SAC Management Plan was subject to its own AA[35]. The NPS will ensure protection of peatlands in terms of sustainable peat extraction and land use utilisation e.g. wind farms or forestry. This plan would not be expected to conflict with any aspects of the RBMP but to positively interact with it and outline a series of considerations in relation to peatlands. Therefore there is no likely significant in-combination effects foreseen.
Marine Strategy Framework Programme of Measures 2015 and the forthcoming Marine Spatial Plans (in prep and due in 2021) The Marine Strategy Framework Directive (2008/56/EC) has adopted an ecosystem-based approach to protect and manage the marine environment. This forms an integral component of maritime spatial	▪ N/A – complimentary plans to the RBMP with aim of protection of the marine environment ▪ MSFD is identified as an	The MSFD Programme of Measures[36] have not been subject to AA as all measures included within the POMs are currently being applied in Ireland under existing Directive implementation e.g. WFD POMs, marine planning and licensing etc.

[35] https://www.npws.ie/sites/default/files/general/Natura%20Impact%20Statement%20of%20DNRBSACMP.pdf
[36] http://www.housing.gov.ie/sites/default/files/public-consultation/files/outcome/msfd_poms_summary_report.pdf

Plan	Key Types of Impacts	Potential for In-combination Effects and Mitigation
planning within the EU and requires Member States to develop a strategy to achieve or maintain good environmental status in their marine waters by 2020. Ireland has developed a Programme of Measures that will meet targets set in order to achieve or maintain good environmental status. This is of direct relevance to the RBMP which is required under the WFD which sets a goal of achieving good ecological status for all EU ground and surface waters (including intertidal, transitional and coastal waters), which directly complements the goal of good environmental status under the Marine Strategy Framework Directive. The Marine Spatial Planning Directive obliges all coastal Member States to establish maritime spatial plans as soon as possible and at the latest by 31st March 2021. This will help promote sustainable growth of maritime activities recognising the ever increasing use and exploitation of the maritime space and its resources by a number of sectors such as fishing, shipping, leisure, aquaculture and renewable energy.	environmental measures to mitigate the Harnessing Our Ocean Wealth Integrated Marine Plan for Ireland	It is recommended that when the Marine Spatial Plan(s) for Ireland are development, that they are subject to the AA process to avoid the potential for in-combination effects with other plans and programmes in the marine environment, particularly in the WFD transitional and coastal zones as relevant to the RBMP.
Northern Ireland River Basin Management Plans 2015 - 2021 The Department of Agriculture, Environment and Rural Affairs (DAERA) is responsible in Northern Ireland for producing a River Basin Management Plan for each river basin district. As with Irelands RBMP, Northern Ireland is in its second cycle of plan making which it published at the end of 2015. There are three river basin districts (RBDs); Neagh Bann International RBD; North Eastern RBD and North Western International RBD for which plans have been developed (portions in Northern Ireland only) and the published plans include the: ▪ Neagh Bann International River Basin Management Plan 2015-2021; ▪ North Eastern River Basin Management Plan 2015-2021; and ▪ North Western International River Basin Management Plan 2015-2021. The Neagh Bann River Management Plan and the North Western River Management Plan have international borders with the Republic of Ireland. It is outlined that in the plans that the responsible bodies in Northern Ireland and Republic of Ireland are coordinating their water	▪ Lack of integration between plan makers and plan implementation	Where water bodies are shared and flow between Ireland and Northern Ireland, there is potential for impacts arising from landuse activities to and from both jurisdictions. Northern Ireland have specific national legislation to protect biodiversity i.e. Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) and a strategy document "Valuing Nature – A Biodiversity Strategy for Northern Ireland to 2020". The overall status of water bodies in Northern Ireland has not significantly changed from that recorded in 2009 but improvements have been identified in water utility discharges and drinking water quality. In 2015, 32.7% of the river waterbodies were classified as 'high' or 'good' quality. The key challenges for the water bodies relate to diffuse nutrient pollution, chemical status of the water environment and measures to address physical modifications of beds, banks and shore of surface waters. Despite continued action many key elements of biodiversity continues to decline, however the wild

Plan	Key Types of Impacts	Potential for In-combination Effects and Mitigation
management actions through a North-South Working Group on Water Quality.		bird population has increased by 49% but the underlying bird populations are not increasing with the thrush and skylark in decline. In particular since 2000 grassland habitats have shown the most declines, but in contrast woodland habitats have increased. The key pressures identified relate to land-use changes through agriculture and development with additional pressures such as pollution, invasive species and fisheries practices. Cross border cooperation will be required in order to address pressures in a coherent manner.

7 SCREENING OF CHANGES TO FINAL RBMP

The following chapter assesses the changes to the RBMP between draft and final versions resulting from statutory consultation on the RBMP. The main measures and assessment of changes are laid out in **Table 7-1** to **Table 7-12** below. It is acknowledged that the layout of the final RBMP has evolved between draft and final to better reflect the scope and content of the RBMP and furthermore to address stakeholder feedback from the public consultation. This evolution of the plan has involved editing of the supporting text to improve the flow and form of the plan, minor corrections to text and grammar and the refinement of measures.

In the following tables, the first column displays measures within the draft RBMP. The second column contains the measures as they appear in the final RBMP. Each measure was assessed for modification and any alterations are described in the third column. Deletions or major modifications to measures are indicated. Responses with regard to the environmental consequences of the changes are shown in column 4 of the following assessment tables. Where no change has been made to measures with the exception of re-numbering or where changes are of a minor nature including small edits or word changes, for brevity, the assessment has not been reproduced in this section. The screening has focused on those measures which are new or have been substantially changed / deleted.

As noted previously, the department was changed over the development of the plan from DHPCLG to DHPLG. This is reflected in the wording of the final measures below.

Table 7-1 Rural Diffuse and Point Source Pollution

Final Plan: Section 7.1 Addressing Pressures from Rural Diffuse and Point Source Pollution			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new / alteration to measures between the draft and final RBMP (Note the original impact assessment still stands)**
	New measure added 1. The new strengthened Nitrates Action Programme (2018-2021) will be the key agricultural measure for preventing and reducing water pollution from nutrients (nitrogen and phosphorus) arising from agricultural sources. It will be complimented by other supporting measures listed below.	New measure added.	No potential impact is predicted as a result of the additional measures within the Nitrates Action Programme (NAP) 2018-2021 The NAP 2018-2021 entails new strengthened water protection measures, focused on intercepting and breaking nutrient transport pathways and preventing sediment and nutrient losses to waters. The NAP was subject to the AA process and any projects falling under the requirements of the NAP shall be required to conform to the mitigation measures contained within the NIS and to the relevant regulatory provisions aimed at *preventing pollution or other* environmental effects.
R1. Existing high level measures, namely, (i) nitrates regulations, (ii) domestic waste water treatment regulations, (iii) pesticides regulations; and (iv) agriculture environmental impact assessment regulations will	3. The Pesticides Regulations and the Agriculture Environmental Impact Assessment Regulations will continue to form a key part of the actions over the second cycle. These will be strengthened by other supporting	Pesticides and Ag EIA referenced in measure text. Nitrates and DWWT Regulations deleted from measure text but included	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of

Final Plan: Section 7.1 Addressing Pressures from Rural Diffuse and Point Source Pollution			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new / alteration to measures between the draft and final RBMP (Note the original impact assessment still stands)**
continue to form a key part of the actions over the second cycle.	measures as outlined. **Nitrates and Domestic waste water regulations deleted from measure, but referenced in section text:** 7.1.1 Point Source Pollution: "The existing **Domestic Waste Water Treatment Regulations** and associated inspection regime, also set out in greater detail in Section 3, will continue to be an important measure over the period of the second cycle. The EPA has responsibility for developing and overseeing a National Inspection Plan to support the regulations." 7.1.1 High level actions to address rural and diffuse point source pollution "As set out in detail in Section 3 of this Plan, the **Nitrates Regulations** and associated Nitrates Action Programme (NAP) are the basic measures for the protection of waters from agricultural sources in the draft River Basin Management Plan."	in the preceding discussion text.	this measure see **Table 6-2** Both the Domestic Waste Water Treatment Regulations and Nitrates Regulations continue to form supporting measures for the 2nd cycle of the RBMP. These regulations along with the pesticides and agricultural EIA regulations provide the building blocks for protection of the environment and their continued implementation would be expected to have a broadly direct and indirect positive impact on water quality. While the legislation is already in place, the primary issue with this measure relates to ongoing implementation and compliance. Resources to carry out compliance inspections remains a constraint on achieving better compliance standards.
R2 The integrated Governmental approach to enforcement of the nitrates regulations will be maintained	2. The integrated Governmental approach to the enforcement of the Nitrates Action Programme (2018-	Minor rewording of the "nitrates regulations" to "Nitrates Action	The measure has not been modified between the draft and final RBMP therefore there will be no changes to

Final Plan: Section 7.1 Addressing Pressures from Rural Diffuse and Point Source Pollution			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new / alteration to measures between the draft and final RBMP (Note the original impact assessment still stands)**
and strengthened, and the interagency/inter-departmental Water Quality and Agriculture working group will ensure increased targeting of inspections by Local Authorities based on water quality results and the outputs of the characterisation process.	2021) will be maintained and strengthened. The interagency/inter-departmental Water Quality and Agriculture working group will ensure increased targeting of inspections by Local Authorities based on water quality results and the outputs of the characterisation process.	Programme (2018-2021).	the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-2.**
R3 In developing the 2018-21 National Inspections Plan for domestic waste water systems we will use the outputs of catchment characterisation to further improve the existing risk based approach set out in the current 2015-17 plan.	**Numbered measure deleted, but incorporated as part of preceding discussion text:** **7.1.1 Point source pollution:** "The EPA made minor adjustments to the methodology for the **National Inspection Plan** (NIP) 2015-2017 to take account of additional data which became available for bathing waters; high status rivers; high status lake catchment areas and shellfish designated areas recognising the particular sensitivity of these water categories to the cumulative impact of pollution discharges from defective DWWTSs."	Numbered measure deleted but included in discussion text setting out updates to the EPA methodology as a result of characterisation inputs.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-2.**

Final Plan: Section 7.1 Addressing Pressures from Rural Diffuse and Point Source Pollution			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new / alteration to measures between the draft and final RBMP (Note the original impact assessment still stands)**
	"The EPA recently consulted on the third NIP covering the period 2018-2021. An updated risk based methodology has been developed for the selection of sites for inspection based on improved information. The EPA will continue to oversee the implementation of engagement and awareness activities by the local authorities and other key stakeholders."		
R5. A joint industry/farmer/ government forum, initiated by the Irish Dairy Industry Association, will drive the development and roll out of a targeted knowledge transfer programme to effectively deliver the key learnings from the Agricultural Catchments Programme to dairy farmers. It is envisaged that this will consist of both co-operative led farm pilot programmes and wider promotion programmes for nutrient management and management of farm pollution point sources. It will be part of the evolution of the existing Origin Green scheme, promote the sustainable	5. The Dairy Sustainability Initiative, a joint industry/farmer/government forum, initiated by the Irish Dairy Industry Association, will drive the development and rollout of a targeted knowledge transfer programme to all 18,000 dairy farms, effectively delivering the key learnings from the Agricultural Catchments Programme to dairy farmers. It is envisaged that this will consist of both co-operative-led farm pilot programmes and wider promotion programmes for nutrient management and management of farm pollution point sources. **Origin Green referenced in discussion**	Minor rewording, additional reference to 18,000 dairy farms. Deletion of reference to the Origin Green scheme, but referenced as part of preceding discussion text.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-2.** This is a welcomed measure although it targets the dairy industry. The reference to the number of dairy farms targeted by this measure is welcomed as it encompasses all 18,000 dairy farms. With the likelihood of intensification in dairy farming to satisfy targets in Food Wise 2025, a robust and tested evidence base will

Final Plan: Section 7.1 Addressing Pressures from Rural Diffuse and Point Source Pollution			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new / alteration to measures between the draft and final RBMP (Note the original impact assessment still stands)**
development of the sector, and provide benefits in terms of economic viability, water quality and climate impact.	**text instead:** **Programme of Measures – Summary of Key Measures** • Knowledge transfer programmes within the agriculture sector will be used to promote better nutrient management and farm point source management. The approach to this will have three strands. O The National Dairy Sustainability Forum will aim to collaboratively address… It is envisaged that this approach will be part of an evolution of the existing Origin Green scheme.		significantly improve outcomes in terms of water quality. Knowledge transfer will have a broadly positive impact for protected areas.
R6. In addition, and to promote the adoption of best environmental practice across different sectors of agriculture, €100m has been allocated from the RDP for a knowledge transfer programme with the purpose of up-skilling farmers and agricultural advisors. Over the lifetime of the RDP, this programme will roll out	6. In addition, and to promote the adoption of best environmental practice across different sectors of agriculture, €100m has been allocated from the RDP for a knowledge transfer programme with the purpose of up-skilling farmers and agricultural advisors. Over the lifetime of the RDP, this programme will roll out	No change to first part of measure. No other reference to farmers receiving compensation, or to farm improvement plans/ sustainable management plans.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-2.** A Farm Improvement Plan is to be completed as part of the requirement

Final Plan: Section 7.1 Addressing Pressures from Rural Diffuse and Point Source Pollution			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new / alteration to measures between the draft and final RBMP (Note the original impact assessment still stands)**
professional advisory and knowledge transfer services to around 27,000 farmers across all sectors on a voluntary basis. Farmers will receive compensation for participating in targeted knowledge transfer groups and the professional agricultural advisors will be trained in facilitating such groups and will also receive compensation for facilitating groups. One of the core requirements for participants in the knowledge transfer measure will be the completion of a farm improvement plan which includes a sustainable management plan.	professional advisory and knowledge transfer services to around 27,000 farmers across all sectors on a voluntary basis. **Second part of measure deleted**		of the Knowledge Transfer Programme. The support structures available to farmers for the plan are detailed within the Summary of the Rural Development Programme 2014-2020.
	New measure added 4. A new collaborative initiative between Government and industry called the "Sustainability Support and Advisory Programme" is being put in place for cycle 2 (2018-2021) to support (i) the implementation of best practice in 190 prioritised Areas for Action to address existing environmental pressures (see section on regional implementation) and (ii) best practice across all dairy farmers through the	New measure added.	The addition of this measure is considered to have a potential positive impact. A characterisation and technical assessment was carried out on all water bodies at a catchment scale and a selected number of water bodies were chosen as priority 'Areas for Action' where resources can be focussed during the life of the RBMP.

Final Plan: Section 7.1 Addressing Pressures from Rural Diffuse and Point Source Pollution			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new / alteration to measures between the draft and final RBMP (Note the original impact assessment still stands)**
	Dairy Sustainability Initiative. Thirty sustainability advisors will be assigned to the programme, twenty of whom will be located in Teagasc while ten will operate within the dairy processors' organisational structures. The objective of the new approach is to encourage and support behavioural change, facilitate knowledge transfer and achieve better on-farm environmental outcomes.		The most significant pressure on water bodies identified by the characterisation process was agriculture. A major constraint on achieving targets for these prioritised areas and the implementation of best practice measures is the requirement for additional resourcing. This new measure provides detail of staffing for the implementation of the 2nd cycle and specifically targets a significant pressure on water quality. The thirty sustainability advisors will be resourced as part of the "Sustainability Support and Advisory Programme" which will focus on improved nutrient management with more targeted use of fertiliser, better farmyard practice, more widespread use of sustainability approaches developed by Teagasc and the development of new approaches in critical source areas. In order to achieve targets in priority areas for action where environmental pressures on water quality other than

Final Plan: Section 7.1 Addressing Pressures from Rural Diffuse and Point Source Pollution			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new / alteration to measures between the draft and final RBMP (Note the original impact assessment still stands)**
			agriculture have been identified will still require resourcing.

Table 7-2 Urban Waster Water and Urban Run-off

Final Plan: Section 7.2 Addressing Pressures from Urban Waste Water			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new or alteration to measures between the draft and final RBMP (Note the original assessment still stands)**
UWW2 Compliance with the requirements of the UWWTD and EPA discharge licence Emission Limit Values will be achieved through the implementation of the Irish Water Business Plan and associated Irish Water Investment Programme.	**Numbered measure deleted - no other text in section**	**Business Plan only mentioned in Section 9:** **9.6.1 Projected costs and the economic regulation of public water services** "The Irish Water business plan sets out a plan for meeting a number of objectives, including transforming the operational model, evolving into a high performance utility, delivering operational cost savings of €1.1bn over the period to 2021, and implementing a €5.5 billion capital investment programme. Both the WSSP and the Business Plan set compliance with the requirements of EU directives and regulations as priorities."	The proposed modification will not result in any changes to the assessment already completed for the NIS. Compliance with EU directives and regulations has been set as a priority within the Irish Water Business Plan. The final RBPM references that "The EPA is responsible for licensing and regulating urban waste water discharges". Conditions are set with authorisations including ELVs to address the requirements of the UWWT Directive when a licence is granted. In addition "It is the responsibility of Irish Water to comply with the requirements of these licenses and authorisations" Furthermore the RBMP notes that "environmental regulation through the EPA and economic regulation through the CRU ensures that the plans and programmes of Irish Water are consistent with meeting environmental

Final Plan: Section 7.2 Addressing Pressures from Urban Waste Water			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new or alteration to measures between the draft and final RBMP (Note the original assessment still stands)**
			obligations and are delivered in an economically efficient manner". Therefore the investment by Irish Water through the Irish Water Business Plan and associated Irish Water Investment Programme in order to meet the minimum requirements of the UWWTD and comply with EPA discharge licence Emission Limit Values still stand.
UWW3 Over the period 2017-2021 Irish Water plan to invest approximately €1.7bn in wastewater projects, programmes and asset maintenance, of which approximately €880m is planned for major waste water treatment projects and approximately €350m for capital investment in collection systems. This investment will result in 105 new or upgraded treatment plants in agglomerations or urban areas and works on collection networks in 41 areas.	1. Over the period 2017-2021 Irish Water will invest approximately €1.7bn in wastewater projects, programmes and asset maintenance. This investment will include; €880m planned for 255 major waste water treatment projects, €350m for capital investment in collection systems in 41 areas and €465m for capital maintenance and the national upgrades programme.	Rewording to include no. of collection systems, but removal of no. of treatment plants to be upgraded.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-3.** While the total amount invested into waste water projects has not changed (€1.7bn), the number of treatment plants to be upgraded is continually evolving and cannot be confirmed. The addition of a figure that will be invested into capital maintenance and national upgrades is welcomed.

Final Plan: Section 7.2 Addressing Pressures from Urban Waste Water			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new or alteration to measures between the draft and final RBMP (Note the original assessment still stands)**
UWW6 Irish Water will commence developments of their Wastewater Compliance Strategy in 2017. This will build on existing plans, projects and programmes and provide a long term strategy for ensuring compliance with the requirements of the UWWTD and meeting the requirements of river basin management plans in a cost effective manner.	7. Irish Water will commence developments of its Wastewater Compliance Strategy in 2018. This will build on existing plans, projects and programmes and provide a long term strategy for ensuring compliance with the requirements of the UWWTD and meeting the requirements of river basin management plans in a cost effective manner.	Minor revision of start date from 2017 to 2018. No other change.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-3.**
UWW7 The outcomes of the EPA review of nutrient sensitive areas will be implemented. Waste water discharges into the catchments of newly identified nutrient sensitive areas will be subject to the relevant requirements of the UWWTD.	**Numbered measure deleted**	Section 4.7.2 Nutrient Sensitive Areas, notes that the EPA carried out this review and 26 of the associated agglomerations now have the required nutrient removal in place. The remaining 16 are scheduled for upgrade in 2021. Section 8.4 Achieving the Requirements: Nutrient Sensitive Areas, notes that following this review the Minister of DHPLG will also consider formal designation of additional nutrient sensitive areas.	No potential for impact as result of deletion of the measure. Implementation of the outcomes of the EPA review have already been conducted with nutrient removal in 26 agglomerations and a further 16 agglomerations discharging to designated nutrient sensitive areas are scheduled for upgrade in 2021. The scheduled date for improvement works is welcomed and will have a direct positive impact for waterbodies within European Sites hydrologically connected to the agglomerations. However, there is potential for negative impacts to material assets due to the

Final Plan: Section 7.2 Addressing Pressures from Urban Waste Water			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new or alteration to measures between the draft and final RBMP (Note the original assessment still stands)**
			additional responsibility of the treatment plants identified to produce a higher quality effluent. Additional or upgrades to infrastructure may be required which may result in temporary negative impacts to the receiving environment. Proposed works will need to be screened for EIA and AA as a minimum as per normal planning and environmental assessment processes. As a result of the review, the consideration of formal designations of additional nutrient sensitive areas is also welcomed and if implemented will have further potential positive impacts.
	New measure/ section added 5. EPA will review urban waste water discharge licences to reflect the improved evidence base that has gone into the preparation of this River Basin Management Plan and to ensure that urban waste water licences appropriately reflect the objectives of the Plan.	Section 7.2.1 notes the efforts of the 2nd cycle RBMP to improve the evidence base and identification of priorities.	The addition of this measure is considered to have a potential positive impact. Using the improved evidence base which has emerged from EPA characterisation work will help ensure effective measures are put in place for discharge licenses and will have knock on benefits for water quality in protected areas.

Table 7-3 Forestry

Final Plan: Section 7.3 Addressing Pressures from Forestry			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new or alteration to measures between the draft and final RBMP (Note the original assessment still stands)**
F1 Forestry Services will implement regulations, policies and requirements related to forestry which are being realigned with national water policy.	1. DAFM will implement the regulations, policies and requirements related to forestry which are being realigned with national water policy.	Slight rewording from Forestry Service to DAFM. No other change.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-4.**Table 6-4
F3 Forestry Services will promote the uptake of native woodland establishment and conservation scheme and the environmental enhancement of forests scheme.	3. DAFM will promote the uptake of the Native Woodland Establishment Scheme and the Native Woodland Conservation Scheme, and will finalise and launch the Environmental Enhancement of Forests Scheme.	Slight rewording from Forestry Service to DAFM, added 'finalisation and launch' of the enhancement scheme.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-4.**
F4 With regard to the protection of Freshwater pearl mussel population from forestry pressures, Forestry Services will develop and implement plans for the protection of designated populations of Freshwater pearl mussel from forestry pressures; and to complete the ongoing KerryLife project with project partners.	4. With regard to the protection of Freshwater Pearl Mussel population from forestry pressures, DAFM will develop and implement the proposed Plan for Forestry & FMP in Ireland, and continue its engagement with KerryLIFE, with a view to assessing and adopting appropriate measures for possible wider application.	Rewording from Forestry Service to DAFM, and from 'plans' to 'Proposed Plan for Forestry & FMP'. Revision of 'complete KerryLIFE' to continue engagement and assess/adopt its measures for wider application.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-4.**
F5 Forestry Services will work with other stakeholder, in particular local authorities, to ensure the strategic	5. Through the strengthened interagency co-operation structures, DAFM will work with other	Slight rewording from Forestry Service to DAFM, addition of 'particular focus'	The proposed modification will not result in any changes to the assessment

Final Plan: Section 7.3 Addressing Pressures from Forestry			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new or alteration to measures between the draft and final RBMP (Note the original assessment still stands)**
deployment of forestry measures to protect high status waters and progress the other priorities set out in this river basin management plan.	stakeholder, in particular local authorities, to ensure the strategic deployment of forestry measures. Particular focus will be given to the protection of high status objective waters and to progress the other priorities set out in this River Basin Management Plan.	Measure essentially the same.	already completed for the NIS. For the original impact assessment of this measure see **Table 6-4.**

Table 7-4 The Harvesting of Peatlands

Final Plan: Section 7.4 Addressing Pressures from the Harvesting of Peatlands			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new or alteration to measures between the draft and final RBMP (Note the original assessment still stands)**
PH1 The Minister for Housing, Planning, Communityand Local Government intends to enact regulations in 2017 to (1) require the Environmental Protection Agency to carry out EIA for all existing and new large-scale peat extraction (>50ha) as part of its examination of IPC licence applications for the activity and (2) bringing smaller scale commercial peat harvesting under a new local authority licensing system incorporating EIA, as necessary.	1. The Minister for Housing, Planning and Local Government intends to make regulations as soon as possible that will require the Environmental Protection Agency to carry out EIA for all existing and new large-scale peat extraction (> 30ha) as part of its examination of IPC licence applications for the activity. When these regulations are made, proposals will be developed for public consultation relating to a new regulatory regime that will bring smaller-scale commercial peat extraction (≤ 30ha) under a new local authority licensing system incorporating EIA and AA, as necessary, and enforcement powers.	Department name update, deletion of regulation delivery date of 2017, revision from 50ha to 30ha, addition of proposals for public consultation on the new regulatory regime.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-5.** The reduction in the extraction area subject to EIA as part of the EPAs examination of IPC licence applications is welcome.
PH2 The Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs will oversee the implementation of the Peatland Strategy, the principal aim of which is to provide a framework for determining and ensuring the most appropriate future use of cutover and cutaway bogs.	2. The Department of Culture, Heritage and the Gaeltacht together with the Peatlands Strategy Implementation Group will oversee the implementation of the National Peatland Strategy and the first national management plan for Ireland's raised bog Special Areas of Conservation (SACs) network. The	Dept. name update, addition of overseeing implementation of SAC Raised Bog Plan. Expanded text on the principal aims of Peatland Strategy .	Potential positive impact as a result of update to measure between the draft and final RBMP. The linkage between the DCHG and Peatlands Strategy Implementation Group is a positive measure. The draft National Peatlands Strategy[37] highlights

[37] https://www.chg.gov.ie/app/uploads/2015/09/draft-national-peatlands-strategy.pdf

Final Plan: Section 7.4 Addressing Pressures from the Harvesting of Peatlands			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new or alteration to measures between the draft and final RBMP (Note the original assessment still stands)**
	principal aims of these are to (1) provide a long-term framework within which all of the peatlands in the State can be managed responsibly in order to optimise their social, environmental and economic contribution to the well-being of this and future generations. and, in the case of the National Raised Bog Special Areas of Conservation Management Plan 2017-2022, (2) specifically set out a roadmap for the long-term management, restoration and conservation of protected raised bogs in Ireland.		that the Peatlands Group, in consultation with the Peatlands Council will assess current activities, including those of NGOs, and make recommendations to Government regarding further measures that may be required to inform the public of the economic, social and environmental benefits of responsible peatlands management. This will have potential knock on positive impacts to water quality. The additional text expanding the aims of the Peatland Strategy provides further detail strengthens the linkage between the RBMP and National Peatland Strategy. For the original impact assessment of this measure see **Table 6-5.**
PH4 Bord na Mona, in conjunction with the EPA, will assess measures to mitigate the generation and impact of ammonia from their cutaway peatlands.	**Numbered measure deleted, altered wording of measure included in preceding text in Section 5 and 7** **5.3.2 Significant Pressures** **Peat Extraction** "… The EPA plans to investigate the background concentrations of ammonia in peatlands to determine if they can be a	Measure essentially an action under Bord na Mona's Biodiversity Action Plan.	The measure has not been modified between the draft and final RBMP therefore there will be no changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-5.**

Final Plan: Section 7.4 Addressing Pressures from the Harvesting of Peatlands			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new or alteration to measures between the draft and final RBMP (Note the original assessment still stands)**
	contributory factor in elevated ammonia concentrations in water bodies." **7.4.1 Programme of measures to address pressures from harvesting of peatlands** **Bord Na Mona's Sustainability 2030 Strategy and Biodiversity Action Plan 2016-2021** • Trialling ammonia attenuation/ retention opportunities in cutaway peatlands		Clarification has been provided regarding responsibilities and actions in terms of implementing measures for ammonia in peatlands.
	New measure added **7.4.1 Programme of measures to address pressures from harvesting of peatlands** **Bord Na Mona's Sustainability 2030 Strategy and Biodiversity Action Plan 2016-2021** 4. Bord Na Móna will rehabilitate an additional 25 peatlands covering approximately 9,000ha by 2021. This is subject to several assumptions including the availability of cutaway bogs for rehabilitation.	New measure added. Measure essentially an action under Bord na Mona's Biodiversity Action Plan; rehabilitation of cutaway bogs is required under IPC licensing conditions.	The addition of this measure is considered to have a potential positive impact. In particular 11 of the peatlands identified to be rehabilitated are associated with 12 waterbodies *At risk* of achieving WFD objectives. While each cutaway bog area is rehabilitated in a manner appropriate to the environmental conditions of the site, the general rehabilitation approach is to facilitate the rewetting of cutaway where possible.

Final Plan: Section 7.4 Addressing Pressures from the Harvesting of Peatlands			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new or alteration to measures between the draft and final RBMP (Note the original assessment still stands)**
			Not all cutaway areas will have the capacity to be rewetted due to environmental conditions on the site and land-use in adjoining areas. Any rehabilitation measures however will have a positive impact on biodiversity in general, with some areas becoming habitat and species hotspots according to local characteristics. Furthermore likely indirect positive impact includes the improvement of water quality as a result of rehabilitation.
	New measure added 5. The EPA has put forward a research topic relating to this priority issue for inclusion in its 2018 research call. The proposal involves evaluating mitigation strategies for improving water quality from drained peatlands. The project proposal, if selected, is intended to integrate with the ongoing mitigation trials being undertaken by Bord Na Móna.	New measure added Measure wording identical to preceding discussion text.	The addition of this measure is considered to have a potential positive impact. The draft National Peatland Strategy identifies the need to manage the appropriate exploitation of peatland so as to ensure that that exploitation does not result in damage to protected sites or to the wider environment, that soils are protected and in particular that water quality is delivered. The measure strengths the link between the National Peatlands Strategy and the RBMP. In addition, the new measure builds on using scientific evidence to inform mitigation and rehabilitation plans

Final Plan: Section 7.4 Addressing Pressures from the Harvesting of Peatlands			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new or alteration to measures between the draft and final RBMP (Note the original assessment still stands)**
			which will have a positive impact on improving water quality from drained peatlands in future mitigation strategies.

Table 7-5 Invasive Species

Final Plan: Section 7.5 Protecting Water Bodies from Invasive Species			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration to measures between the draft and final RBMP (Note the original assessment still stands)**
IAS1 EU Regulation (1143/2014) on 'the prevention and management of the introduction and spread of invasive alien species' will be implemented, with overall responsibility resting with DAHRRGA, with many other actors required to ensure implementation.	1. EU Regulation (1143/2014) on 'the prevention and management of the introduction and spread of invasive alien species' will be implemented, with overall responsibility resting with DCHG, with many other actors required to ensure implementation.	Minor revision to Department name.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-6.**
IAS2 Clear governance arrangements for managing aquatic IAS in Ireland, including the assignment of responsibilities and development of agreed co-ordination mechanisms, will be put in place. This work will continue to be led by DAHRRGA and will seek to promote cross-border co-operation on the issue.	2. Clear governance arrangements for managing aquatic IAS in Ireland, including the assignment of responsibilities and development of agreed co-ordination mechanisms, will be put in place. This work will continue to be led by DCHG and will seek to promote cross-border co-operation on the issue.	Minor revision to Department name.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-6.**
IAS3 DAHRRGA will also lead on the development of management plans for priority IAS, with priority given to high impact IAS were eradication or control is possible.	3. DCHG will also lead on the development of management plans for priority IAS, with priority given to high impact IAS were eradication or control is possible.	Minor revision to Department name.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-6.**
IAS5 The relevant State bodies, in particular DAHRRGA/NPWS and IFI, and supported by LAWCO, will work to	5. The relevant State bodies, in particular DCHG/NPWS and IFI, and supported by LAWCO, will work to	Minor revision to Department name.	The measure has not been modified between the draft and final RBMP therefore there will be no changes to

Final Plan: Section 7.5 Protecting Water Bodies from Invasive Species			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration to measures between the draft and final RBMP (Note the original assessment still stands)**
harness community and stakeholder involvement and support to ensure the long-term management and control of IAS.	harness community and stakeholder involvement and support to ensure the long-term management and control of IAS.		the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-6.**
IAS6 EPA will continue to fund research on IAS including those impacting on the water environment.	6. EPA will continue to fund research on IAS including those impacting on the water environment. In particular, a new research proposal developing guidance and biosecurity protocols to reduce the impacts of IAS on the ecological status in water will be prioritised in the EPA's 2018 water research call.	Same measure wording and expanded to include development of biosecurity protocols.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-6.**

Table 7-6 Improving the Physical Condition of the Water Environment

Final Plan: Section 7.7 Measures to Protect and Improve the Physical Condition of the Water Environment			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
HYMO1 Existing regulations providing for EIA to (1) mitigate the impact of planned land-use changes on waters and (2) which reduce the threshold for exempted development threshold for drainage of wetlands from 20 hectares to 0.1 hectares will continue to be implemented.	1. Existing regulations which (i) provide for EIA to mitigate the impact of planned land-use changes on waters and (ii) reduced the threshold for exempted development threshold for drainage of wetlands from 20 hectares to 0.1 hectares will continue to contribute to protecting surface waters from deterioration.	Minor wording change from '…will continue to be implemented' to '…will continue to contribute to protecting surface waters from deterioration'.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-7.**
HYMO3 The EPA, with the support of other agencies, will develop the evidence base regarding the link between physical integrity of water bodies on ecological status and defining appropriate environmental supporting conditions with regard to hydromorphology.	3. The EPA, with the support of other agencies, will develop the evidence base regarding the link between physical integrity of water bodies and ecological status. The EPA will also define appropriate environmental supporting conditions with regard to hydromorphology.	Minor wording addition ('defining appropriate…' to 'EPA will also define appropriate…'). No other change, measure is same.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-7.**

Table 7-7 Abstraction Pressures

Final Plan: Section 7.7 Measures to protect and improve our water bodies			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
ABS1 The EPA is currently reviewing the national hydrometric monitoring programme. From the review it will identify the revisions necessary to provide the required flow and water level estimates needed to assess the impact of abstraction pressures on surface water and groundwater bodies.	**Deleted measure**	Noted in preceding text that the review of the National Hydrometric Programme was completed in 2017, with the EPA having upgraded its modelling capability to better inform water balance assessments.	No potential for impact as result of deletion of the measure. The review process has been completed in the interim between the draft and final RBMP. The results will help to inform monitoring of abstractions and will use scientific evidence to inform revisions to the hydrometric monitoring programme.
ABS2 The EPA will undertake further assessment of the 4% of water bodies identified as potentially at risk of over-abstraction. This will establish if any of these water bodies are failing to meet their objectives under the WFD and advise on appropriate measures to mitigate the pressures.	1. The EPA will undertake further assessment of the 6% of water bodies identified for further review to determine if abstractions are posing a risk to the environmental objectives under the WFD and will advise on appropriate measures to mitigate the pressures.	Updated from 4% to 6%. Slight rewording.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-8.** The change in the percentage of water bodies identified for further review reflects the completion of characterisation work in the interim between the draft and final RBMP.
ABS3 The Department of Housing,	2. The Minister for Housing, Planning	Update from 2017 to 2018.	The proposed modification will not

Final Plan: Section 7.7 Measures to protect and improve our water bodies			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
Planning, Community and Local Government will in 2017 progress legislative proposals to establish a comprehensive and maintained register for water abstractions greater than 25 cubic meters per day.	and Local Government will make regulations in early 2018 to establish a comprehensive and maintained register for water abstractions greater than 25 m^3/day.	Update from progress proposals to make regulations and department name. Slight rewording.	result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-8.**
ABS4 The Department of Housing, Planning, Community and Local Government will consult on a proportionate and risk-based framework for the regulation of relevant abstractions with the view to progressing the necessary legal and administrative regulation to ensure continued sustainable use of our water resources.	3. The Department of Housing, Planning and Local Government will begin a consultation on an appropriate regulatory framework for abstractions greater than 25 m^3/day per day with the view to progressing the primary legislation to the Houses of the Oireachtas for consideration later in 2018.	Added progress to late 2018. Slight rewording.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-8.** The date for bringing legislation for consideration to the Houses of the Oireachtas is a welcome addition.
	New measure added 4. Irish Water will publish Ireland's first National Water Resource Plan by the end of 2018 following public consultation.	Preceding text notes that Irish water has statutory responsibility for management of water resources, and the delivery of the National Water Resources Plan.	The addition of this measure is considered to have a potential positive impact. The main objective of The National Water Resources Plan (NWRP) is to set out how Irish Water intends to maintain the supply and demand for drinking water over the short, medium and long term whilst minimising the

Final Plan: Section 7.7 Measures to protect and improve our water bodies			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
			impact on the environment. The NWRP will form a linkage with the RBMP and pressures highlighted within the RBMP of particular relevance to the NWRP includes; Physical modification and Abstractions/Diversion. The construction and operation of water resource options has the potential to impact on water quality, the NWRP is subject to the SEA, AA process which is currently in progress and the public consultation on the SEA Scoping report is currently under review.

Table 7-8 Overview of Measures to Address Other Pressures

Final Plan: Section 7.8 Overview Measures to Address Other Pressures			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
OP1 The forthcoming National Planning Framework will integrate with this River Basin Management Plan. To support this, following the adoption of the RBMP and completion of the NPF, DHPCLG will prepare high level guidance for planning authorities on the relationship between physical planning and river basin management planning. This guidance will provide a methodology for planning authorities to ensure that relevant plans and planning decisions are consistent with River Basin Management Plans and the requirements of the Water Framework Directive.	**Numbered measure deleted, now part of text** **7.8.1 Land use planning and water** **7.8.1.1 Guidance for planning authorities on taking River Basin Management Plan objectives into account during the physical planning process** **"…**, the Department of Housing, Planning and Local Government (DHPLG) has scoped out a project to develop detailed guidance to assist planners in their role, and also to assist developers and other stakeholders in making appropriate applications for planning permission… Consultancy services are currently being procured and will be in place in early 2018. It is expected that the guidance will be published in 2019. Training for planning authorities in the application of the guidance will also be necessary…. Furthermore, supplementary supporting technical guidance on best available environmental practices for the mitigation of physical development	Numbered measure deleted, similar and expanded text with dates now part of section text.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-9.** The additional clarity provided by guidance is welcomed as well as the date set for publication of such guidance.

Final Plan: Section 7.8 Overview Measures to Address Other Pressures			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
	impacts on water ecological status will be prepared… It is intended that the technical guidance underpinning the planning and water guidance will be periodically updated and expanded as best available knowledge and practices are improved (see below)."		
OP2 OPW will undertake project level assessment of all relevant proposed physical flood management measures before submitting plans for exhibition, including, where necessary, a detailed appraisal under Article 4 of the WFD.	**Numbered measure deleted, now part of text:** **7.8.2 The assessment and management of flood risk** **Assessing the potential impact of flood protection projects on WFD objectives** "…Following approval of the FRMPs, the next stage in progressing the proposed flood risk management measures will be to undertake more detailed assessment and design at a project level, before submitting the proposals for planning permission…" **New potential measure/ section added** **The potential role of Natural Water Retention Measures (NWRMs) as part of the suite of RBMP mitigation measures for cycle 2** "… (NWRMs) could potentially be used as mitigation measures to address	Numbered measure deleted, but similar wording now part of section text. Additional sub-section related to water also added after WFD water appraisal on NWRMs.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-9.** No potential for impact as a result of the addition of the new measure. Through the consultation process the support for NWRMs was highlighted. NWRMs work by storing or attenuating water in the environment, allowing it to be released slowly, either as runoff to rivers and streams or by soakage to the water-table. By slowing or reducing runoff, flood flows downstream can be reduced. NWRM have already been successfully trialled in Ireland in the River Tolka constructed wetland scheme and the Restoration of Durrow

Final Plan: Section 7.8 Overview Measures to Address Other Pressures			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
	water quality problems as part of the second RBMP programmes of measures…. The EPA intends to fund further research on NWRM by prioritising a research project in the 2018 Water Research Call. The project proposal was developed in collaboration with OPW…"		floodplain alluvial woodland scheme. The additional measure includes research to strengthen evidence base for suitable mitigation to address water quality issues.
OP3 DHPCLG will work to ensure that relevant actions relating to the water environment are addressed in the National Climate Change Adaptation Framework.	**Numbered measure deleted, now part of text** **7.8.3 Climate change adaptation** "The NAF will require the Minister for Housing, Planning and Local Government to prepare a specific sectoral adaptation plan in relation to water quality and water services infrastructure… The Department is committed to drafting a comprehensive, whole-of-sector plan within the timeframe specified…" "National adaptation policy in Ireland is co-ordinated through a national adaptation steering committee… The water sector is represented on the sectoral committee by the Department of Housing, Planning and Local Government and Irish Water."	Numbered measure deleted, but similar and expanded wording now part of section text.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-9.** The additional text displays the linkage between the RBMP and the National Adaptation Framework. A sectoral plan will be a crucial step in identifying the key climate vulnerabilities of the water sector in Ireland. It will also identify adaptation options that will help to build climate resilience and adaptive capacity within the water sector.
OP4 Site specific environmental	**Numbered measure deleted, now part**	Numbered measure deleted, now part	The proposed modification will not

Final Plan: Section 7.8 Overview Measures to Address Other Pressures			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
assessments will be carried out on each water supply zones where orthophosphate treatment is proposed as part of the National Lead Strategy for Drinking Water.	**of text** **7.8.4 National lead strategy for drinking water** Site-specific environmental assessments are being carried out on each water supply zone. Where a significant risk to environment receptors associated with orthophosphate treatment is identified, the necessary environmental protection measures will be implemented	of section text. Slight rewording to 'assessments <u>are</u> being carried out'.	result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-9.** Orthophosphate treatment is subject to the AA process which is currently underway and will ensure there will be no significant effect to water quality and protected water dependent habitats and species.
	New measure/ section added **7.8.5 Hazardous Chemicals in the Aquatic Environment** **7.8.5.1 Strategic approach to monitoring and managing hazardous chemicals in the aquatic environment** "…the EPA established a National Aquatic Environmental Chemistry Group (NAECG) in January 2018 to establish and maintain national expertise on hazardous chemicals in the aquatic environment, and bring a more strategic and forward-looking approach to the management of hazardous	New measure/ section added.	The addition of this measure is considered to have a potential positive impact. In the long term, this new measure will have potential knock on positive benefits for waterbodies when recommendations are implemented. Ways to maximise current resources or additional resources may be required in order to implement recommendations of the NAECG in order to achieve water quality improvements.

Final Plan: Section 7.8 Overview Measures to Address Other Pressures			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
	chemicals… NAECG is a collaborative initiative that will be used to make recommendations on the review and monitoring chemical substances of concern, assessing their risks from an environmental and human health perspective and advising on their future management…"		

Table 7-9 Protected Areas and High Status Waters: Drinking Water, Bathing and Nutrient Sensitive Areas

Final Plan: Section 8.1 Achieving the Requirements for Drinking Water Protected Areas Section 8.2 Achieving the Requirements for Bathing Water Sites Section 8.4 Achieving the Requirements for Nutrient Sensitive Areas			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
DW1 As part of the development of Drinking Water Safety Plans, Irish Water will complete 353 Source Risk Assessments by 2021.	**Numbered measure deleted, following included as part of section text:** **8.1.2 Drinking water source protection** Table 8.1 sets out Irish Water's planned programme for the completion of 353 Source Risk Assessments by the end of 2021, with the remainder being carried out in the next investment cycle.	Numbered measure deleted, now part of section text.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-10.**
	New measure/ section added **8.1.3 Drinking water source protection priorities for the second RBMP cycle** "(DAFM) has established a National Pesticides and Drinking Water Action Group (NPDWAG) the purpose of which is to support the achievement of compliance with the Drinking Water Directive pesticide standards at the point of abstraction and in treated water." "Two catchment-based initiatives will be undertaken during the second RBMP cycle to address existing non-compliance issues with the 53 drinking	New measure added.	The addition of this measure is considered to have a potential positive impact. The NPDWAG Group is chaired by DAFM and membership of the group comprises experts from the DAFM, DHPLG, Irish Water, EPA, the National Federation of Group Water Schemes, local authorities (including LAWCO), HSE, Teagasc as well as a number of other associations and groups. The NPDWAG main aims are to enhance collaboration, including linkages with other national groups, and to support awareness raising

Final Plan: Section 8.1 Achieving the Requirements for Drinking Water Protected Areas Section 8.2 Achieving the Requirements for Bathing Water Sites Section 8.4 Achieving the Requirements for Nutrient Sensitive Areas			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
	water supplies mentioned above."		around responsible pesticide and herbicide use, educating pesticides users on the potential impacts of pesticides use on drinking water quality. The new measure has the potential for knock on positive effects for protected waterbodies and/or those of high status in term of reducing pesticide impacts Ways to maximise current resources or additional resources may be required in order to implement recommendations of the NPDWAG in order to achieve water quality improvements and address non-compliance issues.
	New measure/ section added **8.1.4 Priority water supplies where pesticides exceedances are persistent** "An intensive monitoring programme will be undertaken within the four catchments prioritised by Irish Water and the EPA… The results of the monitoring will inform the development of appropriate measures,	New measure added.	The addition of this measure is considered to have a potential positive impact. The new measure has the potential for knock on positive effects for protected waterbodies and/or those of high status located within the priority water supplies in terms of reducing pesticide

Final Plan: Section 8.1 Achieving the Requirements for Drinking Water Protected Areas Section 8.2 Achieving the Requirements for Bathing Water Sites Section 8.4 Achieving the Requirements for Nutrient Sensitive Areas			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
	if necessary, and the identification of specific areas for the targeting…" "The Agricultural Sustainability Support and Advisory Programme (ASSAP) led by Teagasc referred to in Section 7.1 will provide support in promoting best environmental practice in pesticide use in these catchments." "Irish Water will establish a drinking water source protection team for the second river basin management cycle which will provide a coordination function across stakeholders and activities and any other support that it considers necessary to achieve a successful outcome."		impacts. Funding for the monitoring programme has already been identified and will be sourced from companies participating in an industry-led MCPA product stewardship scheme. The results of the programme will be used to inform the development of appropriate measures and are predicted to be broadly positive as they will seek to reduce pesticide exceedances. The establishment of a drinking water source protection team is welcomed and again has the potential for knock on positive effects in the long term for protected waterbodies and/or those of high status. Overall the long-term impacts will be positive as it will lead to an increase in protection of water sources, thereby reducing the need for water treatment.
	New measure/ section added **8.1.5 Pilot source protection programme** "From the remaining 49 water supplies	New measure added.	The addition of this measure is considered to have a potential positive impact.

Final Plan: Section 8.1 Achieving the Requirements for Drinking Water Protected Areas Section 8.2 Achieving the Requirements for Bathing Water Sites Section 8.4 Achieving the Requirements for Nutrient Sensitive Areas			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
	which showed less frequent exceedances of the pesticides standards Irish Water will, through its drinking water source protection team, coordinate a pilot programme on a subset of these 49."		The new measure will target the remaining 49 water supplies that exceed pesticide limits although less frequently than those in measure 8.1.4. The drinking water source protection team will co-ordinate a pilot programme on a sub-set of these 49 supplies. The results from the pilot programme will have the potential for knock on positive effects for protected waterbodies and/or those of high status in term of reducing pesticide impacts and improving drinking water quality. Pesticide reduction in the water supplies outside the of the pilot programmes would be based any successful measures highlighted by the pilot programmes, this would be a potential positive impact for these remaining water supplies although plans for this have not yet been stated.
DW2 Irish Water will also undertake a programme of raw water monitoring at	**Measure deleted**	No other reference to monitoring of 191 abstractions.	No potential for impact as a result of deletion of this measure as it is focused

Final Plan: Section 8.1 Achieving the Requirements for Drinking Water Protected Areas Section 8.2 Achieving the Requirements for Bathing Water Sites Section 8.4 Achieving the Requirements for Nutrient Sensitive Areas			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
191 abstraction points to support the above risk assessments.			on drinking water. Irish Water are currently undertaking 353 Source Risk Assessments to inform Drinking Water Safety Plans.
DW3 The National Federation of Group Water Schemes will continue its programme of source protection plans, with plans prepared for all relevant schemes.	**Measure deleted**	One reference to the National Federation of Group Water Schemes only noted as being part of the Action Group under Section 8.1.3 regarding pesticide levels.	No potential for impact as a result of deletion of this this measure as it is focused on drinking water. NFGWS Annual report 2017 states that "….our focus in the time ahead will be on the development and implementation of full source protection plans as part of the wider development of Water Safety Plans that will be required under the new Drinking Water Directive".
DW4 The development of source risk assessments will contribute towards the identification of appropriate mitigation measures. An integrated and co-operative approach with all stakeholders will be required for the assessment, identification and delivery	**Numbered measure deleted, but incorporated as part of section text:** **8.1.1 Public water supplies – Drinking water Safety Plans** "High level risk assessment has already been applied as part of the 2017-2021 investment planning process to help	Rewording of measure into section text . 55 source risk assessments already carried out to date, remaining 298 scheduled for completion during 2018-2021.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-10.**

Final Plan: Section 8.1 Achieving the Requirements for Drinking Water Protected Areas Section 8.2 Achieving the Requirements for Bathing Water Sites Section 8.4 Achieving the Requirements for Nutrient Sensitive Areas			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
of necessary measures and the ongoing protection of drinking water sources, which will be facilitated through the implementation structures for this RBMP.	develop a national picture of investment needs. Irish Water plans to prepare a full Drinking Water Safety Plan (DWSP) risk assessment for each water supply, but this will take a number of investment cycles to complete. A DWSP identifies all potential risks to the water supply, from catchment to consumer, and mitigation measures and procedures are put in place to manage these risks. Each DWSP will look at six elements namely, source, raw water, treatment, distribution, customer and management."		
BW1 Works will be progressed to ensure 6 bathing water areas classified as poor in 2015 meet required standards.	**Numbered measure deleted, but incorporated as part of section text:** **8.2 Achieving the Requirements: Bathing waters** "For the 7 bathing water areas rated as poor in the 2016 Bathing Water Quality Report the latest status on the required improvement works is as follows…"	Measure updated with actions and revised no. of bathing waters from 6 to 7, and 2015 to 2016.	The proposed modification will not result in any changes to the assessment already completed for the NIS. Figures have been updated to the most recent available. For the original impact assessment of this measure see **Table 6-10.**

Final Plan: Section 8.1 Achieving the Requirements for Drinking Water Protected Areas Section 8.2 Achieving the Requirements for Bathing Water Sites Section 8.4 Achieving the Requirements for Nutrient Sensitive Areas			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
	New measure/ section added **8.3 Achieving the Requirements: Nutrient Sensitive Areas** Of the existing 42 designated nutrient sensitive areas, 26 of the associated agglomerations have the required nutrient removal in place and comply with the standards. The remaining 16 agglomerations are scheduled by Irish Water for upgrade by 2021. Following the recent review of nutrient sensitive areas completed by the EPA at the request of the Minister for Housing, Planning and Local Government, the Minister will consider formal designation of additional nutrient sensitive areas. The relevant authorisations will be reviewed and amended where appropriate by EPA.	Similar to SEA assessed measure UWW7 however it deals specifically to wastewater discharges to NSAs.	No potential impact as a result of the addition of measure between the draft and final RBMP. This measure follows the requirements of the UWWT Directive. Implementation of the outcomes of the EPA review of nutrient sensitive areas have already commenced and the scheduled date for further improvement works is welcomed and will have a direct positive impact for waterbodies within European Sites hydrologically connected to the agglomerations. However, there is potential for negative impacts to material assets due to the additional responsibility of the treatment plants identified to produce a higher quality effluent. Additional or upgrades to infrastructure may be required which may result in temporary negative impacts to the receiving environment. Proposed works will

Final Plan: Section 8.1 Achieving the Requirements for Drinking Water Protected Areas Section 8.2 Achieving the Requirements for Bathing Water Sites Section 8.4 Achieving the Requirements for Nutrient Sensitive Areas			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
			need to be screened for EIA and AA as a minimum as per normal planning and environmental assessment processes. As a result of the review, the consideration of formal designations of additional nutrient sensitive areas is also welcomed and if implemented will have further potential positive impacts.

Table 7-10 Protected Areas and High Status Waters: Natura 2000

Final Plan: Section 8.5 Approach Taken to Achieving Water Conditions to Support Natura 2000 Site Objectives			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
N1 At risk water dependant Natura 2000 sites will be prioritised for supporting measures.	**Numbered measure deleted, but incorporated as part of section text:** Good Ecological Status, which is the default objective of the WFD, is considered adequate for supporting many water dependent Natura 2000 protected areas… Priority is being given to addressing those protected areas that are considered to be not meeting the required water conditions. These will be prioritised for further investigation and follow up action, as necessary. Follow up action may include the implementation of supporting measures and/or undertaking additional monitoring or research.	Expanded text, measure essentially same.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-10.** Although this is a positive measure, it must be noted that not all Natura 2000 at risk of meeting the required water quality standards/objectives will be prioritised in the 2018-2021 cycle. In addition, achievement of water quality objectives /standards may take a number of RBMP cycles and requires a long-term commitment.
N2 DAHRRGA and EPA will undertake research to develop the required water related standards to support the conservation objectives for marl and	**Numbered measure deleted, but incorporated as part of section text:**	Expanded text, measure essentially same.	The proposed modification will not result in any changes to the assessment already completed for the

Final Plan: Section 8.5 Approach Taken to Achieving Water Conditions to Support Natura 2000 Site Objectives			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
oligotrophic lakes which have been identified as potentially requiring more stringent water quality conditions.	**8.5 Approach taken to achieving water conditions to support Natura 2000 site objectives** Two priority protected habitats have been identified by the DCHG and EPA where water quality standards for GES may not be sufficient to protect these sensitive ecosystems. These are marl lakes and oligotrophic lakes. During this second cycle DCHG and EPA will prioritise these two habitats for investigation and will develop appropriate environmental supporting conditions. These will be used as a basis for informing future management measures, where necessary.		NIS. For the original impact assessment of this measure see **Table 6-10.**
N3 The DAHRRGA, with support from other agencies, will implement its strategy for designated freshwater pearl mussel areas.	**Numbered measure deleted**	Measure deleted, no other supporting text.	No potential for impact as a result of deletion of measure. The supporting roles of agencies and measures for the FWPM are discussed under Agricultural, Forestry and Protected area & high status waters sections of the RBMP.

Final Plan: Section 8.5 Approach Taken to Achieving Water Conditions to Support Natura 2000 Site Objectives			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
			"….under the national conservation strategy for the Freshwater Pearl Mussel, the DAFM, in collaboration with DCHG, is launching a €10 million Locally Led Agri-Environment Scheme (LLAES) in early 2018 funded through the Rural Development Programme for the above mentioned eight designated Freshwater Pearl Mussel areas for priority action. This is to be a bottom-up partnership approach and will build on the experiences of the KerryLIFE project….." DAFM will develop and implement the proposed Plan for Forestry & FPM in Ireland, and continue its engagement with KerryLIFE, with a view to assessing and adopting appropriate measures for possible wider application.
N4 The DAFM in collaboration with DAHRRGA will establish Locally Led Agri-Environment Schemes (LLAES) funded through the RDP for the eight priority designated Freshwater Pearl	**Numbered measure deleted, but incorporated as part of section text:** **8.5.1 Planned actions in relation to designated Freshwater Pearl Mussel**	Measure essentially same, expanded text with target date 2018 and budget. Removed reference to KerryLIFE being completed to building on the	The proposed modification will not result in any changes to the assessment already completed for the NIS.

Final Plan: Section 8.5 Approach Taken to Achieving Water Conditions to Support Natura 2000 Site Objectives			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
Mussel areas. The KerryLife project will be completed and provide important lessons for protecting other freshwater pearl mussel catchments.	**areas** In addition, under the national conservation strategy for the Freshwater Pearl Mussel, the DAFM, in collaboration with DCHG, is launching a €10 million Locally Led Agri-Environment Scheme (LLAES) in early 2018 funded through the Rural Development Programme for the above mentioned eight designated Freshwater Pearl Mussel areas for priority action. This is to be a bottom-up partnership approach and will build on the experiences of the KerryLIFE project which focused on the Caragh and Kerry Blackwater catchments. The scheme will target up to 800 participants.	experiences of KerryLIFE.	For the original impact assessment of this measure see **Table 6-10.**
N5 DAFM (Forest Service) will implement a Plan for Forestry & Freshwater Pearl Mussel in Ireland, incorporating Catchment Forest Management Plans for the 8 priority catchments and the revision of the	**Numbered measure deleted, but incorporated as part of section text:** **8.5.1 Planned actions in relation to designated Freshwater Pearl Mussel**	Wording altered to remove reference to Forest Service. Replaced 'Catchment Forest Management Plans' with 'a Forest	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of

Final Plan: Section 8.5 Approach Taken to Achieving Water Conditions to Support Natura 2000 Site Objectives			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
'Forestry & FPM Requirements'.	**areas** "In line with the national conservation strategy, DAFM will finalise and implement its Plan for Forestry & FPM in Ireland, incorporating a Forest Management Framework to identify the level of risk associated with an individual site, and to match operations appropriate to that risk." "The Native Woodland Establishment Scheme (i.e. the Woodlands for Water model) and the Native Woodland Conservation Scheme, both available under the Forestry Programme 2014-2020, are likely to be key supports regarding the implementation of the proposed Plan within both the Priority 8 FPM Catchments and the other 19 FPM catchments."	Management Framework'.	this measure see **Table 6-10.**
N6 DAHRRGA will review and revise, as necessary, the national freshwater pearl mussel conservation strategy to incorporate the findings of the above	**Numbered measure deleted, but incorporated as part of section text:** **8.5.1 Planned actions in relation to**	No change to assessed measure.	The proposed modification will not result in any changes to the assessment already completed for the

Final Plan: Section 8.5 Approach Taken to Achieving Water Conditions to Support Natura 2000 Site Objectives			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
initiatives, as well as the results of monitoring and research programmes.	**designated Freshwater Pearl Mussel areas** "DCHG will review and revise, as necessary, the National Conservation Strategy during this second cycle, incorporating the findings of the above initiatives, as well as the results of monitoring and research programme." "DCHG will also continue to monitor and report on the condition of Freshwater Pearl Mussel populations and their habitat and will undertake prioritised practical conservation measures. Measures may include actions within the National Conservation Strategy, assisted breeding, guidance on the assessment of the ecological impacts of proposed projects, and further population genetic studies."	Additional expanded text on monitoring FPM conditions	NIS. For the original impact assessment of this measure see **Table 6-10.** It must be noted that freshwater pearl mussel National Conservation Strategy focusses on 8 priority catchments on the basis of several criteria including population size; closeness to the achievement of favourable conservation status; habitat condition and where the impacting pressures are best understood and therefore, the measures employed are expected to be effective. Although targeting resources were they will be most effective in achieving conservation of pearl mussel populations there is a lack of clarity regarding the non-prioritised catchments.

Table 7-11 Protected Areas and High Status Waters: High Status Rivers and Lakes

Final Plan: Section 8.6.2 Measures to Protect and Enhance High Status Waters			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
HS1 Existing measures, such as the GLAS scheme, forestry scheme and septic tank inspections will continue to promote the protection of high status waters. Uptake of these schemes in high status areas will continue to be promoted and a proportion of septic tank inspections will be weighted towards high status catchments.	1. Existing measures, such as the GLAS scheme, forestry schemes and DWWTS inspections will continue to promote the protection of high status waters. Uptake of these schemes in high status areas will be prioritised.	Minor rewording from "septic tank inspections to "DWWTS inspections". Deletion of "a proportion of septic tank inspections will be weighted towards high status catchments". Measure is essentially the same.	The measure has not been modified between the draft and final RBMP therefore there will be no changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-10.**
HS3 In addition to facilitating focussed deployment of resources, the Blue Dot programme will facilitate public awareness and engagement including the development of community led catchment initiatives through LAWCO.	4. To develop and co-ordinate the Blue Dot Catchments Programme, a Blue Dot Catchments Working Group will be established in 2018, comprising all relevant stakeholders, and chaired by Kerry County Council. The Working Group will appoint a dedicated Blue Dot Co-ordinator for the programme. **8.6.2.4 Establishment of a Blue Dots catchments Programme** "An initial work programme has been	Significantly amended measure brings focus to overall coordination rather than awareness-raising only. Supporting text notes Blue Dot will work with LAWCO, with initiatives developed under the Programme itself.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-10.** The addition of the text provides further clarification regarding to coordination of the Blue Dot Catchments Programme. In the interim between the draft and

Final Plan: Section 8.6.2 Measures to Protect and Enhance High Status Waters			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
	developed for 2018 to begin the process of building recognition and awareness of the Programme and begin to integrate it into the work that is already taking place, or planned under the Programme of Measures. This work programme will be led by the Blue Dot Working Group and managed by the Blue Dot Co-ordinator. It will include the following initiatives: …"		final RBMP progress has been made in developing an initial works programme. In addition, in order to coordinate and focus efforts and resources across a number of key agencies for the purpose of protecting and restoring high status in the Blue Dot Programme a Blue Dot Working Group will be established with initiatives set.
	New measure added 2. DHPLG proposes to amend the DWWTS Remediation Grant Scheme to provide for remediation of DWWTSs which potentially impact on high status waters within prioritised Areas for Action.	New measure added.	The addition of this measure is considered to have a potential positive impact. Prioritisation of Domestic Waste Water Treatment Systems (DWWTS) remediation targeting high status waters is a positive measure. In order to maximise the effectiveness this measure will need to work in tandem with other DWWTS measures such as prioritising inspection of DWWTS in high status areas.

Final Plan: Section 8.6.2 Measures to Protect and Enhance High Status Waters			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
	New measure added 5. The DHPLG has advanced the development of an EU LIFE Integrated Project to protect and enhance high status waters and integrate into the work under the blue dot catchments programme. If funding is approved from the EU for this project, it is expected to commence in 2020.	New measure added.	The addition of this measure is considered to have a potential positive impact. One of the main priorities in the 2nd cycle RBMP is to protect and restore high status waterbodies. The Blue Dot Catchments Programme forms an integral part of this and provision of funding in order to role out the programme is a fundamental aspect. It is welcomed that a funding is currently being sourced, however it is not clear in the event of the funding not being awarded where the budget for the Blue Dot Catchments programme will come from.

Table 7-12 Actions to Improve Economic Analysis

Final Plan: Section 9.9 Actions with Regard to Economic Analysis and Sustainable use of Water Over the 2nd Cycle			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
EA1 CER, as economic regulator, will approve Irish Water costs and continue to drive efficiencies within its cost base. For example, Irish Water is required to deliver efficiencies of around 20% within its base controllable operating expenditure over the period from the start of 2015 to the end of 2018.	1. The CRU, as economic regulator of Irish Water, will approve Irish Water costs and continue to drive efficiencies within its cost base. For example, Irish Water is required to deliver efficiencies of around 20% within its base controllable operating expenditure over the period from the start of 2015 to the end of 2018.	Minor change, CER to CRU (Commission for Regulation of Utilities).	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-11.**
EA2 CER will also monitor Irish Water's delivery for money spent and publish information to improve transparency in this regard. For example, the CER is currently putting in place a suite of metrics against which it will assess Irish Water's performance, over time and against international comparators. These metrics will relate to, for example, customer service, environmental performance, quality of service for water supply, security of water supply and sewerage service.	2. The CRU will also monitor Irish Water's delivery for money spent and publish information to improve transparency in this regard. In particular, the CRU will publish Irish Water Performance Assessment reports on a half-yearly basis.	Revised 'CER putting in place…' to 'CRU will publish reports…'. Details on performance metrics deleted.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-11.**
EA3 CER will continue to develop and implement a harmonised suite of non-domestic water tariffs that will benefit customers in terms of transparency, equity and simplicity. Similar work will	3. The CRU will continue to work towards establishing and implementing a harmonised suite of non-domestic water and wastewater tariffs that will benefit customers in terms of	Minor rewording, addition of 'water and wastewater' Addition of 'ensuring full cost recovery'.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of

Final Plan: Section 9.9 Actions with Regard to Economic Analysis and Sustainable use of Water Over the 2nd Cycle			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
be progressed by the CER in relation to a harmonised suite of charges for connection to the water and wastewater systems.	transparency, equity and simplicity. Similar work is being progressed by the CRU in relation to introducing a harmonised suite of charges for connection to the water and wastewater systems. The regime will continue to be based on ensuring full cost recovery from non-domestic water and wastewater users.		this measure see **Table 6-11.**
EA4 Metering information will be used by both Irish Water and CER to improve our understanding of water use and leakage. Irish Water will continue its programme to address leakage and unaccounted-for water, with an expected outcome of saving around 82.5 million m^3 of water per annum by 2021.	4. The cost of domestic services provision will be met through central government funding up to a threshold of 1.7 times the amount assessed by the CRU as the average consumption of each domestic customer. Domestic water use above this threshold will be subject to a charge, the level of which will be set by the CRU, taking account of the cost of water services provision. This charge will serve to address the very high usage levels amongst a small number of domestic users as demonstrated by the analysis undertaken by both the CRU and the CSO. The other key focus for efficiency in water services provision is reducing leakage. Investment of €73m is planned to reduce leakage by 61 million m3 per annum by 2021 against 2017 levels, and	2-part measure essentially: original measure expanded to include domestic water use in addition to addressing leakages. For the latter, revision of volumes saved from 82.5 to 61m^3 and level of investment included.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-11.** The expansion of text provides greater clarity regarding provision of services. The reduction in the figure for leakage volumes is not considered to have a negative impact and is the result of a revision of figures.

Final Plan: Section 9.9 Actions with Regard to Economic Analysis and Sustainable use of Water Over the 2nd Cycle			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
	thereafter to sustainable economic levels.		
EA5 Data from both non-domestic and domestic water meters will be used to develop basic annual water statistics to be produced and published by the CSO, in co-operation with other stakeholders. CSO will also develop catchment specific statistics to support delivery and monitoring of this RBMP – again in co-operation with other stakeholders.	**Numbered measure deleted, some preceding text:** **9.3 Estimated water demand in Ireland** "In April 2017, the Central Statistics Office (CSO) produced the first statistical release in Ireland with regard to domestic water consumption in 2015… This statistical release will now be produced on annual basis and will provide an important tool for monitoring domestic consumption from the public water supply throughout the second cycle and beyond."	Mention of annual report only - catchment-specific reports deleted and not in Final Plan.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-11.**
EA6 The economic analysis of water will be developed on an ongoing basis throughout this second cycle, in particular following decisions around the future structures and funding model for the delivery.	6. The economic analysis will be further developed on an ongoing basis throughout the second cycle river basin management plan to ensure that wider water quality measures implemented during this cycle will be monitored with regard to their cost and effectiveness in order to better inform the development and implementation of future measures.	Measure essentially same, added focus on monitoring of measure implemented in 2nd cycle for cost and effectiveness.	The proposed modification will not result in any changes to the assessment already completed for the NIS. For the original impact assessment of this measure see **Table 6-11.**
	New measure 5. Irish Water will implement its National Water Resource Plan. This will ensure the better understanding and	New measure added.	The addition of this measure is considered to have a potential positive impact.

Final Plan: Section 9.9 Actions with Regard to Economic Analysis and Sustainable use of Water Over the 2nd Cycle			
Draft RBMP Measure assessed in SEA ER/ NIS	**Wording in Final RBMP**	**Changes**	**Assessment of potential impact as a result of new/ alteration of measures between the draft and final RBMP (Note the original assessment still stands)**
	long-term management of abstraction pressures arising from the provision of water services and support the continued sustainable management of our water resources.		The main objective of The National Water Resources Plan (NWRP) is to set out how Irish Water intends to maintain the supply and demand for drinking water over the short, medium and long term whilst minimising the impact on the environment. The NWRP will form a linkage with the RBMP and pressures highlighted within the RBMP of particular relevance to the NWRP includes; Physical modification and Abstractions/diversion. The construction and operation of water resource options has the potential to impact on water quality, the NWRP is subject to the SEA, AA process which is currently in progress and the public consultation on the SEA Scoping report is currently under review.

8 MITIGATION MEASURES / RECOMMENDATIONS

To further improve actions contained within the RBMP and to address potential negative effects identified during the assessment of both the draft and final RBMP, mitigation measures and recommendations have been proposed**.** The nature of these mitigation and recommendations and how they have been addressed in the final RBMP is presented in **Table 8-1**.

The RBMP is a strategic plan which relies to a significant degree on other policy, strategy and plan initiatives to achieve objectives related to improved water quality. Many of these have already undergone AA or are undergoing AA with development of specific mitigation which are or will be implemented. The measures committed to in these other plans will be essential to ensuring that the targets of the RBMP are met and that the RBMP does not have an adverse effect on any European Sites. The recommendations below are largely proposed in the context of improving the implementation process of the RBMP and improving integration with the requirements of protected areas, in particular, water dependent habitats and species where water quality if an integral component towards achieving or maintaining favourable conservation status.

Table 8-1 How Mitigation Measures / Recommendations have been Addressed in the Final RBMP

Ref.	Proposed Mitigation Measures / Recommendations	Mitigation Measures/ Recommendations addressed within the RBMP
Rural Diffuse and Point Source Pollution Measures	In addition to the implementation of the mitigation measures as provided for in the SEA and AA for FW2025, the following mitigation is also recommended: • Provision of additional manpower and personnel that possess the skillset for 'whole farm' inspections could greatly improve compliance levels with the nitrates regulations; • Investigate ways to maximise resources in relation to inspections and audits, such as the suggested targeting of inspections based on the characterisation process outcomes, and the prioritisation of inspections at a national level; • There is a need for better education/knowledge transfer in relation to the spreading of manures; • Consideration should be given to nationalising farm inspections. The current method of the Local Authority having responsibility may compromise inspections, particularly in the inspectors own community; • It may be necessary to link participation in the knowledge transfer programme to the basic farm payment to encourage attendance. It would also be beneficial to encourage better record keeping in relation to farm practices; • Presentation of clear and easy to use	The Plan includes a number of measures which address the various concerns in relation to nutrient enrichment from agricultural practices, especially at a local level. These include commitments for: ▪ 35 regional local authority staff undertaking investigative assessments; ▪ 30 new agricultural sustainability advisers; ▪ Creation of a new collaborative approach to drinking water source protection; and ▪ Extension of the grant scheme for repairs, upgrades and replacement of domestic waste water treatment systems in river catchments with a high status objective.

Ref.	Proposed Mitigation Measures / Recommendations	Mitigation Measures/ Recommendations addressed within the RBMP
	NMPs is needed to encourage uptake and implementation of plans; • Farm advisors should be fully trained in the catchment characterisation process; how it was undertaken, outcomes, objectives and agricultural measures appropriate for different environmental settings; • The ACP Programme should include a high status catchment, and also an SAC / SPA catchment to examine the additional water related requirements which may be required and inform measures for protected areas, and • Consideration should be given to the inclusion of European Sites as sensitive receptors into future DWWTS Inspection Plans.	
Urban Waste Water and Urban Run-off Measures	It is acknowledged that Irish Water has existing standard operating procedures which include procedures for the protection of the environment. These operating procedures include compliance with relevant legislation relating to SEA, AA, EIA as well as a wealth of other EU and national water legislation for plans and projects for which they are responsible. The mitigation measures suggested below in relation to implementation of the RBMP relate to areas for potential impact identified as part of this NIS for the RBMP and are presented in the context of strategic measures with have limited detail. It is acknowledged that some of the measures are already being applied. • When siting new infrastructure, discharge points must be carefully considered in terms of the assimilative capacity of the receiving waters and accounting for all discharges to the water body. In addition, discharge points must be carefully considered in terms of proximity to European Sites, in particular freshwater pearl mussel catchments and oligotrophic and hard water lakes where high status environmental objectives are a requirement; • The Wastewater Compliance Strategy (2017), which is currently undergoing screening for AA shall acknowledge the requirements of the RBMP; • New infrastructure or the upgrade of existing infrastructure should be guided by the development of siting criteria to	The final plan does include for the development of water and planning guidance for Planning Authorities and a commitment to provide training to planners on the Water Framework Directive and the environmental objectives set out in the Plan. As such there are further opportunities for integration of Natura 2000 considerations into planning at that point to complement the existing guidance available to planners on AA. It is noted that activities requiring development consent will have to have regard to the need for both EIA and AA under the Planning and Development Act 2000, as amended and the Planning and Development Regulations 2001, as amended.

Ref.	Proposed Mitigation Measures / Recommendations	Mitigation Measures/ Recommendations addressed within the RBMP
	guide land use planning; • If these alternatives involve the building of a new plant or an extension to an existing plant within or adjacent to an SAC / SPA, screening for AA / AA will be required as per the normal planning and environmental assessment processes.	
Forestry	• While the top 8 FPM catchments are being prioritised, the strategy for the remaining 19, remains unclear within the plan. This should be clarified in the RBMP.	• In line with the national conservation strategy, DAFM will finalise and implement its Plan for Forestry & FPM in Ireland, incorporating a Forest Management Framework to identify the level of risk associated with an individual site, and to match operations appropriate to that risk. • This framework will include a wide range of innovate approaches under the various key forestry activities (i.e. afforestation, forest road works, tree felling (and reforestation), such as native woodland establishment, conversion to continuous cover forestry, the use of natural regeneration, temporary forest roading, cable extraction, and forest removal. • The Native Woodland Establishment Scheme and the Native Woodland Conservation Scheme will provide support within both the Priority 8 FPM Catchments and the other 19 FPM catchments. • DCHG will review and revise, as necessary, the National Conservation Strategy during this second cycle; • DCHG will publish conservation objectives for all Freshwater Pearl Mussel SACs by the end of 2018.
Peatlands	• Existing research on the mitigation of the generation of ammonium should be acknowledged in order to speed up the process of putting in place appropriate measures for existing extraction sites. In addition, the impacts of dissolved organic carbon and sedimentation in general, should also form part of the research remit. • Given the nature of the Bord na Mona Sustainability 2030 Strategy and the potential for impact from peatlands on water, biodiversity etc., it is recommended that consideration should be given to screening the strategy for AA.	• It is acknowledged that this recommendation is not within the remit of the Department and is a matter for the statutory consultees for SEA and Bord na Mona. This would be a non-mandatory SEA if undertaken.

Ref.	Proposed Mitigation Measures / Recommendations	Mitigation Measures/ Recommendations addressed within the RBMP
Aquatic and Riparian Invasive Alien Species	• The list of 9 invasive species prioritised through Regulation (No. 1143/2014) on 'the prevention and management of the introduction and spread of invasive alien species' does not sufficiently reflect the threat from existing species in Ireland. This list should include further species of importance in an Irish context and chosen by an all-island IAS group. • Recognition of the place of the Birds and Natural Habitats Regulations 2011 (as amended), in particular Regulation 49 (prohibition on introduction and dispersal of certain species) and 50 (prohibition on dealing with and keeping certain species) and the Third Schedule, should be included in the RBMP. • Enhanced co-operation between Public Authorities on IAS, should include those at the freshwater / marine interface e.g. Marine Institute, Sea Fisheries Protection Authority etc. • Measure IAS.3 would benefit from clarity on how existing practices and protocols are to be integrated and who will have responsibility.	The RBMP notes that currently 49 species are listed under EU Regulation (1143/2014), of which 9 occur in Ireland. It is acknowledged in the plan that additions to this list may be made in the coming years as our knowledge base improves. The Department of Culture, Heritage and the Gaeltacht (DCHG) has overall responsibility for implementation of the Regulation. • The RBMP also notes in Section 7.5.1. that the development of the DCHG's Management Plans for the management of priority species[38] during this RBMP cycle will be key to providing information on pathways, pathway mitigation, practical control and eradication, or containment if eradication is technically infeasible. Priority will be given to high impact IAS that are at an early stage in the invasion process and where eradication or significant control is possible.
The Physical Condition of the Water Environment	• Improved hydromorphology assessment tools should include for the hydromorphological requirements supporting the favourable conservation status of water dependent species e.g. salmon, lamprey. For the OPW Arterial Drainage Maintenance activities (HYMO4), it is recommended that the environmental management practices are reviewed and updated during this six year cycle to ensure their effectiveness and that they continue to evolve from lessons learned. • The Environmental River Enhancement Programme should be reviewed, and fully resourced in order to counteract potential negative impacts from flood relief schemes, arterial drainage maintenance programmes and flood risk management plans.	Section 7.6 of the plan notes that while there has been a substantial improvement in international engagement on the development of a collective understanding of the ecological impacts of hydromorphological alterations to surface waters but much work remains to be completed. It is further noted technical guidance will be prepared by 2019 on best available environmental practices for the mitigation of physical development impacts on water ecological status. This will be a sub-element of guidance being prepared for planning authorities on taking River Basin Management Plan objectives into account during the physical planning process.
Abstraction Pressures	• The role of AA in the assessment of abstractions will be an important part of the evidence base and this measure should directly acknowledge the need for AA as part of any control regime.	A specific section on climate adaptation is included in the plan. This states that the Department is committed to drafting a comprehensive, whole-of-sector adaptation plan. The sectoral plan will help in

[38] Listed in EU regulation 1143/2014

Ref.	Proposed Mitigation Measures / Recommendations	Mitigation Measures/ Recommendations addressed within the RBMP
	• The role of climate change in terms of the long-term sustainability of abstractions should be investigated and considered in any licensing context. • Consideration should be given to including a specific measure to reduce abstraction demand, particularly where risks have been identified to sensitive water courses.	identifying the key climate vulnerabilities of the water sector in Ireland and will identify adaptation options. It is likely the plan will consider options around abstractions at that time. The RBMP has also committed to further assessment of the 6% of water bodies identified for further review to determine if abstractions are posing a risk to the environmental objectives under the WFD and will advise on appropriate measures to mitigate the pressures. It is proposed that the Department of Housing, Planning and Local Government will begin a consultation on an appropriate regulatory control framework for abstractions posing a risk to WFD objectives with the view to progressing the primary legislation to the Houses of the Oireachtas for consideration later in 2018. Irish Water will publish Ireland's first Nation Water Resource Plan by the end of 2018 following public consultation.
Other Pressures	• It is recommended that communication takes place between the RBMP and NPF and RSES teams to maximise coordination and alignment opportunities prior to the documents being finalised. Consideration of any conflicts which might arise between the implementation of the CFRAMS and RBMP should be formally facilitated before either set of plans is finalised and adopted. • A dedicated consideration of Climate Change Adaptation in the context of the Programme of Measures proposed in this RBMP is needed to ensure that the measures remain fit for purpose into the future.	Section 7.8.2 deals with the assessment and management of flood risk. The RBMP notes that more detailed assessment and design of flood risk management measures will be undertaken at a project level and will provide a detailed appraisal of the potential impacts of the proposed measures on water body hydromorphology and status. Furthermore the RBMP also includes information in relation to the role water retention measures have to play in managing flood risk. Section 7.8.3 deals with climate adaptation. This states that the Department is committed to drafting a comprehensive, whole-of-sector adaptation plan. The sectoral plan will help in identifying the key climate vulnerabilities of the water sector in Ireland and will identify adaptation options. There is ongoing communication between the RBMP team and the NPF and RSES teams.
Protected Areas and High Status Waters	• Measure N4 should acknowledge the need for environmental assessment and appropriate assessment of local solutions prior to implementation with	• The acknowledgement in relation to EA in measure N4 has been included in the final plan. • Chapter 10 of the final plan lays out the

Ref.	Proposed Mitigation Measures / Recommendations	Mitigation Measures/ Recommendations addressed within the RBMP
	particular attention paid to other protected habitats and species which could be unintentionally impacted e.g. kingfisher, otter. • Ireland currently does not have a prioritised list of water dependent birds which could be targeted through the RBMP process in a similar way to the habitats / species water dependency list. It is desirable that NPWS and BirdWatch Ireland liaise with the EPA to develop such a list as a starting point towards establishing stronger linkages between the WFD and the Birds Directive. • Every effort should be made to expedite the establishment of the blue dot programme and the establishment of the high status working group. The group should also include in its consideration the high status objective requirements for the Annex II freshwater pearl mussel species and for Annex I lake habitats in certain sites as identified by the NPWS. • The promotion of agriculture and forestry environmental schemes should also focus on sensitive lake and turlough catchments. • Consideration should be given to the inclusion of qualifying features with a high status requirement e.g. the freshwater pearl mussel, Annex I lake habitat types within the National Inspection Plan for DWWTS.	implementation strategy for the RBMP including the cross linkages between various stakeholders. The recommendations made will be addressed appropriately though the implementation systems in place.
Economic Analysis	• Include specific measures to support education and awareness programmes and water conservation.	• The final plan includes dedicated resources for training and also key programmes such as the Blue Dot Programme to improve Education and Awareness among stakeholders.

9 CONCLUSIONS

This Natura Impact Statement has considered the potential of the RBMP to give rise to likely significant effects which could adversely affect any European site, with regard to their qualifying interests, associated conservation status and the overall site integrity. The assessment identified that the measures proposed in the RBMP to address pressures are predominantly positive for European Sites as they contribute to protection of water quality and in turn water dependant ecosystems.

Actions arising out of the RBMP shall be required to conform to the relevant regulatory provisions aimed at preventing pollution or other environmental effects likely to adversely affect the integrity of European Sites, where applicable and appropriate. In addition, all lower level plans and projects arising from the implementation of the RBMP will themselves be subject to screening for AA and where relevant, AA.

Therefore, having regard to:

- The high level strategic nature of the RBMP;
- The focus of the measures on improving water quality;
- The explicit linkages between the Water Framework Directive and the Habitats and Birds Directives which have directly influenced policy measures in the RBMP to avoid, as appropriate, activities and actions that could have an adverse effect upon the integrity of a European Site(s);
- The fact that all plans and projects arising out of the RBMP will be subject to the provisions of the Planning and Development Act 2000, as amended and / or the Birds and Natural Habitats Regulations 2011, as amended; and
- The continued application of the AA process to subsequent planning tiers,

It is the conclusion of this Natura Impact Statement that the RBMP will not adversely affect the integrity of any European site with the implementation of measures presented within this NIS.

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Appendix A

Consultation Submissions

Northern Ireland Environment Agency
www.daera-ni.gov.uk

Natural Environment Division
Klondyke Building
Cromac Avenue
Gasworks Business Park
Malone Lower
BELFAST
BT7 2JA

Telephone: 028 905 69579

10th October 2016

Dr. Antonia Gaughran
RPS Group
West Pier Business Campus,
Dun Laoghaire, County Dublin.
Ireland

Re: SEA Scoping of the Draft ROI National River Basin Management Plan.

Dear Dr. Gaughran

Thank-you for your email dated 9th September 2016 regarding the SEA scoping of the draft ROI National River Basin Management Plan. The Department of Agriculture, Environment and Rural Affairs Northern Ireland (DAERA) Northern Ireland Environment Agency has considered the consultation documents and our opinions are set out below.

General SEA Comments

Where the Republic of Ireland has environmental connections with Northern Ireland, there is the potential for impacts in Northern Ireland. We would anticipate that the transboundary nature of any likely significant adverse effects on the environment of the Republic of Ireland that would remain after measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects are incorporated into the Plan would be of particular relevance to consider in relation to Northern Ireland.

We would like the SEA Environmental Report to contain a clear statement indicating the opinion (and the reasons for it), about whether or not the implementation of the Plan, in combination with any identified measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment, is likely to have a significant effect on Northern Ireland.

For information, a couple of useful information sources that highlight the current state of the environment in Northern Ireland at a regional level are:

Northern Ireland State of the Environment Reports https://www.daera-ni.gov.uk/publications/state-environment-report-2013

State of the Seas Report.
https://www.daera-ni.gov.uk/publications/state-seas-report

Northern Ireland Environmental Statistics Reports
https://www.daera-ni.gov.uk/articles/northern-ireland-environmental-statistics-report

Landscape Character and Seascape Character can be found at:
https://www.daera-ni.gov.uk/articles/landscape-character-northern-ireland

UK National Ecosystems Assessment Chapter 18 Northern Ireland
http://uknea.unepwcmc.org/LinkClick.aspx?fileticket=m%2BvhAV3c9uk%3D&tabid=82,

Northern Ireland Countryside Survey
https://www.daera-ni.gov.uk/publications/northern-ireland-countryside-survey-2007-broad-habitat-change-1998-2007

SEA Scoping Questions Comments

1. Based on the plans, policies and programmes outlined are there any other key relevant international, national or regional plans, policies or programmes that should be considered in the SEA Environmental Report as outlined in **Chapter 4**?

- The national legislation and plans have not included NI legislation and plans. As the RBMP will be including transboundary catchments relevant NI plans should also be included. For example: Conservation (Natural Habitats etc.) Regulations (Northern Ireland) 1995 (as amended), Regional Development Strategy 2035, Valuing Nature A Biodiversity Strategy for Northern Ireland to 2020.

2. Are there any other significant information sources other than those listed in **Table 6.1** that should be considered?

- Under Biodiversity, Flora and Fauna, NIEA has data on designated sites within NI that may need to be considered.

3. Do you agree with the scoping of issues in **Table 5.1**?

- May wish to consider whether the introduction of ortho-phosphate dosing to control pulmbosolvency should be included as an issue.

- Table 5.1 indicates that the scope in relation to biodiversity will be focussed on designated sites. There are some migratory species such as European Eel which is critically endangered and any adverse effects would be significant if they were to occur so should be included within the assessment.

4. Are there any other existing environmental issues which should be considered in **Table 5.1** or **Section 6.3?** No comment.

5. Do you have any comments regarding the draft SEA Objectives outlined in **Table 7-1** – Draft SEA Environmental Objectives? No comment.

6. Do you have any suggestions in relation to the overall approach to alternatives as outlined in **Section 7.3**? No comment.

7. Do you have any other comments or observations which you feel would assist in the environmental assessment for the RBMP. No comment.

Please contact the SEA Team at SEAteam@daera-ni.gov.uk should you have any queries or require clarification.

Yours sincerely

John O'Boyle
John.OBoyle@daera-ni.gov.uk

pp. Dr. Mark Hammond

Northern Ireland Environment Agency
www.daera-ni.gov.uk

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Klondyke Building
Cromac Avenue
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10th October 2016

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7. Do you have any other comments or observations which you feel would assist in the environmental assessment for the RBMP. No comment.

Please contact the SEA Team at SEAteam@daera-ni.gov.uk should you have any queries or require clarification.

Yours sincerely

John O'Boyle
John.OBoyle@daera-ni.gov.uk

pp. Dr. Mark Hammond

Department of
Agriculture,
Food and the Marine
An Roinn
Talmhaíochta,
Bia agus Mara

Dr. Antonia Gaughran,
RPS Group
Westpier Business Campus,
Dunlaoghaire,
Co. Dublin

10th October 2016.

Re: SEA/AA Scoping on draft River Basin Management Plan.

Dear Dr. Gaughran,

I refer to your recent correspondence concerning the above.
Please see comments on scoping questions in blue:

8.1 SCOPING QUESTIONS

1. Based on the plans, policies and programmes outlined, are there any other key relevant international, national or regional plans, policies or programmes that should be considered in the SEA Environmental Report as outlined in **Chapter 4**?

4.1 Discussions are currently taking place on the possibility of new soil provisions at EU level these may need to be taken into account by the time the RBMP is finalised.

4.2 the statutory management requirements and Good Agricultural Environmental Conditions could be referenced here, as they are an integral part of the CAP pillar 1 provisions.

3. Do you agree with the scoping of issues in **Table 5.1**?

Biodiversity Flora and Fauna

- Potential spread/introduction of alien species and invasive species;

4. Are there any other existing environmental issues which should be considered in **Table 5.1** or **Section 6.3?**

It should be noted that there is a significant programme of agri-environment measures supported under the RDP, including a range of water beneficial measures under GLAS (with high status water areas and vulnerable water sites prioritised for interventions) and a scheme for freshwater pearl mussel in 8 priority catchments which is currently under development. The GAEC and SMR standards under Pillar 1 will also mitigate some of these pressures.

Yours sincerely

Liz McDonnell | Environmental Co-ordination Unit | Climate Change & Bioenergy Policy Division | Department of Agriculture, Food and the Marine | Pavilion A | Grattan Business Centre | Portlaoise | Co. Laois | 057 8689915 |

Iascach Intíre Éireann
Inland Fisheries Ireland

Noelle Carroll

Corporate Support Unit

Department of Communications, Climate Action & Environment,

Elm House, Earlsvale Road

CAVAN H12 A8H7

Our Ref: NMcG/WFD/2016

6th October, 2016

RE: **SEA Scoping River Basin Management Plan (RBMP)**

Dear Noelle

Inland Fisheries Ireland (IFI) is the state body responsible for the protection, management and conservation of the inland fisheries and sea angling resource in Ireland. Angling as a sport and tourism activity is estimated to be worth over €700 million to the Irish economy. Protection of the aquatic environment and habitat is a vitally important element of IFI's work. Section 7(3) of the IFI Act states that IFI in the performance of its functions shall have regard to (g) the requirements of the European Communities (Natural Habitats) Regulations 1997 (S.I. No. 94 of 1997) and the need for the sustainable development of the inland fisheries resource (including the conservation of fish and other species of fauna and flora habitats and the biodiversity of inland water ecosystems), (h) as far as possible, ensure that its activities are carried out so as to protect the national heritage (within the meaning of the Heritage Act 1995).

We note the Key Potential Environmental Issues, which are contained throughout the report which include a number of issues which have the potential to negatively impact on fish and fish habitats including water quality.

In determining the likely significant effects of the some key issues from a fisheries perspective for consideration in the SEA should bear in mind:

- Water quality
- Fish spawning and nursery areas
- Ecosystem structure and functioning
- Sport and commercial fishing and angling
- Amenity and recreational areas

While many of our watercourses are designated under European and National legislation (SAC, SPA, NHA, Ramsar) a significant portion are located outside areas under formal European designation but may hold species that are designated under the European Habitats Directive i.e. salmon and lamprey (sea, river and brook), which are listed as an Annex II Species.

Key IFI publications to be taken on board are:

- *Guidelines on protection of fisheries during construction works in and adjacent to waters.* These can be accessed at: http://www.fisheriesireland.ie/fisheries-management-1/624-guidelines-on-protection-of-fisheries-during-construction-works-in-and-adjacent-to-waters

- Guidelines on the Planning, Design, Construction & Operation of Small-Scale Hydro-Electric Schemes. These can be accessed at: *http://www.fisheriesireland.ie/fisheries-research-1/13-guidelines-on-the-planning-design-construction-operation-of-small-scale-hydro-electric-schemes-a-1*

With regard to Section 8.1 *Scoping Questions* we have the following to add:

1 – With regard to additional national legislation please add the *Inland Fisheries Act, 2010.*

3 – Please add *land drainage and reclamation* to the *Soil and Landuse* Section of Table 5-1 – Scoping of SEA issues

Please also incorporate the other issues raised in our SWMI submission (attached) dated 17th December, 2015.

Yours sincerely

Noel McGloin

Senior Fisheries Environmental Officer

Tel: 01 – 8842688 (direct line)

E – mail: noel.mcgloin@fisheriesireland.ie

Iascach Intíre Éireann
Inland Fisheries Ireland

WFD SWMI Consultation,
Water Quality Section,
Department of the Environment, Community and Local Government,
Newtown Road,
Wexford.

10th December 2015

Re: Significant Water management Issues in Ireland (SWMI) public consultation document.

Dear Sir/Madam,

Inland Fisheries Ireland (IFI) welcomes this opportunity to comment on the Significant Water management Issues in Ireland (SWMI) public consultation document.

IFI is a fisheries focused environmental agency, the principal functions of which are enshrined in Section 7 of the Inland Fisheries Act 2010. These functions are to promote, support, facilitate and advise the Minister on the conservation, protection, management, marketing, development and improvement of inland fisheries, including sea angling. IFI policy is aimed at maintaining a sustainable fisheries resource through preserving the productive capacity of fish habitat by avoiding habitat loss and by mitigating harmful alteration to habitat.

We welcome the opportunity of working with other agencies. It is extremely important to engage and network with other sectors and organisations that interact with the water environment in order to create a better outcome with regard to policy and decision making at a national, regional and local level. IFI consider ourselves as a primary partner in working on these issues.

Please find Inland Fisheries Ireland's observations outlined below, specific comments are listed and broken down according to the 16 relevant issues in the document.

Issue 1 Affordability and Prioritisation

Question: What are the issues you believe we should prioritise for the next cycle of river basin management plans e.g. the protection of high-status water bodies, improved management of bathing waters, the protection of drinking water sources?

Some issues that need prioritising for the next cycle of river basin management plans are as follows:

- Protection of high-status water bodies (see issue 16)
- Improvement of moderate/poor/bad status water bodies
- Waste water treatment plants, diffuse pollution (caused by agriculture and future concern with the upcoming Harvest 2020, on site waste water treatment plants), hydromorphology and invasive species
- Agriculture has many regulations in place with the GLAS scheme, GAP regulations etc., therefore a strict continuation of these regulations and stricter enforcement and supplementary measures are essential.

- A continued focus on waste water from both private septic tanks and water treatment plant upgrades are essential
- Possible stricter controls relating to forestry e.g. unsuitable lands should not be replanted - peat soils with monoculture crops requiring drainage/ fertilisation and a moratorium on reclamation of unsuitable/low fertility lands could be prioritised until sustainable alternative uses can be introduced e.g. planting using suitable indigenous species of trees.

Issue 2: Public Engagement

Question: What recommendations do you have to improve public participation in water management?

Catchment management groups have been established by IFI and also by local community groups with assistance from public bodies or under their own direction, for example, the IFIs Inny Catchment Management and other Groups, Mulkear Life and IRD Duhallow Project were successful in engaging the public, therefore the expertise of IFI and other groups should be accessed.

Water management should be featured in the school curriculum. An increase and expansion of the level of engagement with school children through the use of field trips and other educational tools e.g. web-based game interaction is desirable. IFIs 'Something Fishy' programme, the Dublin Angling Initiative or other educational school programmes with a focus on the environment have been extremely successfully in educating the community through a 'bottom up' approach.

Public information evenings, involving angling groups/diving clubs/water users in planning and the new WFD water officer posts will help inform the public.

The Reuters Institute, Digital News Report 2015 offers important insights into how the Irish public engage with the various media, both traditional and digital stating that 'although online news as a platform is dominant, traditional media are still highly prevalent'. The report demonstrates a broad generational division, and notes the continuing importance of TV and radio. These channels cannot be overlooked at this point in time.

Social media's role is rising globally and Ireland has above average usage with digital users (of all ages) in Ireland among the most active internationally. Content is driven by users, therefore ensuring users engage is critical to the dissemination of messages as sharing news is the means most users actively participate in. A successful social media plan for public engagement that inspires trust and reliance on the entity will require openness, transparency and the ability to respond in a timely manner.

Issue 3 Organisational Coordination

Question: Are other coordination mechanisms in addition to the above required?

Better co-ordination is required between relevant agencies and a mechanism needs to be put in place for capturing and reporting information from all.

Issue 4 Coordination of Plan Implementation

Question: What other plans and programmes do you think have a material impact on water management?

How do you suggest we seek to improve coordination of activities between the various plans?

It is extremely important to engage and network with other sectors and organisations that interact with the water environment in order to create a better outcome with regard to policy and decision making.

IFI are heavily involved in hydromorphology assessments on rivers for fish passage, etc., therefore, a greater coordination between agencies is required and available information should better communicated in order to ensure all available information is sought and the correct decisions are made going forward.

- IFI barrier group (working group)
- Environmental Rivers Enhancement Programme (EREP)/Office of Public Works (OPW)
- IFI catchment management plans

Issue 5 Land-use Planning and Water

Question: How can objectives of river basin (catchment) plans be included in land-use plans in a way that is effective?

How can the requirements of land-use plans influence river basin plans?

How can planning policy and practise be improved so as to enhance our water environment?

- Optimal locations for planning (no flood plains)
- Locations of wells and on site waste water treatment plants
- Priority investment into waste water and water treatment plants to accommodate the future increase in population
- Strict protocols and over-seeing of new slatted sheds, farmyards, etc. that may come from Harvest 2020
- The RBMPs should drive land-use plans alongside flood management plans and not the other way around, i.e. land-use plans should not influence the RBMPs
- Current planning legislation does not adequately address all aspects of land drainage and reclamation which can alter hydrological characteristics of river catchments. Legislation should address this issue in relation to lands outside Protected Areas to include all land types. The success or failure of the implementation of this phase of the WFD will depend to a great extent on the approach taken to development of lands by those with responsibility for this development (owners, planners, environmental authorities etc). Novel approaches could be explored such as the provision of financial incentives to landowners e.g. 'set aside model' which may offset the potential economic impact of not developing land in certain ways could assist in achieving the objectives of the WFD.

Issue 6 Floods and Water

Question: What else is needed to align flood risk mitigation and water quality management?

With the increasing incidents of flooding in Ireland, investment into flood relief and contingency plans is paramount. One of the main causative factors in urban areas is changes in land drainage practices and reclamation of water-retaining areas upstream of these centres. The analysis of land use change and its effects on the hydrology of whole river catchments is crucial. This aspect of flood

management has to be addressed with a review of measures which can be introduced to retain and slow the movement of waters from upstream (less populated) portions of catchment areas.

River flood plains are an integral part of the river system and a major feature in the control of flooding. While the effects of flooding are generally associated with impacts on urban areas, change in hydrology patterns also affect fisheries and other water resource usage. Increased peak flood events cause erosion, destruction of river banks and interference with spawning grounds and other critical ecological system components. Conversely, increased rates of runoff lead to extended duration of low flow events affecting water resource usage e.g. for abstraction, effluent assimilation capacity (Eutrophication), reduction in ecological productivity etc. Prevention of further loss of flood plain areas and re-establishment of the hydrological functions of wetlands and bogs to regulate the water cycle and reduce direct runoff is essential.

Mitigation measures for climate change, e.g. more planting of trees along river watercourses to provide stability and shading for fish species. See issue 8 and 10 regarding nutrient enrichment and fine sediment which would all pose a potential problem with more flooding and higher flows.

- Improved storm overflow systems to deal with heavy rainfall and flooding
- Improved run off of roads
- Flood risk management plans, land use plans and RBMP should all be integrated and looked at together

Issue 7 Biodiversity Management and Water

Question: What, if any, are the major concerns you would have in relation to our aquatic biodiversity in Ireland?

The primary function of IFI is the protection, management and conservation of the inland fisheries resource.

The incorporation of a reference to Inland Fisheries Ireland and to the protected freshwater fish species such as Atlantic salmon, shad and lamprey species which are listed under Annex II of the Habitats Directive and pollan which is listed under Annex V, is recommended in this section.

The protective function of native riparian woodland and its role in the preservation of biological diversity is fully supported by IFI.

Growth of invasive plant groups such as Giant Hogweed, Himalayan Balsam and Japanese Knotweed along with *Rhododendron* and *Gunnera* constitutes a significant adverse impact on the riparian ecology of watercourses. The tall and dense stands that these species can form impact by shrouding out the native species. These invasive plant species produce a lot of seeds and can disperse widely and rapidly. They commonly spread in a downstream manner, therefore ideal treatment would involve treatment from the top of a catchment downwards. IFI recommend strict management of these invasive species and incentives to landowners to eradicate them. A series of protocols are available in respect to management/irradiation of the various nuisance species. IFI have an invasive species App for iPhones to help identify and report findings. Stricter control on the sale of these species in garden centres, etc. may also help control the spread.

There is a huge benefit to consultation at a local level in addition to the formal processes. IFI are represented on some working groups and view these meetings as essential opportunities to share the vast bank of information on the conservation, protection, management, marketing, development and improvement of inland fisheries. Liaising with NPWS and IFI regarding sensitive species when drawing up plans is essential in obtaining an overall view of changes in biodiversity.

A loss or threat to our native and sensitive fish species e.g. Arctic char, pollan and shad is a concern for IFI. Arctic char is an important indicator species for lakes yet there is little legislation and no designated sites for their protection. The loss or threats to the native white-clawed crayfish due to the presence of the crayfish plague (*Aphanomyes astaci*). The movement of non-native species and invasive species is another major threat to biodiversity. The lack of legislative enforcement to control this is evident (see issue 15 on invasive species).

While Ireland has a wide diversity of protected aquatic habitat and species there are also vast areas outside of protected sites requiring equal protection and effective targeted management.

Issue 8 Pollution of waters caused by nutrient enrichment

Question: What other actions do you think could be put in place to reduce the pollution of waters caused by nutrient enrichment?

Much of the forestry in Ireland is located in the headwaters of our river systems. These streams may not be recognised as fish or macroinvertebrate habitat however their importance to the fisheries resource cannot be overstated. Best operational practice through strict adherence to the relevant updated guidelines (such as the *Code of Best Practice, Forestry and Water Quality Guidelines* and *Forest Biodiversity Guidelines*) should ensure compliance with fisheries requirements in the majority of cases. Environmental impacts associated with forestry, aerial fertilisation and harvesting needs to be tightly controlled. However, many commercial forestry sites were planted long before the above guidelines were in place and are on 'difficult sites' of high altitude with steep slopes and peaty soils. The potential negative impacts on water quality during the establishment and harvesting phases at such sites are likely to outweigh the potential environmental benefits from replanting. It is our opinion that many of these 'legacy' sites would not now be considered as suitable sites for afforestation. When an area for replanting could contribute to a delay in the recovery of that surface water system to good status then no replanting on these sites may be the only sustainable option. We recommend an expansion of the physio-chemical and biological monitoring programme in these catchments to address any issues that may arise. In nutrient sensitive water catchments consideration should now be given to the introduction of afforestation exclusion zones, with new plantations prohibited thereby avoiding potential future impacts.

Site drainage associated with single / multi residential development is an important feature in surface water quality protection. Where surface ponding or leachate from waste water systems becomes an issue, peripheral site drainage acts as a direct conduit for pollutants to enter waters.

To prevent this eventuality, criteria for site approval should be based on a site's natural soil type and percolation characteristics, the use of imported media and site drainage to facilitate waste water disposal is arguably unsustainable and requires further investigation.

Extensive development in unsewered areas (e.g. one-off housing) and their associated land drainage systems, gives rise to increased surface runoff to waters. This runoff in combination with agricultural drainage contributes significantly to changing surface water flow regimes. Sustainable drainage systems dealing with site surface waters for all rural development should be supported. More incentives are needed to monitor and have appropriate percolation around private septic tank areas or yard run off areas from farms or industry.

More resources are needed to perform 'spot checks' on farms, private septic tank areas and increase 'high visibility' of agencies on the ground, this has been proven to reduce pollution offences. Stricter fines should also be enforced if proven to be responsible for pollution. Perhaps better coordination between agencies with regard to enforcement would prove beneficial.

Fine sediment is a problem for spawning gravels in rivers and on lake shores with regard to brown trout and char spawning where it clogs up the gravels and causes deoxgenation. Nitrogen (N) and phosporus (P) cause weed growth, choking of rivers and deoxygenation in rivers (see issue 10).

There is no mention of the guidance document *"Guidance for the Farming Community on Protection of Water Resources and Habitat Quality from Impacts due to Livestock Access to Waters"*. This leaflet describes the problems as a result of livestock access to waters. It identifies benefits to the farming and wider community that result from eliminating such access, and contains practical recommendations on reducing and where possible eliminating livestock access to waters. There is also no mention of the new initiative launched by Teagasc and IFI in 2014 *"Minding our Watercourses"* which details best practice management of watercourses for farmers. It is emphasised in the document that proper management of farm watercourses whether large rivers or small streams is critical to ensuring high levels of biodiversity.

The Nitrates Regulation should address land reclamation in all areas. Currently certain forms of reclamation are not controlled by the regulations resulting in lands (marginal) being left unvegetated over the winter periods with an associated high risk of sediment and nutrient runoff. A knowledgebase of existing measures (e.g. through agri-planning mechanisms) which have proven effective in controlling / preventing sediment loss is recommended.

Issue 9 Water and Health

Question: What further actions would you suggest be taken to reduce health risks from waters?

IFI have concerns in relation to the use of certain herbicides and pesticides including Cypermethrin which has become a topic in recent years. Herbicides and pesticides if they find their way into watercourses have a detrimental effect on fish (especially juveniles) and aquatic life. It is important that the toxicological and environmental effects on humans are investigated, especially in areas of abstraction for potable supplies. Cattle access can also pose a serious risk to water quality through walking around in the watercourse (*Cryptosporidium*). We suggest this issue is addressed especially in areas of abstraction for potable supplies or fish spawning areas.

The tight control of the chemical that is used to 'scour' drinking water pipes. Chemicals from tailings ponds in old mining areas need to be monitored/rehabilitated. What is the timeline for the detailed studies and management plans for historic mines?

Issue 10 Fine Sediment

Question: How do you think this issue should be tackled?

Fine sediment is a problem for fish when it clogs up the gravels where they spawn in rivers and along lake shores and causes deoxgenation. Nitrogen (N) and phosporus (P) cause weed growth, choking of rivers and spawning feeder streams around lakes which in turn causes deoxygenation which is detrimental to fish species.

In rural areas the first line of defence is to maintain land cover and prevent soil erosion in the first instance. The second line of defence is to trap the material before it reaches the stream network. Extensive land improvement works are on-going throughout the country. In effect where lands are being improved/reclaimed they lend themselves to sediment runoff. This practice needs regulation as it constitutes a serious threat to water quality.

Cattle access can also pose a serious risk to water quality through walking around and excreting in the watercourse. We suggest this issue is addressed particularly in areas of abstraction for potable supplies or fish spawning areas.

The concentration of N and P in a waterbody is a key indicator of water quality and because of their enriching effect and potential health problems in areas where water is abstracted for potable use.

The use of buffer zones/riparian zones should be encouraged and mandatory in some areas depending on topography to prevent the input of sediment and nutrients into watercourses. The use of buffer zones along watercourses is greatly supported. Buffer zones provide breathing space or non-farmed area between actively managed land and the natural ecosystem. Buffer zones along watercourses may or may not be fenced, depending on whether land is stocked or not. Where land is stocked, the buffer zone requires fencing. Buffer zones reduce lateral transport of nutrients and of sediment from land to watercourses, with multiple benefits for water quality and instream habitat. These zones are particularity useful in intensive tillage farming where ploughing and spraying is frequently carried out on top of the banks. Such practices contribute to substantial losses of silt and nutrients to the watercourse, with consequences in terms of instream weed growth and requirement for channel maintenance. These zones also eliminate trampling of the banks from livestock and adding more sediment to the watercourse. Native tree planting along river banks provide stability and reduce bank erosion and subsequent runoff of fine sediment. The use of Alder due to its tendency to become extremely dense causing tunnelling and over shadowing has become problematic for fisheries management, therefore the planting of Birch, Willow and Rowan with the exclusion of Alder is now recommended.

There should be strict management of sediment traps throughout all forestry felling processes and on-going de-silting of these traps is essential. Silt traps should be mandatory when working in all watercourses and building sites/farmyards where runoff is occurring (especially after heavy rain).

Forestry roads must allow for unhindered upstream and downstream movement of fish and aquatic life at all times. No machinery should enter a channel at certain times of the year.

The back washing of sand filters at water treatment plants into streams is another area of concern that may need more investigation.

Issue 11 Physical Changes

Question: Are there other issues regarding physical modifications on waterways that should be highlighted now?

The Environmental Rivers Enhancement Programme (EREP) is an Office of Public Works (OPW) funded project that is being co-ordinated and managed by IFI. The programme focuses on the enhancement of drained salmonid rivers in Ireland. These drained rivers are a result of a number of large and small scale arterial drainage schemes which were carried out, across the country, by the OPW since the 1940's. While such works substantially reduced flooding in many areas and brought much benefit to agriculture there were unfortunately some negative impacts on fisheries, angling and on the river corridor habitat. EREP began in 2008 and is still ongoing. The programme involves two different approaches to enhancement, these being capital enhancement and enhanced maintenance respectively. All enhancement designs are prepared by IFI and works are implemented by OPW. Monitoring of the enhancement works by IFI consists of carrying out pre and post works habitat assessments on representative river stretches with the resulting improvements being reported through the River Basin Management Plans (RBMP's) under the Water Framework Directive.

IFI are also involved in hydromorphology assessments on rivers, therefore, a greater coordination between agencies is required here to ensure all available information is sought and the correct decisions are made going forward. It is extremely important that angling clubs and local drainage boards, for example, are implementing environmentally friendly measures set out under the EREP programme when carrying out instream works.

Agricultural practices and forestry development continue to result in altered hydrological regimes in our surface waters and constitute fundamental risks in terms of water quality and ecological status. Currently large areas of marsh, wetland, marginal and unproductive lands are being drained, (incorporating the removal of hedgerows and river riparian areas) with a view to facilitating increased agricultural production (beef/dairy/tillage etc.). This drainage is occurring in both Protected (SAC, NHA, SPA) and unprotected areas and warrants careful consideration and potentially associated urgent action. An inventory of all weir, bridge and other in-stream structures and culverts is required with an associated impact risk assessment to determine existing and potential impacts on aquatic habitat, communities, river continuity, fragmentation etc. Water abstraction intake structures, some of which are located in prime fish spawning and nursery areas, should be included in the assessment e.g. private and public authority water supply intakes. Such an inventory would identify any disused intakes / instream structures with the potential to impact on ecological status and river continuity and their removal could be prioritised. Areas where river culverting has taken place with associated aquatic habitat loss and fragmentation could also be addressed via mitigation measures with the aim of habitat restoration. Interference, alteration or culverting of water systems in both rural and urban areas (with limited exceptions e.g. to provide access) should be avoided.

Issue 12 Abstraction and Flows

Question: Is the abstraction of waters a significant issue in your area and, if so, do you have views on how this might be addressed?

Abstraction demands on the available water resource have increased dramatically (at certain times of the year) with associated increased pressure on aquatic ecosystems. IFI are aware of some locations where draw down of water is causing impact to local fish populations, a detailed list of these can be provided upon request. Each river catchment could be allocated a water abstraction budget based on the flow requirement of the biological components present. Enhanced regulation via permit / authorisation of all abstractions from surface and ground waters is desirable.

Abstraction can have detrimental effects on fish species that spawn on the lake shore or in riverine areas where gravels become 'dried out' at certain times of the year, in particular Arctic char, brown trout and salmon. Possible issues that may arise through over abstraction of water are:

- Loss of habitat - a smaller stream will support fewer fish, particularly territorial species
- Blockage of migration pathways
- Loss of spawning or nursery areas due to reduced flow or 'dried out' areas in a waterbody
- Changes to habitat quality from heating, reduced oxygenation and reduced dilution of effluents and pollution
- Drying out of riffles (the major food production areas of stream systems)
- Entrainment of juvenile and larval fishes in pump intakes, particularly on the upstream migration

In relation to the protection and conservation of the fisheries resource, the publication "Guidelines on the Planning, Design, Construction and Operation of Small-scale Hydro Electric Schemes and Fisheries" provides information on critical flow requirements for fisheries. These guidelines have

relevance to Water Framework Directive (2000/60/EC) implementation where the overall objective is to ensure there is no deterioration in water status. Associated hydro-morphological pressures must be addressed so as to ensure the biological status and, by association the fishery status of waters is maintained or improved.

Landfills, Quarries, Mines and Contaminated Lands.

Water-table drawdown is of particular relevance in quarries where excavation extends into ground water strata and lowers the water table with resulting dewatering of surrounding surface waters. There are several developments where surface waters are impacted by ground water drawdown - in some instances the zone of influence extends a kilometre or more resulting in dewatered streams and impact on aquatic habitats. Actions should include an Impact Assessment of potential high risk site locations to identify the degree of ground water drawdown and extent of surrounding waters impacted; assessment should recommend mitigation measures to eliminate / offset impacts.

Issue 13 Hazardous Chemicals

Question: Are you satisfied with the existing approaches taken to control and prevent chemicals in the environment?

Are there any additional chemicals of concern that are currently not being considered in Ireland?

IFI have concerns in relation to the use of certain herbicides and pesticides including Cypermethrin which has become a topic in recent years. Sheep dip is a hazardous chemical on mayfly/stonefly, crayfish and other aquatic species in a watercourse which fish may feed on. Herbicides and pesticides if they find their way into watercourses have a detrimental effect on fish (especially juveniles) and aquatic life. It is important that the toxicological and environmental effects on aquatic species are taken into consideration when deciding to use herbicides and pesticides of any sort.

Pharmaceuticals in waterbodies are likely to be an environmental issue into the future. Pharmaceuticals are synthetic or natural chemicals that can be found in prescription medicines, over-the-counter therapeutic drugs and veterinary drugs. Pharmaceuticals contain active ingredients that have been designed to have pharmacological effects and confer significant benefits to society. They can be introduced into water sources through sewage, which carries the excreta of individuals and patients who have used these chemicals, from uncontrolled drug disposal (e.g. discarding drugs into toilets) and from agricultural runoff comprising livestock manure. They have become chemicals of emerging concern to the public because of their potential to reach drinking-water. In Sweden, samples of fish (perch) were found to be contaminated with 23 pharmaceuticals, including antidepressants (such as Prozac), sedatives, antibiotics, painkillers and anti-cancer drugs. Baltic Sea salmon have been found contaminated with ethinyl estradiol, used in the contraceptive pill. Researchers in Athlone IT found vitellogenin (a marker for endocrine disruption in male fish downstream of waste water treatment plants in several rivers.

Chemicals from tailings ponds in old mining areas need to be monitored/rehabilitated. What is the timeline for the detailed studies and management plans for historic mines?

Issue 14 Climate Change

Question: How can we best plan to ensure the climate resilience of our water resources and aquatic ecosystems?

Ireland's native fish populations such as salmon, brown trout and Arctic char are cold water species and are more vulnerable to climate change and warming of waters than those fish species that have been introduced over the last 100 years. Mitigation measures for climate change, e.g. more planting of trees along river watercourses to provide stability and shading for native fish species. See issue 8 and 10 regarding nutrient enrichment and fine sediment which would all pose a problem with more flooding and higher flows.

With the increasing incidents of flooding in Ireland, investment into flood relief and contingency plans is paramount.

Issue 15 Invasive Alien Species

Question: What actions do you think we need to take to manage alien species in Ireland?

National Parks and Wildlife Services (NPWS) are the lead agency in monitoring and controlling invasive species in Ireland. IFI's funding to date for invasive species monitoring has been mainly from EU funding and IFI is very keen to see this area been strictly monitored.

Growth of invasive plant groups such as Giant Hogweed, Himalayan Balsam and Japanese Knotweed along with *Rhododendron* and *Gunnera* constitutes a significant adverse impact on the riparian ecology of watercourses. The tall and dense stands that these species can form impact by shrouding out the native species. These invasive plant species produce a lot of seeds and can disperse widely and rapidly. They commonly spread in a downstream manner; therefore ideal treatment would involve treatment from the top of a catchment downwards. IFI recommend strict management of these species and incentives to landowners to eradicate them. A series of protocols are available in respect to management/irradication of the various nuisance species. IFI have an invasive species App for iPhones to help identify and report findings. Stricter control on the sale of these species in garden centres etc. may also help control the spread.

The spreading of unwanted invasive/non-native species, such as the zebra mussel, is a growing problem. Procedures are required for disinfection of angling equipment or monitoring equipment in order to prevent dispersal of alien species and other organisms to uninfected waters. IFI have launched various biosecurity protocols, e.g. Disinfection of Angling Equipment, Disinfection of Boats and Boating Equipment, Disinfection Guidelines for Paddle Sports Enthusiasts, etc.

The native Irish freshwater fish fauna has been augmented by a large number of non-native species (e.g. perch, pike, dace, bream, tench, roach and rainbow trout). These have been introduced either deliberately or accidentally, e.g. angling activities, aquaculture and the aquarium trade. A non-native species is one that has been either intentionally or accidentally released into an environment outside of its natural geographical habitat range. Many non-native fish species have become established in the wild throughout Irish lakes and rivers, e.g. perch, roach, rudd and bream. Roach is a species which has been shown to affect salmonid production and cause a decline in brown trout angling catches. Within a few years of being introduced into a water body they can become the dominant species due to their high fecundity and they usually displace brown trout. Water bodies with non-native invasive fish species such as roach will not meet high status for WFD purposes due to the presence of these species. Future introductions of non-native species will also lead to a downgrading of the ecological status of a water body.

Stricter border control and stronger legislation for moving these species internally in Ireland is needed. Heavier fines if found transporting these invasive species into Ireland and within the country. Stricter control and tighter regulations on the sale of these species in pet shops, garden centres and other retailers may also help control the spread. More public awareness of the matter is required, for example, information evenings for anglers and countryside users.

Issue 16 Loss of High Status Waters

Question: How can we better protect High Status Waters?

WFD established a framework for the comprehensive management of water resources within the European Community, inland, estuarine, coastal and groundwater. The fundamental objectives of the WFD are to maintain high status of waters where it exists, to prevent any further deterioration in existing status and to ensure that all waters achieve good status by 2015, in compliance with the Surface Water regulations 2009 and Groundwater regulations 2010. These regulations impose a duty on all to undertake their functions in a manner that ensures compliance with the objectives of the River Basin Management Plans.

- Possible stricter controls and more incentives to farmers/landowners who farm/live in high status areas
- Better interaction with all farm/land owners, public awareness or face to face interaction from for example Teagasc advisors

I trust you will take our concerns and comments on board.

Yours sincerely,

Dr. Cathal Gallagher, Head of Research and Development,

Inland Fisheries Ireland

An Roinn Ealaíon, Oidhreachta,
Gnóthaí Réigiúnacha, Tuaithe agus Gaeltachta

Department of Arts, Heritage,
Regional, Rural and Gaeltacht Affairs

Your Ref: MDR1237 Lt0003
Our Ref: **DP00053/2016**
(Please quote in all related correspondence)

12 October 2016

RPS
West Pier Business Campus
Dun Laoghaire
Co. Dublin

Via email

FAO: Antonia Gaughran

Re: SEA scoping of the 2nd cycle of River Basin Management Planning under the Water Framework Directive

A chara

On behalf of the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs, I refer to correspondence received in connection with the above.

Outlined below are heritage-related observations/recommendations of the Department under the stated heading(s).

Nature Conservation

The Department refers to your correspondence of 12/09/16, on behalf of the Department of Housing, Planning, Community and Local Government (DHPCLG), in respect of the 2nd cycle of Ireland's River Basin Management Plan (RBMP) for 2017-2020. Reference is also made to the SEA scoping report supplied (September 2016). It is understood that 1) the plan is in preparation, 2) it has been determined that SEA is required, and 3) it has not yet been determined whether an appropriate assessment is required.

Context of submission

This submission is made in the context of this Department's role in relation to nature conservation, including as an environmental authority under SEA legislation. The observations below are offered to assist RPS and DHPCLG in meeting the obligations that arise in relation to European sites, other nature conservation sites, natural habitats and protected species, and biodiversity in general in the context of the plan and the environmental assessment(s) required. They are not exhaustive and are made without prejudice to any observations or recommendations that may be made by the Minister and this Department in the future.

The current consultation is in respect of the scope of the SEA. The opportunity has also been taken to make observations in relation to the appropriate assessment process, including the preparation of an NIS, in the event that DHPCLG's screening for appropriate assessment finds that these are necessary. While not specifically stated, it is assumed that the screening and assessment processes will be carried out under Part 5, Regulation 42 of the European Communities (Birds and Natural Habitats) Regulations, 2011[1] (hereafter the 2011 Regulations), as the plan is not a 'land use plan' for the purposes of Part XAB of the Planning and Development Act, 2000 as amended. The record-keeping obligations of a public authority, as set out in Regulation 61 of the 2011 Regulations[2], should also be noted.

Outline of plan

It is understood that the current approach is to have one RBMP, and 46 sub-plans, or catchment-level reports, which differs from the original approach. The plan and sub-plans are being developed on the basis of detailed characterisations, assessments and analyses which have involved identifying specific pressures, analysing trend data (nutrients and biological status), and generating of an overall risk status based on the potential risk of not meeting Water Framework Directive (WFD) objectives. This has allowed site specific pressures to be identified, and unique actions to be streamlined to achieve good status nationally, and prevent deterioration of high status water bodies. It is understood that, to inform the RBMP, a 'Characterisation Report' has been completed, and that a 'Programme of Measures' will be produced.

In addition to the scope and content of the plan as outlined, you will also be aware of the links between WFD and the nature directives (see below), and of the need for the plan to address the requirements of the latter.

SEA

Biodiversity, flora and fauna

SEA must assess the likely significant effects on biodiversity, flora and fauna. Biodiversity is generally defined as the variety of life on earth. An outline of key elements of biodiversity of potential relevance to the plan and plan area is given in Appendix 1, and includes sites, habitats, species of includes flora and fauna and ecological networks. There are interrelationships between biodiversity, flora and fauna and most other environmental issues or topics, including population, human health, water, soil, air, climatic factors, landscape, and possibly architectural and archaeological heritage, and the potentially significant effects of the plan on these interdependencies should be explored and assessed in the SEA.

There will be overlaps and linkages between biodiversity, flora and fauna in the SEA, and sites, habitats and species of relevance to appropriate assessment and Articles 6(3) and 6(4) of the Habitats Directive. The SEA should address all such issues in general, as well as any other relevant provisions of the Habitats Directive, including in respects of Article 6(1) (see below), 6(2) and 10 of the Habitats Directive, and associated national legislation. See also the general duties of a public authority below.

General

A plan should be developed to integrate biodiversity considerations in a positive, proactive and precautionary way, and this should be reflected in the text and content of the plan, including its aims, objectives and policies, as well as in any maps. The findings of the SEA should be assimilated into and modify the content of the plan.

[1] SI 477 of 2011, Part 5

[2] Regulation 61 requires public authorities to retain records for at least 12 years of a range of documents pertaining to screenings and appropriate assessments, including any information or advice obtained by the public authority.

The biodiversity, flora and fauna section of the environmental report should be prepared by or in conjunction with a suitably qualified ecologist(s), and other specialists as necessary, and in conjunction with the NIS to ensure full integration of biodiversity issues and concerns. The EPA's *Integrated Biodiversity Impact Assessment* best practice guidance is of relevance in this regard.

The environmental report is required to contain information on environmental protection objectives which are established at international to national level, and are relevant to the plan. For biodiversity, flora and fauna, these should integrate with the objectives and obligations of other directives such as the Habitats Directive, the Birds Directive, the Water Framework Directive (see below) and the Floods Directive, and with the Wildlife Acts, 1976-2000, and the National Biodiversity Plan.

Strategic environmental objectives should be included for all nature conservation sites (not just European sites), protected species, and ecological corridors and stepping stones.

Available guidance

Existing EU and Irish guidance on SEA and appropriate assessment should be followed in general terms when carrying out the environmental assessments, but you should also be cognisant of changes in the interpretation and application of directives and national legislation arising from case law of the Court of Justice of the European Union (CJEU), and of the Irish courts, particularly in respect of Article 6 of the Habitats Directive. There should be due regard to the terminology, stages and tests of the assessment processes as set out in relevant legislation, notably in the case of the appropriate assessment process. Where legislation updates or amends elements of existing guidance, the former should be used or applied in preference in all cases.

Available ecological information

The National Parks and Wildlife Service website (www.npws.ie) is a key source of data, information and publications on nature conservation sites and biodiversity issues of potential relevance to the plan area and the environmental assessment(s) required. This includes site boundaries, site synopses, lists of qualifying interests (SACs) and special conservation interests (SPAs), conservation objectives (European sites), features of interest (NHAs), and dates of site designation. GIS datasets are available for download for nature conservation sites[3], and for certain habitats and species arising from various sources, including national surveys. Other NPWS-held data on habitats and species may be requested by submitting a 'Data Request Form'[4].

Site-specific conservation objectives (SSCOs), and associated backing documents, are available for some European sites on the NPWS website[5]. The backing document for lakes[6] should be consulted, in particular. GIS datasets associated with site-specific conservation objectives are also available for download: http://www.npws.ie/mapsanddata/habitatspeciesdata/. For all other European sites, generic conservation objectives are available and the most up-to-date versions should be used and referenced in any relevant documents. The full scope of conservation objectives should be used, as appropriate, to guide and inform the scope of the scientific assessment and analysis in an NIS. The most recent version of the conservation objectives should be used and referenced in relevant documentation, and each of the individual conservation objectives of relevance should be addressed separately.

The Habitats Directive Article 17 reports for 2007 and 2013, which should be consulted, are available from http://www.npws.ie/article-17-reports-0. These highlight a range of water-related pressures on water-dependent Annex I habitats and annexed species, including hydrological and

[3] Special Areas of Conservation (SACs, currently known as candidate sites but fully legally protected); Special Protection Areas (SPAs); Natural Heritage Areas (NHAs); and proposed Natural Heritage Areas (pNHAs)
[4] Available from http://www.npws.ie/maps-and-data/request-data
[5] http://www.npws.ie/protectedsites/conservationmanagementplanning/conservationobjectives/
[6] http://www.npws.ie/content/publications/habitats-directive-annex-i-lake-habitats-working-interpretation-purposes-site

morphological change and sediment, organic matter and nutrient pollution. The recent national report on Article 12 of the Birds Directive, at http://www.npws.ie/news/birds-directive-article-12-reporting, should also be consulted. The national habitat surveys that have been undertaken, and their resulting reports, should be consulted, including for information regarding the definitions and evaluations that have been developed for Annex I habitat types in Ireland.

Data on ecological features and environmental factors in or near the project area will be available from various other sources including, for example:

- Other organisations, e.g. National Biodiversity Data Centre, BirdWatch Ireland, Bat Conservation Ireland, etc.
- SEA Environmental Reports, NIRs/NISs and other reports for other plans, including national plans and the draft Flood Risk Management Plans

Links between WFD and nature directives

The Department has noted limited, if any, referencing of the Birds and Habitats Directives, and of the linkages between these directives and the WFD, in the SEA scoping report. Your attention is drawn to the following European Commission paper from 2011: '*Links between the Water Framework Directive (WFD 2000/60/EC) and Nature Directives (Birds Directive 2009/147/EC and Habitats Directive 92/43/EEC) – Frequently Asked Questions*'[7], which will assist in this regard. In addition, the NERC report NERR064 (2016), '*A Narrative for Conserving Freshwater and Wetland Habitats in England*'[8], may also be of assistance.

You will be aware that the WFD has three environmental objectives, one of which is specifically for protected areas. Article 4 1. (c) of the WFD specifies that the programmes of measures in an RBMP "*shall achieve compliance with any standards and objectives* [for protected areas] *at the latest 15 years after the date of entry into force of"* the WFD. Article 6 and Annex IV (1.1. (v)) of the WFD specify that the register of protected areas shall "*include areas designated for the protection of habitats or species where the maintenance or improvement of the status of water is an important factor in their protection*", including, but not restricted to, SACs and SPAs (European Commission 2011). As measures required to implement the Birds and Habitats Directives are basic measures under Article 11 (3) and Part A of Annex VI of the WFD, the WFD programmes of measures must include water-related measures necessary to achieve the standards and objectives for the SACs and SPAs on the register (European Commission 2011).

The various requirements of Article 6 of the Habitats Directive in relation to the conservation, protection and management of (European) sites should be noted, including the obligations of Article 6(1), which refers to establishing the necessary conservation measures for sites, and measures which correspond to the ecological requirements of the Annex I habitats and Annex II species present on these sites. In addition, the plans must be compliant with the obligations of Articles 6(2) and 6(3) of the Habitats Directive which are broader and more encompassing than water-dependent species and habitats.

While the WFD's objectives of achieving good status nationally, and of prevent deterioration of high status water bodies, are welcomed, and will be beneficial for European sites and biodiversity in general, they do not necessarily cover or deliver the conservation objectives for European sites, particularly where an Annex I habitat or Annex II species requires higher than good status, or the conservation objective is to restore favourable conservation condition. This arises in the case of SACs where the Annex II species, Freshwater Pearl Mussel (*Margaritifera margaritifera*), is a qualifying interest, but may also arise in the case of Annex I lake habitats in certain sites, or where there are specific needs that are not covered by the methods used by the EPA and local authorities.

[7] http://ec.europa.eu/environment/nature/natura2000/management/docs/FAQ-WFD%20final.pdf
[8] http://publications.naturalengland.org.uk/publication/6524433387749376?category=429415

The WFD requires inclusion of water-related measures for European sites, but also allows for other nature conservation or biodiversity considerations to be addressed, e.g. for NHAs, proposed NHAs (pNHAs), water-dependent species that are protected under 2011 Regulations and the Wildlife Acts, 1976-2000 (including Flora Protection Order, 2015, species), as well as threatened water-dependent species listed on the 'Red Lists' for Ireland (https://www.npws.ie/publications/red-lists).

SEA Monitoring

The monitoring programme should be clearly set out and developed in such a manner as to ensure it will identify the effects on the environment that are likely to arise, or will arise, and to monitor the effectiveness of any mitigation on which the assessment relies. While it may be considered efficient to use monitoring programmes that are already in place and run by other authorities, it is important to establish that these are in fact designed in such a way that they will identify the effects anticipated from the particular plan in question. As such, it is important to understand the objectives, methodologies, parameters, assumptions *etc.* of any existing monitoring programme that is proposed to be used in such a way.

It is advisable to clearly set out where responsibilities for monitoring programmes lie, their frequency, their reporting/publication arrangements, as well as the procedures that will be put in place to ensure that there is a response mechanism to any unforeseen or undesirable negative effects/results and an undertaking of remedial action, if necessary.

Appropriate assessment

While the Department notes that it has not yet been determined if an appropriate assessment is required, the following advice is offered in the event that it is.

General notes on screening for appropriate assessment and the preparation of an NIS are included in Appendices 2 and 3, respectively, and should be taken into account where relevant.

When an appropriate assessment is carried out by a public authority[9] (or competent authority under planning legislation), it is required to take account of the (final) NIS, and should also address the content of submissions made where issues or concerns are raised regarding the likely effects on European sites. Any subsequent changes to a plan should also be assessed. Case law of the Court of Justice of the European Union (e.g. case C-258/11) has established that an appropriate assessment cannot have lacunae, and must contain complete, precise and definitive findings and conclusions with regard to the implications of a project for the conservation objectives and integrity of a European site or sites. The decision-making authority has obligations to address scientific uncertainties or discrepancies, including matters raised by other parties, particularly in relation to the implications for European sites and their conservation objectives in the appropriate assessment (e.g. judgment of Justice Barton (Irish High Court, January 2016) in the case of Balz and others versus An Bord Pleanála); the final determinations should demonstrate how the differing scientific opinions were resolved, noting the standards of the appropriate assessment as outlined above.

Public authorities and agents/consultants acting on their behalf are advised to have regard to the following Guidance.

- Department of Environment, Heritage and Local Government. 2010. *Appropriate assessment of plans and projects in Ireland: Guidance for planning authorities*. Available on www.npws.ie.
- European Commission, 2011. Wind energy developments and Natura 2000.
- European Commission, 2011. The Implementation of the Birds and Habitats Directives in estuaries and coastal zones with particular attention to port development and dredging.

[9] As defined in Part 1 of the European Communities (Birds and Natural Habitats) Regulations, 2011, and including DHPCLG, the EPA and local authorities

- European Commission, 2000. *Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*.
- European Commission, 2001. Methodological guidance on the provisions of Article 6 (3) and (4) of the Habitats Directive 92/43/EEC.

More guidance documents from the European Commission may become available at: http://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm

It is also advisable to take account of any European or national jurisprudence that supersedes any guidance within these documents. Information relating to every case brought before the European Court of Justice and the Court of First Instance since 1953 can be found on the following webpage (access to the case-law by case number): http://curia.europa.eu/fr/content/juris/index.htm. The following publications also provide useful information on relevant cases:

- European Commission, 2006. *Nature and Biodiversity Cases: Ruling of the European Court of Justice;*
- Ecosystems Ltd, 2014. *Article 6 of the Habitats Directive: Rulings of the European Court of* Justice.

Both available at
http://ec.europa.eu/environment/nature/legislation/caselaw/index_en.htm as of July 2016.

Selected examples of Jurisprudence concerning Article 6 of the Habitats Directive:

- European Court of Justice Ruling C-241/08 concerning the term "*not directly connected with or necessary for the management of the site*".

Procedural Obligations

- Balz et al v An Bord Pleanala (Judicial Review, Ireland 2016)
- Kelly v An Bord Pleanala (Judicial Review, Ireland, 2014)
- European Court of Justice (Case C-259/11) Sweetman v An Bord Pleanala (2013)

Article 6 (3) Mitigation or Article 6 (4) Compensation

- European Court of Justice (Case C-521/12) Briels (2014).

General duties of a public authority

Your attention is drawn to Regulation 27 of the 2011 Regulations as this places particular duties on all public authorities in relation to European sites. Among other things, this includes a duty to exercise all functions, including but not only consent functions, in compliance with, and so as to secure compliance with the requirements of the Habitats and Birds Directives and the 2011 Regulations. Public authorities are obliged, when exercising their functions, to take appropriate steps to avoid in European sites the deterioration of natural habitats and the habitats of species, as well as disturbance of species for which a site has been designated insofar as this disturbance could be significant in relation to the objectives of the Habitats Directive. All public authorities are advised to incorporate such obligations into their plans and programmes, and associated assessments, as required and relevant. This could usefully include the development of systems that will monitor and ensure the compliance of "downstream" projects with these obligations, as well as any internal mechanisms that may be needed to ensure compliance.

The above observations/recommendations are based on the papers submitted to this Department on a pre-planning basis and are made without prejudice to any observations that the Minister may make in the context of any consultation arising on foot of any development application referred to the Minister, by the planning authority/ies, in her/his role as statutory consultee under the Planning and Development Act, 2000, as amended.

You are requested to send further communications to this Department's Development Applications Unit (DAU) at manager.dau@ahg.gov.ie (team monitored); if this is not possible, correspondence may alternatively be sent to:

The Manager
Development Applications Unit (DAU)
Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs
Newtown Road
Wexford
Y35 AP90

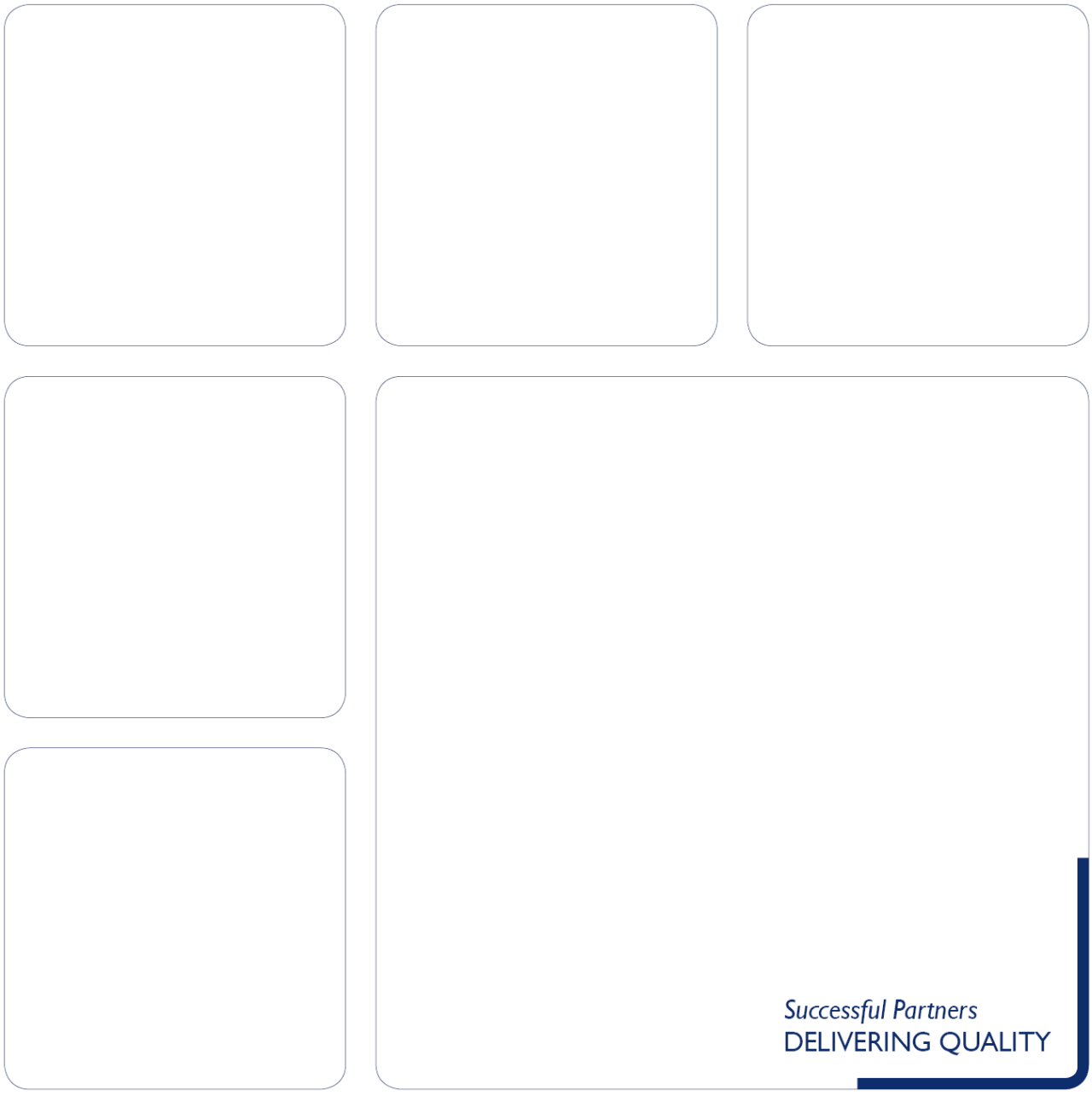
Is mise, le meas

Joanne Lyons
Development Applications Unit
Tel: 053-9117447

RPS

Appendix B

Special Areas of Conservation (SACs) Republic of Ireland



Successful Partners
DELIVERING QUALITY

SAC	Site Code	SAC	Site Code
Killyconny Bog (Cloghbally) SAC	000006	Great Island Channel SAC	001058
Lough Oughter & Associated Loughs SAC	000007	Kilkieran Lake & Castlefreke Dunes SAC	001061
Ballyallia Lake SAC	000014	Myross Wood SAC	001070
Ballycullinan Lake SAC	000016	Ballyness Bay SAC	001090
Ballyogan Lough SAC	000019	Coolvoy Bog SAC	001107
Black Head-Poulsallagh Complex SAC	000020	Dunragh Loughs/Pettigo Plateau SAC	001125
Danes Hole, Poulnalecka SAC	000030	Gweedore Bay & Islands SAC	001141
Dromore Woods & Loughs SAC	000032	Kindrum Lough SAC	001151
Inagh River Estuary SAC	000036	Muckish Mountain SAC	001179
Pouladatig Cave SAC	000037	Sheephaven SAC	001190
Lough Gash Turlough SAC	000051	Termon Strand SAC	001195
Moneen Mountain SAC	000054	Keeper Hill SAC	001197
Moyree River System SAC	000057	Glenasmole Valley SAC	001209
Poulnagordon Cave (Quin) SAC	000064	Aughrusbeg Machair &Lake SAC	001228
Ballymacoda (Clonpriest & Pillmore) SAC	000077	Courtmacsherry Estuary SAC	001230
Glengarriff Harbour & Woodland SAC	000090	Carrownagappul Bog SAC	001242
Clonakilty Bay SAC	000091	Cregduff Lough SAC	001251
Caha Mountains SAC	000093	Dog's Bay SAC	001257
Lough Hyne Nature Reserve And Environs SAC	000097	Gortnandarragh Limestone Pavement SAC	001271
Roaringwater Bay & Islands SAC	000101	Inisheer Island SAC	001275
Sheep's Head SAC	000102	Kiltiernan Turlough SAC	001285
St. Gobnet's Wood SAC	000106	Omey Island Machair SAC	001309
The Gearagh SAC	000108	Rusheenduff Lough SAC	001311
Three Castle Head To Mizen Head SAC	000109	Ross Lake & Woods SAC	001312
Aran Island (Donegal) Cliffs SAC	000111	Rosturra Wood SAC	001313
Ballintra SAC	000115	Termon Lough SAC	001321
Ballyarr Wood SAC	000116	Cloonee & Inchiquin Loughs, Uragh Wood SAC	001342
Croaghonagh Bog SAC	000129	Mucksna Wood SAC	001371
Donegal Bay (Murvagh) SAC	000133	Ballynafagh Lake SAC	001387
Durnesh Lough SAC	000138	Rye Water Valley/Carton SAC	001398
Fawnboy Bog/Lough Nacung SAC	000140	Arroo Mountain SAC	001403
Gannivegil Bog SAC	000142	Glen Bog SAC	001430
Horn Head & Rinclevan SAC	000147	Glenstal Wood SAC	001432
Inishtrahull SAC	000154	Clogher Head SAC	001459
Lough Eske And Ardnamona Wood SAC	000163	Clew Bay Complex SAC	001482
Lough Nagreany Dunes SAC	000164	Doogort Machair/Lough Doo SAC	001497
Lough Nillan Bog (Carrickatlieve) SAC	000165	Erris Head SAC	001501
Magheradrumman Bog SAC	000168	Keel Machair/Menaun Cliffs SAC	001513
Meenaguse/Ardbane Bog SAC	000172	Lough Cahasy, Lough Baun & Roonah Lough SAC	001529
Meentygrannagh Bog SAC	000173	Mocorha Lough SAC	001536
Curraghchase Woods SAC	000174	Castletownshend SAC	001547
Rathlin O'Birne Island SAC	000181	Urlaur Lakes SAC	001571
Sessiagh Lough SAC	000185	Castlesampson Esker SAC	001625
Slieve League SAC	000189	Annaghmore Lough (Roscommon) SAC	001626
Slieve Tooey/Tormore Island/Loughros	000190	Four Roads Turlough SAC	001637

SAC	Site Code	SAC	Site Code
Beg Bay SAC			
St. John's Point SAC	000191	Bricklieve Mountains & Keishcorran SAC	001656
Tranarossan & Melmore Lough SAC	000194	Knockalongy & Knockachree Cliffs SAC	001669
West Of Ardara/Maas Road SAC	000197	Lough Arrow SAC	001673
Baldoyle Bay SAC	000199	Streedagh Point Dunes SAC	001680
Howth Head SAC	000202	Liskeenan Fen SAC	001683
Lambay Island SAC	000204	Kilmuckridge-Tinnaberna Sandhills SAC	001741
Malahide Estuary SAC	000205	Kilpatrick Sandhills SAC	001742
North Dublin Bay SAC	000206	Holdenstown Bog SAC	001757
Rogerstown Estuary SAC	000208	Magherabeg Dunes SAC	001766
South Dublin Bay SAC	000210	Lough Carra/Mask Complex SAC	001774
Inishmaan Island SAC	000212	Pilgrim's Road Esker SAC	001776
Inishmore Island SAC	000213	Kilroosky Lough Cluster SAC	001786
River Shannon Callows SAC	000216	White Lough, Ben Loughs & Lough Doo SAC	001810
Coolcam Turlough SAC	000218	Lough Forbes Complex SAC	001818
Barroughter Bog SAC	000231	Split Hills &Long Hill Esker SAC	001831
Caherglassaun Turlough SAC	000238	Philipston Marsh SAC	001847
Castletaylor Complex SAC	000242	Galmoy Fen SAC	001858
Cloonmoylan Bog SAC	000248	Derryclogher (Knockboy) Bog SAC	001873
Coole-Garryland Complex SAC	000252	Glanmore Bog SAC	001879
Croaghill Turlough SAC	000255	Meenaguse Scragh SAC	001880
Derrycrag Wood Nature Reserve SAC	000261	Maulagowna Bog SAC	001881
Galway Bay Complex SAC	000268	Mullaghanish Bog SAC	001890
Inishbofin & Inishshark SAC	000278	Unshin River SAC	001898
Kilsallagh Bog SAC	000285	Cloonakillina Lough SAC	001899
Kiltartan Cave (Coole) SAC	000286	Glendree Bog SAC	001912
Levally Lough SAC	000295	Sonnagh Bog SAC	001913
Lisnageeragh Bog & Ballinastack Turlough SAC	000296	Glenade Lough SAC	001919
Lough Corrib SAC	000297	Bellacorick Bog Complex SAC	001922
Lough Cutra SAC	000299	East Burren Complex SAC	001926
Lough Lurgeen Bog/Glenamaddy Turlough SAC	000301	Mweelrea/Sheeffry/Erriff Complex SAC	001932
Lough Rea SAC	000304	Comeragh Mountains SAC	001952
Loughatorick South Bog SAC	000308	Croaghaun/Slievemore SAC	001955
Peterswell Turlough SAC	000318	Boyne Coast & Estuary SAC	001957
Pollnaknockaun Wood Nature Reserve SAC	000319	Ballyhoorisky Point To Fanad Head SAC	001975
Rahasane Turlough SAC	000322	Lough Gill SAC	001976
Rosroe Bog SAC	000324	Tamur Bog SAC	001992
Shankill West Bog SAC	000326	Bellacragher Saltmarsh SAC	002005
Slyne Head Islands SAC	000328	Ox Mountains Bogs SAC	002006
Tully Mountain SAC	000330	Maumturk Mountains SAC	002008
Akeragh, Banna & Barrow Harbour SAC	000332	Old Domestic Building (Keevagh) SAC	002010
Ballinskelligs Bay & Inny Estuary SAC	000335	North Inishowen Coast SAC	002012
Castlemaine Harbour SAC	000343	The Twelve Bens/Garraun Complex SAC	002031
Old Domestic Building, Dromore Wood SAC	000353	Boleybrack Mountain SAC	002032
Kilgarvan Ice House SAC	000364	Connemara Bog Complex SAC	002034
Killarney National Park, Macgillycuddy's Reeks & Caragh River	000365	Ballyhoura Mountains SAC	002036

SAC	Site Code	SAC	Site Code
Catchment SAC			
Lough Yganavan & Lough Nambrackdarrig SAC	000370	Carrigeenamronety Hill SAC	002037
Mount Brandon SAC	000375	Old Domestic Building, Curraglass Wood SAC	002041
Sheheree (Ardagh) Bog SAC	000382	Cloghernagore Bog & Glenveagh National Park SAC	002047
Ballynafagh Bog SAC	000391	Tralee Bay & Magharees Peninsula, West To Cloghane SAC	002070
Pollardstown Fen SAC	000396	Slyne Head Peninsula SAC	002074
Red Bog, Kildare SAC	000397	Ballinafad SAC	002081
Hugginstown Fen SAC	000404	Newhall & Edenvale Complex SAC	002091
The Loughans SAC	000407	Old Domestic Building, Askive Wood SAC	002098
Slieve Bloom Mountains SAC	000412	Corliskea/Trien/Cloonfelliv Bog SAC	002110
Lough Melvin SAC	000428	Kilkieran Bay & Islands SAC	002111
Barrigone SAC	000432	Ballyseedy Wood SAC	002112
Tory Hill SAC	000439	Lough Coy SAC	002117
Lough Ree SAC	000440	Barnahallia Lough SAC	002118
Fortwilliam Turlough SAC	000448	Lough Nageeron SAC	002119
Carlingford Mountain SAC	000453	Lough Bane & Lough Glass SAC	002120
Dundalk Bay SAC	000455	Lough Lene SAC	002121
Killala Bay/Moy Estuary SAC	000458	Wicklow Mountains SAC	002122
Ardkill Turlough SAC	000461	Ardmore Head SAC	002123
Balla Turlough SAC	000463	Bolingbrook Hill SAC	002124
Bellacorick Iron Flush SAC	000466	Anglesey Road SAC	002125
Mullet/Blacksod Bay Complex SAC	000470	Pollagoona Bog SAC	002126
Brackloon Woods SAC	000471	Murvey Machair SAC	002129
Broadhaven Bay SAC	000472	Tully Lough SAC	002130
Ballymaglancy Cave, Cong SAC	000474	Lough Nageage SAC	002135
Carrowkeel Turlough SAC	000475	Lower River Suir SAC	002137
Carrowmore Lake Complex SAC	000476	Mountmellick SAC	002141
Cloughmoyne SAC	000479	Newport River SAC	002144
Clyard Kettle-Holes SAC	000480	Lisduff Fen SAC	002147
Cross Lough (Killadoon) SAC	000484	Newgrove House SAC	002157
Corraun Plateau SAC	000485	Kenmare River SAC	002158
Doocastle Turlough SAC	000492	Mulroy Bay SAC	002159
Duvillaun Islands SAC	000495	Long Bank SAC	002161
Flughany Bog SAC	000497	River Barrow & River Nore SAC	002162
Glenamoy Bog Complex SAC	000500	Lough Golagh & Breesy Hill SAC	002164
Greaghans Turlough SAC	000503	Lower River Shannon SAC	002165
Kilglassan/Caheravoostia Turlough Complex SAC	000504	Blackwater River (Cork/Waterford) SAC	002170
Inishkea Islands SAC	000507	Bandon River SAC	002171
Lackan Saltmarsh & Kilcummin Head SAC	000516	Blasket Islands SAC	002172
Lough Gall Bog SAC	000522	Blackwater River (Kerry) SAC	002173
Shrule Turlough SAC	000525	Leannan River SAC	002176
Moore Hall (Lough Carra) SAC	000527	Lough Dahybaun SAC	002177
Oldhead Wood SAC	000532	Towerhill House SAC	002179
Owenduff/Nephin Complex SAC	000534	Gortacarnaun Wood SAC	002180
Skealoghan Turlough SAC	000541	Drummin Wood SAC	002181
Slieve Fyagh Bog SAC	000542	Slieve Mish Mountains SAC	002185

SAC	Site Code	SAC	Site Code
All Saints Bog & Esker SAC	000566	Drongawn Lough SAC	002187
Charleville Wood SAC	000571	Farranamanagh Lough SAC	002189
Clara Bog SAC	000572	Ireland's Eye SAC	002193
Ferbane Bog SAC	000575	Glenloughaun Esker SAC	002213
Fin Lough (Offaly) SAC	000576	Killeglan Grassland SAC	002214
Mongan Bog SAC	000580	Island Fen SAC	002236
Moyclare Bog SAC	000581	Lough Derg, North-East Shore SAC	002241
Raheenmore Bog SAC	000582	Clare Island Cliffs SAC	002243
Cuilcagh - Anierin Uplands SAC	000584	Ardrahan Grassland SAC	002244
Sharavogue Bog SAC	000585	Old Farm Buildings, Ballymacrogan SAC	002245
Ballinturly Turlough SAC	000588	Ballycullinan, Old Domestic Building SAC	002246
Bellanagare Bog SAC	000592	Toonagh Estate SAC	002247
Callow Bog SAC	000595	The Murrough Wetlands SAC	002249
Carrowbehy/Caher Bog SAC	000597	Carrowmore Dunes SAC	002250
Cloonchambers Bog SAC	000600	Thomastown Quarry SAC	002252
Derrinea Bog SAC	000604	Ballyprior Grassland SAC	002256
Lough Fingall Complex SAC	000606	Moanour Mountain SAC	002257
Errit Lough SAC	000607	Silvermines Mountains West SAC	002258
Lisduff Turlough SAC	000609	Tory Island Coast SAC	002259
Lough Croan Turlough SAC	000610	Magharee Islands SAC	002261
Lough Funshinagh SAC	000611	Valencia Harbour/Portmagee Channel SAC	002262
Mullygollan Turlough SAC	000612	Kerry Head Shoal SAC	002263
Cloonshanville Bog SAC	000614	Kilkee Reefs SAC	002264
Ballysadare Bay SAC	000622	Kingstown Bay SAC	002265
Ben Bulben, Gleniff & Glenade Complex SAC	000623	Achill Head SAC	002268
Bunduff Lough &Machair/Trawalua/Mullaghmore SAC	000625	Carnsore Point SAC	002269
Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC	000627	Wicklow Reef SAC	002274
Lough Hoe Bog SAC	000633	Askeaton Fen Complex SAC	002279
Lough Nabrickkeagh Bog SAC	000634	Dunbeacon Shingle SAC	002280
Templehouse And Cloonacleigha Loughs SAC	000636	Reen Point Shingle SAC	002281
Turloughmore (Sligo) SAC	000637	Rutland Island & Sound SAC	002283
Union Wood SAC	000638	Lough Swilly SAC	002287
Ballyduff/Clonfinane Bog SAC	000641	Carrowbaun, Newhall And Ballylee Turloughs SAC	002293
Galtee Mountains SAC	000646	Cahermore Turlough SAC	002294
Kilcarren-Firville Bog SAC	000647	Ballinduff Turlough SAC	002295
Helvick Head SAC	000665	Williamstown Turloughs SAC	002296
Nier Valley Woodlands SAC	000668	River Moy SAC	002298
Tramore Dunes & Backstrand SAC	000671	River Boyne & River Blackwater SAC	002299
Garriskil Bog SAC	000679	River Finn SAC	002301
Lough Ennell SAC	000685	Dunmuckrum Turloughs SAC	002303
Lough Owel SAC	000688	Carlingford Shore SAC	002306
Scragh Bog SAC	000692	Slieve Bernagh Bog SAC	002312
Ballyteige Burrow SAC	000696	Ballymore Fen SAC	002313
Bannow Bay SAC	000697	Old Domestic Buildings, Rylane SAC	002314
Cahore Polders & Dunes SAC	000700	Glanlough Woods SAC	002315
Lady's Island Lake SAC	000704	Ratty River Cave SAC	002316

SAC	Site Code	SAC	Site Code
Saltee Islands SAC	000707	Cregg House Stables, Crusheen SAC	002317
Screen Hills SAC	000708	Knockanira House SAC	002318
Tacumshin Lake SAC	000709	Kilkishen House SAC	002319
Raven Point Nature Reserve SAC	000710	Kildun Souterrain SAC	002320
Ballyman Glen SAC	000713	Glendine Wood SAC	002324
Bray Head SAC	000714	Mouds Bog SAC	002331
Carriggower Bog SAC	000716	Coolrain Bog SAC	002332
Deputy's Pass Nature Reserve SAC	000717	Knockacoller Bog SAC	002333
Glen Of The Downs SAC	000719	Carn Park Bog SAC	002336
Knocksink Wood SAC	000725	Crosswood Bog SAC	002337
Buckroney-Brittas Dunes & Fen SAC	000729	Drumalough Bog SAC	002338
Vale Of Clara (Rathdrum Wood) SAC	000733	Ballynamona Bog & Corkip Lough SAC	002339
Hook Head SAC	000764	Moneybeg & Clareisland Bogs SAC	002340
Blackstairs Mountains SAC	000770	Ardagullion Bog SAC	002341
Slaney River Valley SAC	000781	Mount Hevey Bog SAC	002342
Cullahill Mountain SAC	000831	Tullaher Lough & Bog SAC	002343
Spahill & Clomantagh Hill SAC	000849	Brown Bog SAC	002346
Clonaslee Eskers & Derry Bog SAC	000859	Camderry Bog SAC	002347
Lisbigney Bog SAC	000869	Clooneen Bog SAC	002348
Ridge Road, SW Of Rapemills SAC	000919	Corbo Bog SAC	002349
The Long Derries, Edenderry SAC	000925	Curraghlehanagh Bog SAC	002350
Clare Glen SAC	000930	Moanveanlagh Bog SAC	002351
Kilduff, Devilsbit Mountain SAC	000934	Monivea Bog SAC	002352
Silvermine Mountains SAC	000939	Redwood Bog SAC	002353
Corratirrim SAC	000979	Tullaghanrock Bog SAC	002354
Ballyteige (Clare) SAC	000994	Ardgraigue Bog SAC	002356
Ballyvaughan Turlough SAC	000996	Blackwater Bank SAC	002953
Glenomra Wood SAC	001013	West Connacht Coast SAC	002998
Carrowmore Point To Spanish Point & Islands SAC	001021	Hemptons Turbot Bank SAC	002999
Barley Cove To Ballyrisode Point SAC	001040	Rockabill to Dalkey Island SAC	003000
Cleanderry Wood SAC	001043	Codling Fault Zone SAC	003015
Derrinlough (Cloonkeenleananode) Bog SAC	002197	Girley (Drewstown) Bog SAC	002203
Ballygar (Aghrane) Bog SAC	002199	Wooddown Bog SAC	002205
Aughrim (Aghrane) Bog SAC	002200	Scohaboy (Sopwell) Bog SAC	002206
Derragh Bog SAC	002201	Arragh More (Derrybreen) Bog SAC	002207
Mount Jessop Bog SAC	002202	-	-

Offshore SAC	Site Code	Offshore SAC	Site Code
Belgica Mound Province SAC	002327	North West Porcupine Bank SAC	002330
Hovland Mound Province SAC	002328	Porcupine Bank Canyon SAC	003001
South-West Porcupine Bank SAC	002329	South-East Rockall Bank SAC	003002

Appendix C

Special Protection Areas (SPAs) Republic of Ireland

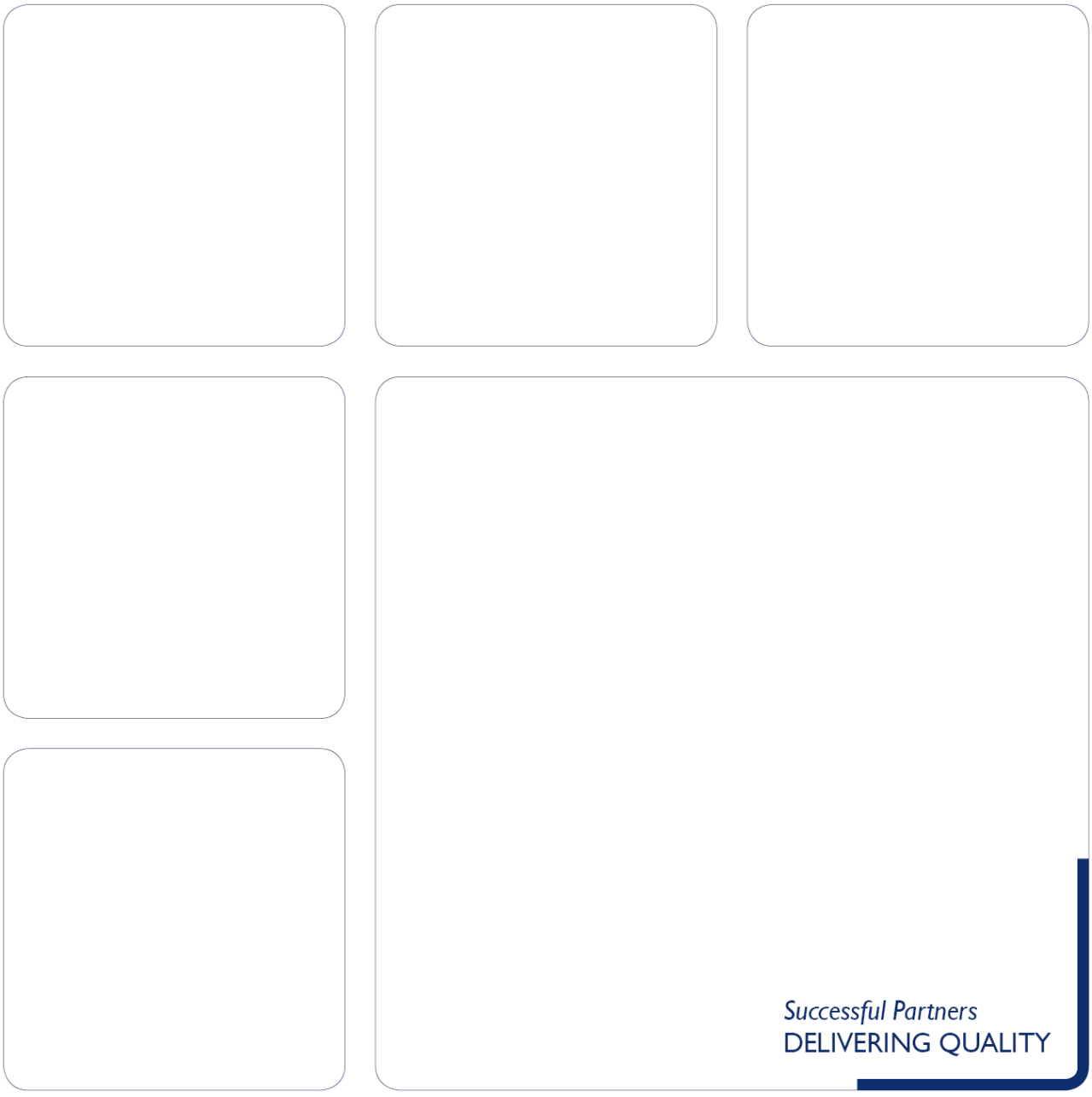
Special Protection Area (SPA)	Site Code	Special Protection Area (SPA)	Site Code
Saltee Islands SPA	004002	Pettigo Plateau Nature Reserve SPA	004099
Puffin Island SPA	004003	Inishtrahull SPA	004100
Inishkea Islands SPA	004004	Ballykenny-Fisherstown Bog SPA	004101
Cliffs of Moher SPA	004005	Garriskil Bog SPA	004102
North Bull Island SPA	004006	All Saints Bog SPA	004103
Skelligs SPA	004007	Bellanagare Bog SPA	004105
Blasket Islands SPA	004008	Coole-Garryland SPA	004107
Lady's Island Lake SPA	004009	Eirk Bog SPA	004108
Drumcliff Bay SPA	004013	The Gearagh SPA	004109
Rockabill SPA	004014	Lough Nillan Bog SPA	004110
Rogerstown Estuary SPA	004015	Duvillaun Islands SPA	004111
Baldoyle Bay SPA	004016	Howth Head Coast SPA	004113
Mongan Bog SPA	004017	Illaunonearaun SPA	004114
The Raven SPA	004019	Inishduff SPA	004115
Ballyteigue Burrow SPA	004020	Inishkeel SPA	004116
Old Head of Kinsale SPA	004021	Ireland's Eye SPA	004117
Ballycotton Bay SPA	004022	Keeragh Islands SPA	004118
Ballymacoda Bay SPA	004023	Loop Head SPA	004119
South Dublin Bay and River Tolka Estuary SPA	004024	Rathlin O'Birne Island SPA	004120
Broadmeadow/Swords Estuary SPA	004025	Roaninish SPA	004121
Dundalk Bay SPA	004026	Skerries Islands SPA	004122
Tramore Back Strand SPA	004027	Sovereign Islands SPA	004124
Blackwater Estuary SPA	004028	Magharee Islands SPA	004125
Castlemaine Harbour SPA	004029	Wicklow Head SPA	004127
Cork Harbour SPA	004030	Ballysadare Bay SPA	004129
Inner Galway Bay SPA	004031	Illancrone and Inishkeeragh SPA	004132
Dungarvan Harbour SPA	004032	Aughris Head SPA	004133
Bannow Bay SPA	004033	Lough Rea SPA	004134
Trawbreaga Bay SPA	004034	Ardboline Island and Horse Island SPA	004135
Cummeen Strand SPA	004035	Clare Island SPA	004136
Killala Bay/Moy Estuary SPA	004036	Dovegrove Callows SPA	004137
Blacksod Bay/Broadhaven SPA	004037	Lough Croan Turlough SPA	004139
Killarney National Park SPA	004038	Four Roads Turlough SPA	004140
Derryveagh And Glendowan Mountains SPA	004039	Cregganna Marsh SPA	004142
Wicklow Mountains SPA	004040	Cahore Marshes SPA	004143
Ballyallia Lough SPA	004041	High Island, Inishshark and Davillaun SPA	004144
Lough Corrib SPA	004042	Durnesh Lough SPA	004145
Lough Derravaragh SPA	004043	Malin Head SPA	004146
Lough Ennell SPA	004044	Fanad Head SPA	004148
Glen Lough SPA	004045	Falcarragh to Meenlaragh SPA	004149
Lough Iron SPA	004046	West Donegal Coast SPA	004150
Lough Owel SPA	004047	Donegal Bay SPA	004151
Lough Gara SPA	004048	Inishmore SPA	004152
Lough Oughter SPA	004049	Dingle Peninsula SPA	004153
Lough Arrow SPA	004050	Iveragh Peninsula SPA	004154
Lough Carra SPA	004051	Beara Peninsula SPA	004155
Carrowmore Lake SPA	004052	Sheep's Head to Toe Head SPA	004156
Lough Cutra SPA	004056	River Nanny Estuary and Shore SPA	004158

Special Protection Area (SPA)	Site Code	Special Protection Area (SPA)	Site Code
Lough Derg (Donegal) SPA	004057	Slyne Head To Ardmore Point Islands SPA	004159
Lough Derg (Shannon) SPA	004058	Slieve Bloom Mountains SPA	004160
Lough Fern SPA	004060	Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA	004161
Lough Kinale and Derragh Lough SPA	004061	Mullaghanish to Musheramore Mountains SPA	004162
Lough Mask SPA	004062	Slievefelim to Silvermines Mountains SPA	004165
Poulaphouca Reservoir SPA	004063	Slieve Beagh SPA	004167
Lough Ree SPA	004064	Slieve Aughty Mountains SPA	004168
Lough Sheelin SPA	004065	Cruagh Island SPA	004170
The Bull and The Cow Rocks SPA	004066	Dalkey Islands SPA	004172
Inishmurray SPA	004068	Deenish Island and Scariff Island SPA	004175
Lambay Island SPA	004069	Bills Rocks SPA	004177
Stags of Broad Haven SPA	004072	Connemara Bog Complex SPA	004181
Tory Island SPA	004073	Mid-Clare Coast SPA	004182
Illanmaster SPA	004074	The Murrough SPA	004186
Lough Swilly SPA	004075	Sligo/Leitrim Uplands SPA	004187
Wexford Harbour and Slobs SPA	004076	Tralee Bay Complex SPA	004188
River Shannon and River Fergus Estuaries SPA	004077	Kerry Head SPA	004189
Carlingford Lough SPA	004078	Galley Head to Duneen Point SPA	004190
Boyne Estuary SPA	004080	Seven Heads SPA	004191
Clonakilty Bay SPA	004081	Helvick Head to Ballyquin SPA	004192
Greers Isle SPA	004082	Mid-Waterford Coast SPA	004193
Inishbofin, Inishdooey and Inishbeg SPA	004083	Horn Head to Fanad Head SPA	004194
Inishglora and Inishkeeragh SPA	004084	Cross Lough (Killadoon) SPA	004212
River Little Brosna Callows SPA	004086	Courtmacsherry Bay SPA	004219
Lough Foyle SPA	004087	Corofin Wetlands SPA	004220
Rahasane Turlough SPA	004089	Illaunnanoon SPA	004221
Sheskinmore Lough SPA	004090	Mullet Peninsula SPA	004227
Stabannan-Braganstown SPA	004091	Lough Conn and Lough Cullin SPA	004228
Tacumshin Lake SPA	004092	West Donegal Islands SPA	004230
Termoncarragh Lake and Annagh Machair SPA	004093	Inishbofin, Omey Island and Turbot Island SPA	004231
Blackwater Callows SPA	004094	River Boyne and River Blackwater SPA	004232
Kilcolman Bog SPA	004095	River Nore SPA	004233
Middle Shannon Callows SPA	004096	Ballintemple and Ballygilgan SPA	004234
River Suck Callows SPA	004097	Doogort Machair SPA	004235
Owenduff/Nephin Complex SPA	004098	-	-

RPS

Appendix D

Special Areas of Conservation (SACs) Northern Ireland

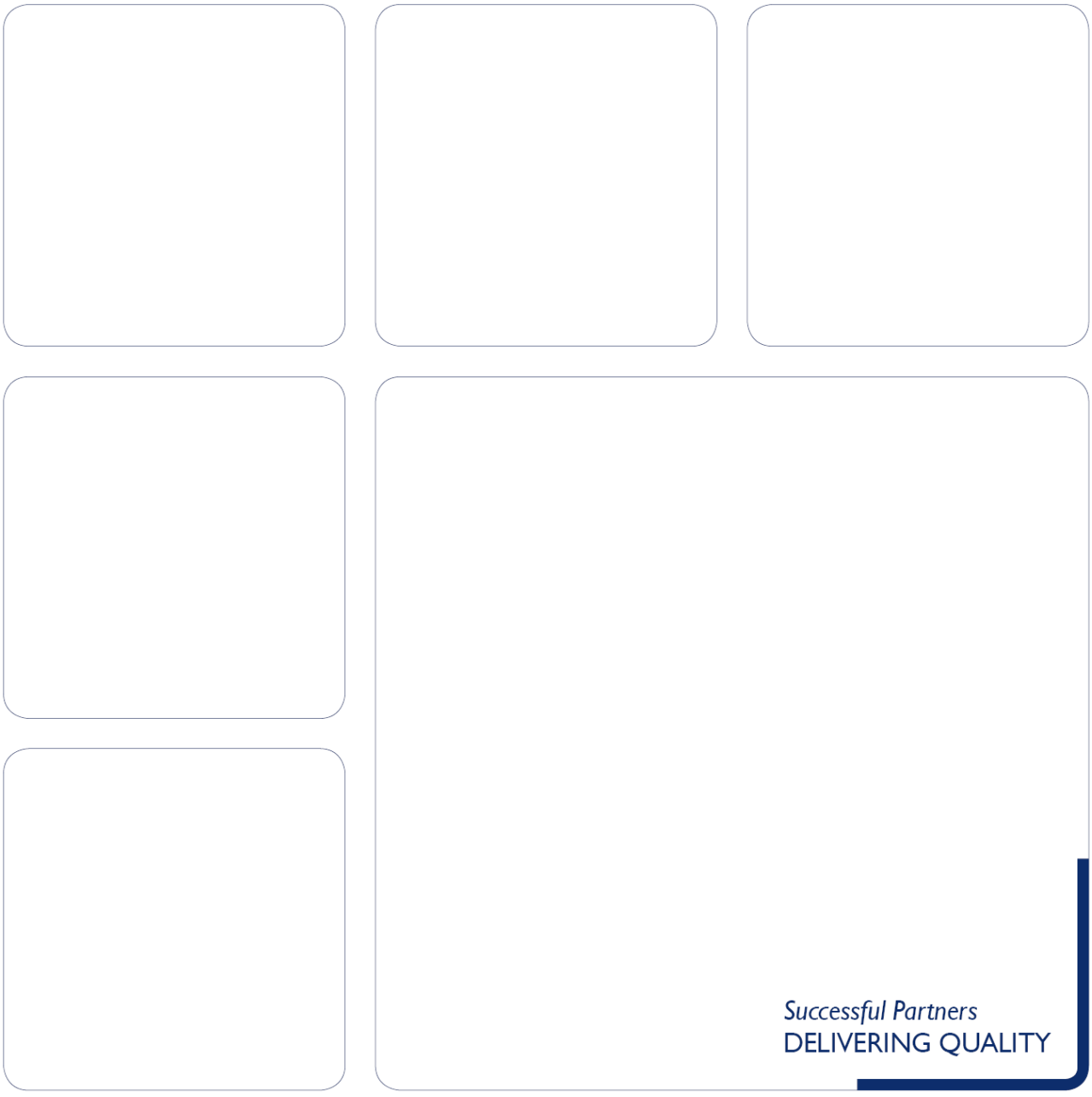


Successful Partners
DELIVERING QUALITY

Special Area of Conservation (SAC)	*Site Code*	*Special Area of Conservation (SAC)*	*Site Code*
Cuilcagh Mountain *	UK0016603	Bann Estuary	UK0030084
Pettigoe Plateau *	UK0016607	Binevenagh	UK0030089
Fairy Water Bogs	UK0016611	Cladagh (Swanlinbar) River	UK0030116
Magilligan	UK0016613	Moneygal Bog	UK0030211
Upper Lough Erne	UK0016614	Moninea Bog	UK0030212
Eastern Mournes	UK0016615	Owenkillew River	UK0030233
Monawilkin	UK0016619	Rostrevor Wood	UK0030268
Derryleckagh	UK0016620	Slieve Gullion	UK0030277
Magheraveely Marl Loughs *	UK0016621	West Fermanagh Scarplands	UK0030300
Slieve Beagh	UK0016622	River Foyle and Tributaries *	UK0030320
Largalinny	UK0030045	River Roe and Tributaries	UK0030360
Lough Melvin *	UK0030047	River Faughan and Tributaries	UK0030361
Fardrum and Roosky Turloughs	UK0030068	Skerries and Causeway	UK0030383
Ballynahone Bog	UK0016599	Rea's Wood and Farr's Bay	UK0030244
Garron Plateau	UK0016606	Turmennan	UK0030291
Teal Lough	UK0016608	Upper Ballinderry River	UK0030296
Black Bog	UK0016609	Wolf Island Bog	UK0030303
Garry Bog	UK0016610	Aughnadarragh Lough	UK0030318
Murlough	UK0016612	Ballykilbeg	UK0030319
Strangford Lough	UK0016618	Cranny Bogs	UK0030321
Rathlin Island	UK0030055	Curran Bog	UK0030322
Banagher Glen	UK0030083	Dead Island Bog	UK0030323
Breen Wood	UK0030097	Deroran Bog	UK0030324
Carn – Glenshane Pass	UK0030110	Tonnagh Beg Bog	UK0030325
Hollymount	UK0030169	Tully Bog	UK0030326
Lecale Fens	UK0030180	Red Bay	UK0030365
Main Valley Bogs	UK0030199	The Maidens	UK0030384
Montiaghs Moss	UK0030214	Pisces Reef Complex	UK0030379
North Antrim Coast	UK0030224	North Channel	UK0030399
Peatlands Park	UK0030236	-	-

Appendix E

Special Protection Areas (SPAs) Northern Ireland



Successful Partners
DELIVERING QUALITY

Special Protection Area (SPA)	Site Code
Lough Foyle	UK9020031
Pettigoe Plateau	UK9020051
Upper Lough Erne	UK9020071
Slieve Beagh-Mullaghfad-Lisnaskea	UK9020302
Carlingford Lough	UK9020161
Belfast Lough	UK9020101
Larne Lough	UK9020042
Strangford Lough	UK9020111
Rathlin Island	UK9020011
Killough Bay	UK9020221
Outer Ards	UK9020271
Belfast Lough Open Water	UK9020290
Sheep Island	UK9020021
Antrim Hills	UK9020301
Copeland Islands	UK9020291
Lough Neagh and Lough Beg	UK9020091
East Coast (Marine)	UK9020320
Carlingford Lough (proposed marine extension)	UK9020161

Appendix F

Screening for Appropriate Assessment

RPS

Draft River Basin Management Plan - Ireland

Screening for Appropriate Assessment

rpsgroup.com/ireland

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1 INTRODUCTION

The Department of Housing, Planning, Community and Local Government (DHPCLG) is currently preparing a Draft River Basin Management Plan (RBMP), hereafter referred to as the Draft RBMP. This is a requirement under Article 13 of *Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy*, better known as the Water Framework Directive (WFD). The first cycle RBMP covered the period from 2009 to 2015. Due to some delays in developing the second cycle, the plan which is subject to this Screening for Appropriate Assessment, will cover the period from 2017 – 2021. A third plan will subsequently be required to cover the period 2022 – 2027. The second cycle Draft RBMP sets out the framework for ensuring the water environment of the Republic of Ireland is protected and improved, in line with the objectives of the WFD.

This report comprises information in support of a screening for Appropriate Assessment (AA) of the Draft RBMP in line with the requirements of Article 6(3) of the EU Habitats Directive (Directive 92/43/EEC) on the Conservation of Natural Habitats and of Wild Fauna and Flora as transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations, S.I. No. 477 of 2011 (as amended, S.I. No. 355 of 2015).

Appropriate Assessment is a process for undertaking a comprehensive ecological impact assessment of a plan or project, examining its implications, on its own or in-combination with other plans and projects, on one or more European Sites in view of the sites' conservation objectives, as referred to in Article 6(3) of the EU Habitats Directive.

1.1 LEGISLATIVE CONTEXT FOR APPROPRIATE ASSESSMENT

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, better known as the "Habitats Directive" provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as the Natura 2000 network. These are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/ECC) as codified by Directive 2009/147/EC.

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect European Sites (Annex 1.1). Article 6(3) establishes the requirement for AA:

> *Any plan or project not directly connected with or necessary to the management of the [European] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In 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.*

Article 6(4) states:

> *If, in spite of a negative assessment of the implications for the [European] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.*

The Habitats Directive has been transposed into Irish law by the Planning and Development Act 2000 (as amended) and the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended). In the context of the Draft RBMP, the governing legislation is principally Regulation 27 of the Birds and Natural Habitats Regulations 2011 which sets out the duties of public authorities relating to nature conservation; Part 5, Regulation 42 which addresses screening for AA and AA of implications for European sites, and Regulation 61 retention of records including the conclusions of any screening for AA and reasons therefore, and the conclusions of any AA and the reasons therefore. If screening determines likelihood for significant effects on a European Site, then full AA must be carried out for the plan, including the compilation of a Natura Impact Statement (NIS) to inform the decision making.

1.2 PURPOSE OF AA SCREENING

The purpose of the screening for AA is *to assess, in view of the best scientific knowledge and in view of the conservation objectives of the sites, if that plan or project, individually or in combination with other plans or projects is likely to have a significant effect on the site.*

Screening is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3):

- Whether a plan or project is directly connected to or necessary for the management of the site, and
- Whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a European Site in view of its conservation objectives.

It is the responsibility of the public authority to carry out AA screening and record their AA screening determination.

1.3 OVERLAP WITH THE SEA OF THE DRAFT RBMP

An SEA is being carried out concurrently with the AA process. The purpose of the SEA is to evaluate at an early stage, the range of environmental consequences that may occur as a result of implementing the Draft RBMP and to give interested parties an opportunity to comment upon the perceived or actual environmental impacts of the proposal. There is a degree of overlap between the requirements of both the SEA and AA and in accordance with best practice, an integrated process of sharing gathered data, such as that potentially affecting the integrity (threats and sensitivities) of European Sites has been carried out. These processes together have informed and shaped the development of the Draft RBMP.

It is also noted that there are issues relevant to the Habitats Directive that are not strictly related to AA. These include Article 10 and 12 of the directive. In these cases, the issues have been brought forward to the biodiversity, flora and fauna section of the SEA and have been addressed in that context as part of the wider environmental assessments informing the Draft RBMP.

1.4 CONSULTATION

From the outset, consultation is a mandatory requirement in the SEA process and responses often have specific guidance recognising the AA process. Statutory consultation was undertaken in September 2016 in relation to SEA Scoping for the Draft RBMP, and a scoping letter was issued to the Development Applications Unit of the Department of Arts, Heritage, Regional, Rural and Gaeltact Affairs (DAHRRGA)(Reference MDR1237 Lt0003).

A response letter was received from DAHRRGA on 12th October 2016, and was reviewed during the preparation of this screening report (**Appendix A**). Importantly the correspondence states that:

p.4 "*While the WFD's objectives of achieving good status nationally, and of preventing deterioration of high status water bodies, are welcomed, and will be beneficial for European sites and biodiversity in general, they do not necessarily cover or deliver the conservation objectives for European sites, particularly where an Annex I habitat or Annex II species requires higher than good status, or the conservation objective is to restore favourable conservation condition. This arises in the case of SACs where the annex II species, Freshwater Pearl Mussel (Margaritifera margaritifera), is a qualifying interest, but may also arise in the case of Annex I lake habitats in certain sites, or where there are specific needs that are not covered by the methods used by the EPA and local authorities*."

Also:

p.5 "*When an appropriate assessment is carried out by a public authority (or competent authority under planning legislation), it is required to take account of the (final) NIS, and should also address the content of submissions made where issues or concerns are raised regarding the likely effects on European sites. Any subsequent changes to a plan should also be assessed. Case law of the Court of Justice of the European Union (e.g. case C-258/11) has established that an appropriate assessment cannot have lacunae, and must contain* ***complete, precise and definitive findings*** [emphasis added] *and conclusions with regard to the implications of a project for the conservation objectives and integrity of a European site or sites. The decision-making authority has obligations to address scientific uncertainties or discrepancies, including matters raised by other parties, particularly in relation to the implications for European sites and their conservation objectives in the appropriate assessment (e.g. judgement of Justices Barton (Irish High Court, January 2016) in the case of Balz and others versus An Bord Pleanála); the final determinations should demonstrate how the differing scientific opinions were resolved, noting the standards of the appropriate assessment as outlined above*".

2 OVERVIEW OF THE DRAFT RBMP

2.1 WATER FRAMEWORK DIRECTIVE

The WFD sets a framework for the comprehensive management of water resources in the European Community, within a common approach and with common objectives, principles and basic measures. It addresses inland surface waters (rivers and lakes), estuarine (transitional) and coastal waters and groundwater. It also addresses artificial water bodies (AWBs) e.g. canals, and Heavily Modified Water Bodies (HMWBs, e.g. a transitional water body with a significant port structure). The fundamental objective of the WFD aims at maintaining "high status" of waters where it exists, preventing any deterioration in the existing status of waters and achieving at least Good Ecological Status (GES) in relation to all waters by 2015. For AWBs and HMWBs the target is Good Ecological Potential (GEP). AWBs are defined in Article 1 of the WFD as "*a body of water created by human activity*" and are recognised for their artificial nature and specific monitoring requirements to ensure their continued beneficial uses for navigation, recreation, environmental and amenity value).

Member States will have to ensure that a coordinated approach is adopted for the achievement of the objectives of the WFD through the implementation of programmes of measures (POMs) for this purpose. The objectives of the WFD are:

- to protect and enhance the status of aquatic ecosystems (and terrestrial ecosystems and wetlands directly dependent on aquatic ecosystems);
- to promote sustainable water use based on long-term protection of available water resources;
- to provide for sufficient supply of good quality surface water and groundwater as needed for sustainable, balanced and equitable water use;
- to provide for enhanced protection and improvement of the aquatic environment by reducing / phasing out of discharges, emissions and losses of priority substances;
- to contribute to mitigating the effects of floods and droughts; and
- to establish a register of 'protected areas' e.g. areas designated for protection of habitats or species.

The WFD sets common EU wide objectives for water. It also sets out a comprehensive timetable by which the various actions required by the Directive must be met.

The WFD is a cyclical Directive in terms of its planning cycles. The first cycle RBMP covered the period 2009-2015. Due to some delays in developing this second cycle, the 2nd plan will cover the period the period 2017-2021. A third cycle plan will be required to cover the period 2022-27 (Figure 2.1).

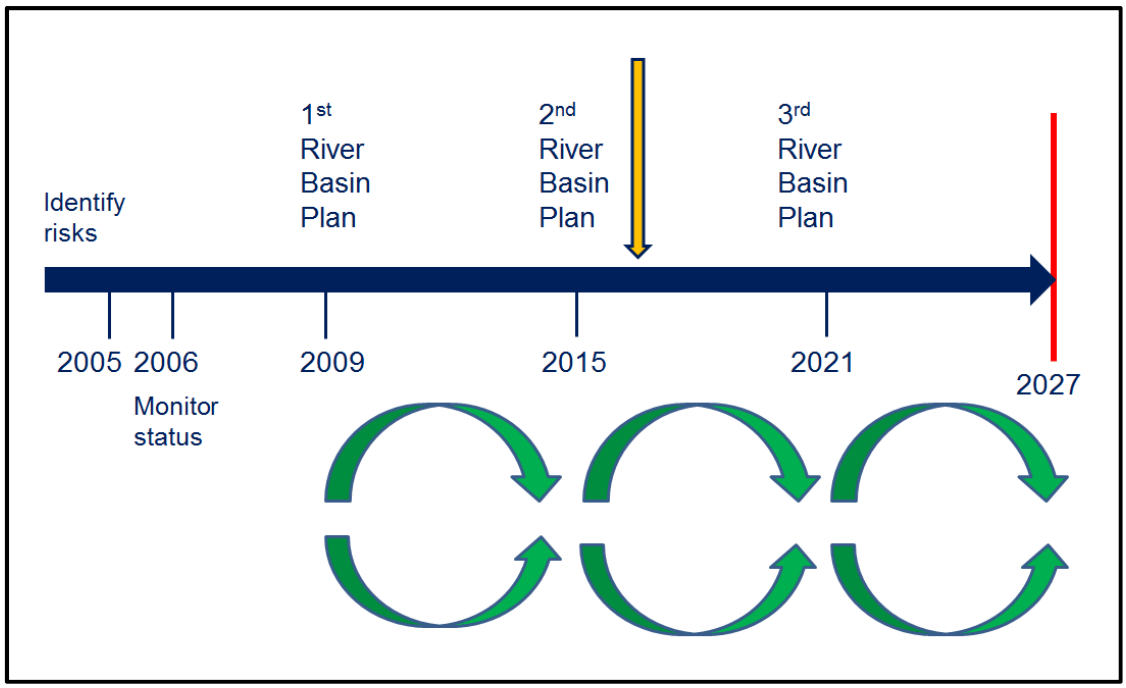


Figure 2.1 Water Framework Planning Cycles

2.1.1 Environmental Objectives

Environmental objectives are set for each surface and ground water body in accordance with Article 4 of the WFD. The European Communities Environmental Objectives (Surface Waters) Regulations (S.I. No. 272 of 2009) (as amended) and the European Communities Environmental Objectives (Groundwater) Regulations (S.I. No 9 of 2010) establish the legal basis and environmental standards for Irish waters and were a significant advancement in water quality protection in Ireland.

The WFD aims are specified in Article 1:

- Prevent further deterioration and protect and enhance the status of aquatic ecosystems and associated wetlands
- Promote the sustainable consumption of water
- Reduce pollution of waters from priority substances and phasing out of priority hazardous substances
- Prevent the deterioration in the status and to progressively reduce pollution of groundwater
- Contribute to mitigating the effects of floods and droughts

The WFD established four core environmental objectives to be achieved for *surface waters*:

- Prevent deterioration
- Protect, enhance and restore good status by 2015
- Protect and enhance artificial and heavily modified water bodies (aim to achieve Good Ecological Potential and good surface water chemical status)
- Progressively reducing pollution from priority substances and ceasing or phasing out emissions, discharges and losses of priority hazardous substances

For *groundwaters:*

- Prevent or limit the input of pollutants into groundwater
- Prevent the deterioration of the status of all bodies of groundwater
- Protect, enhance and restore all bodies of groundwater by 2015
- Reverse any significant and sustained upward trends

For *Protected Areas*:

- Achieve compliance with any standards and objectives by 2015 (where more than one of the objective relates to a given body of water, the most stringent shall apply.)

WFD additional objectives (Article 7):

- To prevent deterioration in the water quality in the protected area in order to reduce the level of purification treatment required
- The water treatment regime will meet the requirements of Directive 80/778/EEC as amended by Directive 98/83/EC

Alternative objectives may take two forms: *extended deadlines* or *less stringent objectives*.

Extended deadlines, in excess of the 2015 objective, are set out in Article 4(4) of the WFD, and are based on the "*phased achievement of objectives*" approach, which must be documented and justified. Crucially, *no deterioration* in the status of the water body which has been assigned an extended deadline is permitted. Water bodies currently not meeting their environmental objectives, are now in a position where extended deadlines are required and an associated scientific justification. Scientific justification can be on the basis of technical feasibility, disproportionate cost or natural conditions (requiring additional time for the improvement of waters). Not more than two extensions can be availed of i.e. up to 2021 or 2027, except where it can be shown that natural conditions determine a longer timeframe is necessary for recovery (Article 4(c)).

Less stringent environmental objectives can also be applied for specific bodies of water when they are so affected by human activity, as determined in accordance with Article 5(1), or their natural condition is such that the achievement of these objectives would be infeasible or disproportionately expensive. In this case, a set of conditions must be met such as environmental and socio-economic needs served by the human activity which cannot be achieved by other means, no further deterioration in status of the affected water body etc.

2.2 2ND CYCLE RBMP

The objective of the WFD, and this process of river basin management planning, is to ensure required water quality improvements are achieved through a catchment based approach to water management, a co-ordinated approach from stakeholders across the water sector, and public engagement and participation in the development and implementation of plans.

The first cycle of River Basin Management Planning in the Republic of Ireland, developed plans and associated programmes of measures on the basis of 4 River Basin Districts (RBDs) within the Republic of Ireland, and a further 3 international RBDs (which cut across Northern Ireland and the

Republic of Ireland). These plans set ambitious targets that envisaged the majority of water bodies would achieve good status by 2021.

The second cycle RBMP aims to build on the positive aspects of the first cycle, and also learn from those aspects which did not progress as well as expected. Three key learnings have emerged from the first cycle RBMPs, including through the public consultation processes undertaken to date.

Firstly, the structure of multiple River Basin Districts did not prove effective, either in terms of efficiency of developing the plans, or in terms of implementation of those plans. A single River Basin structure is deemed more suitable in terms of the efficient use of resources and ensuring that the similar challenges faced across the country are addressed in a coherent way.

Secondly, governance and delivery structures in place for the first cycle were not as effective as expected. Due in part to the number of RBDs the delivery arrangements were overly complex. Furthermore, no single body had overall responsibility for delivery of the programme of measures. The importance of local delivery for many measures was not well understood in developing the first cycle plans, or more importantly, in considering implementation of the plans. These issues have been taken into account in terms of the structures proposed to deliver the 2nd cycle Draft RBMP, and in developing implementation plans.

Thirdly, the targets set in the first cycle were not realistic. These targets were set at a time when the concept of River Basin Management Planning was new to Member States, and in an Irish context, before the impact of the economic downturn on the capacity to deliver such targets was clear. However, there was also an overarching issue that the level of ambition was not necessarily grounded on a sufficiently advanced evidence base. A central aspect of work to develop the second cycle RBMP was to ensure that the goals of the plan are evidence based and achievable.

To develop this improved evidence base, the EPA has been carrying out catchment characterisation work. In line with the WFD requirements, this catchment characterisation work identified the status of water bodies, assessed the risk of not achieving the requirements of the directive for these waterbodies, and identified the significant pressures on at risk water bodies. The process also identified protected areas, compliance with the requirements for protected areas, and the issues to be addressed for protected areas which are not currently compliant with their requirements.

The improved evidence base emerging from this EPA characterisation work offers both a better picture of what the current situation is with regard to the water environment, and also allows for an evidence based assessment of what improvements are achievable at both national and local level in the period 2017-2020 and beyond. Where sufficient evidence is not available with regard to specific water bodies or potential measures, the evidence base needs to be further developed over the course of this plan.

In line with these three key learnings, there have been three guiding principles in developing the draft RBMP. Firstly, the development and delivery of the Draft RBMP requires effective and efficient national, regional and local structures – and integration of these structures. Secondly, the targets set in this plan must be based on sound evidence and be ambitious but achievable. Thirdly, continued efforts to ensure effective national measures are in place to address pressures on the water environment, but, where such measures are not sufficient, must also support delivery of “the right measures in the right place”.

2.3 THE IRISH RIVER BASIN DISTRICT

For this second cycle, a single national River Basin District has been defined the non-transboundary regions within the Republic of Ireland. There will also be two international RBDs on the island of Ireland. The Irish River Basin District covers an area of 70,273km^2.

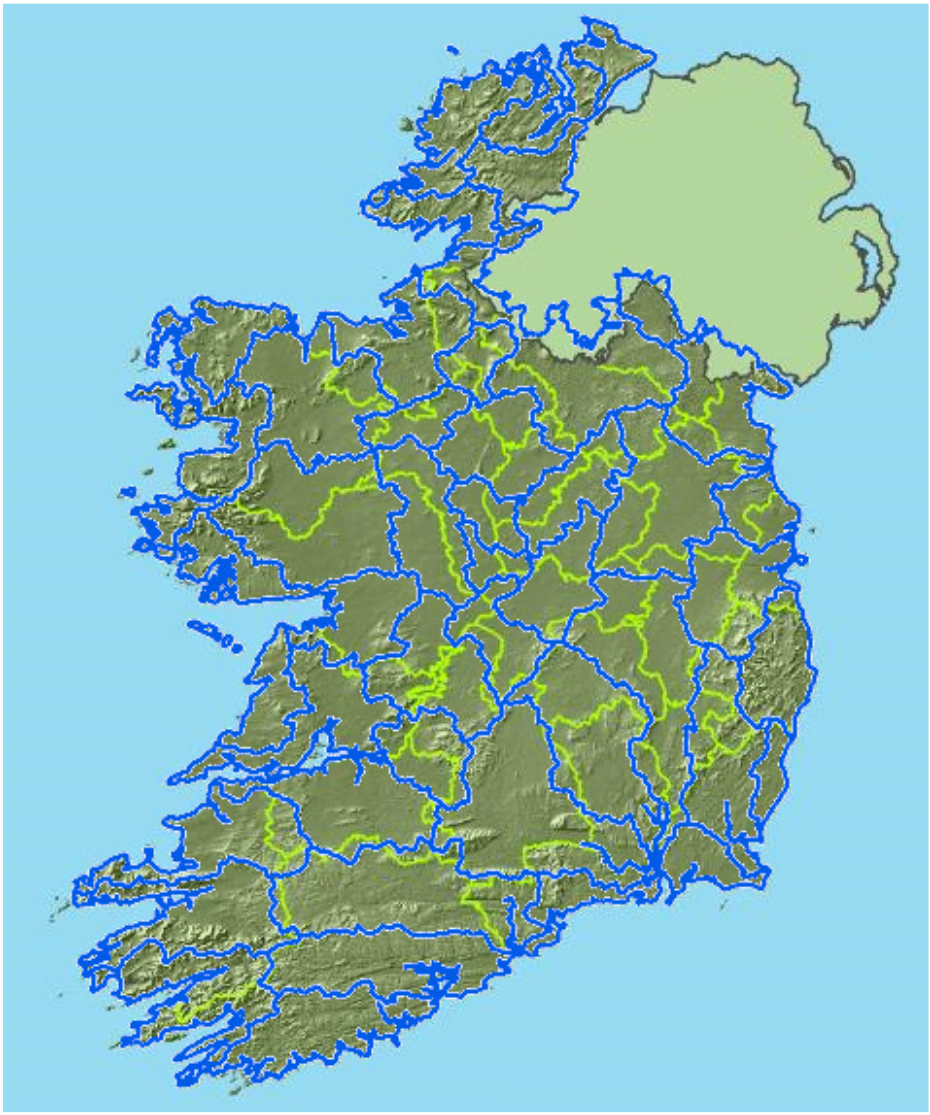


Figure 2.2 The Irish River Basin District

2.4 DEVELOPING THE DRAFT RBMP

A three tier structure across relevant authorities was adopted. At Tier 1, the Minister for the Housing, Planning, Community and Local Government has responsibility for policy, necessary legislation and resourcing the plan. Tier 2 is led by the Environmental Protection Agency, which is responsible for the characterisation process and assisting and advising the Minister. Tier 3, consists of the co-ordinating local authorities, who have responsibility for implementation of measures on the ground, and the local knowledge required for successful implementation of many potential measures.

This tiered structure for development of the Draft RBMP was co-ordinated through both the statutory Water Policy Advisory Committee and a Programme of Measures Group. The former provided high level policy direction, whilst the latter considered the detailed technical, scientific and policy information to arrive at a programme of measures for the second cycle. Furthermore, extensive public consultation has been undertaken with regard to the approach to developing this draft RBMP.

The methodology to arrive at the Draft RBMP is set out in the bullets below:

- Assessing the outcomes of the first planning cycle, including public consultation on significant water management issues in Ireland;
- Characterising the River Basin District, including an assessment of the current condition of Irish waters and identification of water bodies at risk of not meeting requirements of the WFD;
- Identifying and summarising the significant pressures and impacts of human activities;
- Specifically identifying, mapping and characterising protected areas;
- Identifying and mapping monitoring network;
- Identifying the environmental objectives and establishing priorities;
- Economic analysis of water use;
- Identifying and summarising a programme of measures based on the characterisation and pressures identified;
- Setting out the planned implementation structures for the plan;
- Setting out what is expected the plan may achieve;
- Setting out plans for ongoing monitoring and implementation reporting, and
- Carrying out Strategic Environmental Assessment and Screening for Appropriate Assessment and Appropriate Assessment (if required) of the plan.

2.4.1 Prioritisation

Whilst the objectives of the WFD clearly set out the end goals, the challenges presented in achieving these objectives are very significant. Therefore, a key purpose of the Draft RBMP is to set out priorities and ensure that implementation of the plan is guided by this prioritisation. This process of prioritisation was informed by the scientific characterisation, public consultation processes and a broad consideration of resources and resource constraints. The prioritisation of actions towards the objectives must maximise the value of constrained resources, ensure cost effectiveness of measures, and ensure that delivery of this Plan is most effective and efficient over the short, medium and long term.

The following prioritisation was decided upon for this cycle of the River Basin Management Plan:

- Ensure full implementation of, and compliance with, relevant EU legislation (Basic Measures)
- Prevent the deterioration of our water bodies
- Specifically target our high status waters for protection and, where feasible, improve the number of water bodies at high status
- Ensure we meet the specific objectives required for our ‘protected areas’
- Target actions to achieve improvements for those water bodies which are close to status boundaries

- Implement targeted pilot schemes in sub-catchments with a variety of pressures and at risk waterbodies to build our knowledge for wider implementation
- Progress remediation of barriers which negatively impact the ecological status of water bodies.

2.5 PROGRAMME OF MEASURES

The high level pressures impacting on waterbodies were classified into 14 categories (Table 2.1) in the Draft RBMP. The measures aimed at addressing these pressures include the 11 existing basic measures, or Directives, as specified in Annex VI of the WFD and further additional measures which are still evolving. Sufficient details on the main programmes that will achieve progress across the river basin district, and how more local, catchment and water body specific measures will be developed and implemented are not available at this stage in the process.

Table 2.1 Measures to protect and improve water bodies

	Pressure	Category of Measure
1	Agriculture	Address pressures from rural diffuse & point sources
2	Domestic Waste Water Systems	
3	Urban Waste Water	Address pressures from urban waste water & urban run off
4	Urban Run Off	
5	Forestry	Address pressures from forestry, peatlands & extractive industry
6	Extractive Industry	
7	Invasive Species	Protect water bodies from invasive species
8	Physical Modification	Improve physical condition of water environment
9	Abstractions/Diversion	Address abstraction pressures
10	Industry	Other measures
11	Waste	Other measures
12	Historically Polluted Sites	Other measures
13	Water Treatment	Other measures
14	Others	Other measures

3 ASSESSMENT METHODOLOGY

3.1 GUIDANCE DOCUMENTS ON APPROPRIATE ASSESSMENT

The AA requirements of Article 6 of the Habitats Directive 92/43/EEC (European Communities 2001) follow a sequential approach as outlined in the following legislation and guidance documents/ Departmental Circulars, namely:

European and National Legislation:

- Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (also known as the 'Habitats Directive');
- Council Directive 2009/147/EC on the conservation of wild birds, codified version, (also known as the 'Birds Directive');
- European Communities (Birds and Natural Habitats) Regulations 2011 (as amended); and
- Planning and Development Act 2000-2015.

Guidance:

- DEHLG (2009) Appropriate Assessment of Plans and Projects in Ireland: Guidance for Local Authorities (revision 10/02/10);
- European Commission (2000) Managing Natura 2000 sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC[1];
- European Commission (2002) 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;
- European Commission (2007) Guidance Document on Article 6(4) of the 'Habitats Directive' 92/43/EEC. Clarification of the concepts of: Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission; and
- DAHG (2012) Marine Natura Impacts Statements in Irish Special Areas of Conservation. A working Document.

Departmental/NPWS Circulars:

- Circular NPWS 1/10 & PSSP 2/10: Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities;
- Circular Letter SEA 1/08 & NPWS 1/08: Appropriate Assessment of Land Use Plans;
- Circular L8/08: Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments;
- Circular Letter NPWS 2/07: Guidance on Compliance with Regulation 23 of the Habitats Directive; and

[1] The Commission has notified its intent to revise this guidance and a draft revised document was published in April 2015. It would appear that this has not been finalised to date, with no revised guidance document available on the Commissions website.

- Circular Letter PD 2/07 and NPWS 1/07: Compliance Conditions in respect of Developments requiring (1) Environmental Impact Assessment (EIA); or (2) having potential impacts on Natura 2000 sites.

3.2 GUIDING PRINCIPLES AND CASE LAW

Over time legal interpretation has been sought on the practical application of the legislation concerning AA as some terminology has been found to be unclear. European and National case law has clarified a number of issues and some aspects of the published guidance documents have been superseded by case law. Case law has been considered in the preparation of the screening of the Draft RBMP.

3.3 STAGES OF APPROPRIATE ASSESSMENT

The AA process progresses through four stages. If at any stage in the process it is determined that there will be no adverse effect on the integrity of a European Site in view of the sites conservation objectives, the process is effectively completed. The four stages are as follows:

- Stage 1 – Screening of the proposed plan or project for AA;
- Stage 2 – An AA of the proposed plan or project;
- Stage 3 – Assessment of alternative solutions; and
- Stage 4 – Imperative Reasons of Overriding Public Interest (IROPI)/ Derogation.

Stage 1: Screening for AA

The aim of screening is to assess firstly if the plan or project is directly connected with or necessary to the management of European Site(s); or in view of best scientific knowledge, if the plan or project, individually or in combination with other plans or projects, is likely to have a significant effect on a European site. This is done by examining the proposed plan or project and the conservation objectives of any European Sites that might potentially be affected. If screening determines that there is potential for significant effects or there is uncertainty regarding the significance of effects then it will be recommended that the plan is brought forward to the next stage of the AA process.

Stage 2: Appropriate Assessment

The aim of Stage 2 of the AA process is to identify any adverse impacts that the plan or project might have on the integrity of relevant European Sites. As part of the assessment, a key consideration is 'in combination' effects with other plans or projects. Where adverse impacts are identified, mitigation measures can be proposed that would avoid, reduce or remedy any such negative impacts and the plan or project should then be amended accordingly, thereby avoiding the need to progress to Stage 3.

Stage 3: Alternative Solutions

If it is not possible during Stage 2 of the AA process to conclude that there will be no adverse effects on site integrity, Stage 3 of the process must be undertaken which is to objectively assess whether alternative solutions exist by which the objectives of the plan or project can be achieved. Explicitly,

this means alternative solutions that do not have adverse impacts on the integrity of a European Site. It should also be noted that EU guidance on this stage of the process states that, 'other assessment criteria, such as economic criteria, cannot be seen as overruling ecological criteria' (EC, 2002). In other words, if alternative solutions exist that do not have adverse impacts on European Sites; they should be adopted regardless of economic considerations. This stage of the AA process should result in the identification of the least damaging options for the plan or project.

Stage 4: Imperative Reasons of Overriding Public Interest (IROPI)

This stage of the AA process is undertaken when it has been determined that a plan or project will have adverse effects on the integrity of a European Site, but that no alternatives exist. At this stage of the AA process, it is the characteristics of the plan or project itself that will determine whether or not the competent authority can allow it to progress. This is the determination of 'over-riding public interest'.

It is important to note that in the case of European Sites that include in their qualifying features 'priority' habitats or species (Special Areas of Conservation), as defined in Annex I and II of the Habitats Directive, the demonstration of 'over-riding public interest' is not sufficient and it must be demonstrated that the plan or project is necessary for 'human health or public safety considerations'. Where plans or projects meet these criteria, they can be allowed, provided adequate compensatory measures are proposed. Stage 4 of the process defines and describes these compensation measures.

3.4 INFORMATION SOURCES CONSULTED

The following sources of information have been consulted:

- Department of Housing, Planning, Community and Local Government – online land use mapping www.myplan.ie/en/index.html;
- GeoHive online mapping http://map.geohive.ie/mapviewer.html;
- Ordnance Survey of Ireland – Online mapping and Aerial photography www.osi.ie;
- National Parks and Wildlife Service – online European Site information www.npws.ie;
- Northern Ireland Environment Agency – online European Site information https://www.doeni.gov.uk/;
- National Parks and Wildlife Service – Article 17 Status of EU protected habitats in Ireland reporting (NPWS 2013a & 2013b);
- Ireland's Article 12 submission to the EU Commission on the *Status and Trends of Bird Species (2008-2012)*;
- Environmental Protection Agency – Water Quality www.epa.ie; Envision mapping; www.catchments.ie website;
- Information on www.wfdireland.ie;
- Geological Survey of Ireland – Geology, soils and Hydrogeology www.gsi.ie;
- *Format for a Prioritised Action Framework (PAF) for Natura 2000* (DAHG, 2014) www.npws.ie/sites/default/files/general/PAF-IE-2014.pdf; and
- *Actions for Biodiversity 2011-2016*: *Irelands National Biodiversity Plan* (DAHG, 2011) and
- Information on the conservation status of birds in Ireland (Colhoun & Cummins, 2013).

4 SCREENING FOR APPROPRIATE ASSESSMENT

In line with best practice guidance the AA Screening involves the following:

1. Description of the plan;
2. Identification of relevant European Sites;
3. Assessment of likely significant effects;
4. Screening statement/determination with conclusions.

4.1 DESCRIPTION OF THE PLAN

An overview of the Draft RBMP, including background and context are provided in **Chapter 2** of this document.

4.2 IDENTIFICATION OF RELEVANT EUROPEAN SITES

European Sites comprise (a) Special Areas of Conservation (SACs) that are designated under the Habitats Directive as requiring the conservation of important, rare or threatened habitats and species (other than birds) and (b) Special Protection Areas (SPAs), which are designated under the Birds Directive to conserve certain migratory or rare birds and their habitats. Collectively these sites form the Natura 2000 network. In accordance with DEHLG Guidance (2009), the AA also takes into account transboundary impacts where it is identified that the implementation of the plan has the potential to impact on European Sites in Northern Ireland.

The draft RBMP is a national plan with the objective to ensure required water quality improvements are achieved through a catchment based approach to water management, a co-ordinated approach from stakeholders across the water sector, and public engagement and participation in the development and implementation of plans. Therefore the zone of influence of the plan is considered to include all European Sites for Ireland and those hydrologically connected with Northern Ireland. At this time, location specific information is not presented in the plan to allow for any European Site to be removed from consideration. Furthermore the draft RBMP is not directly connected with or necessary to the management of any European Sites in Ireland or Northern Ireland, although its implementation is of significant benefit for water dependent habitats and species and the maintenance or improvement of their conservation status where water quality is a factor in their conservation. As such, all European Sites within Ireland (excluding 6 offshore sites) and crossing the border between Ireland and Northern Ireland (using a 15km buffer) will be considered in the first instance (**Figure 4.1** and **Table 4.1**). An inventory of all European Sites including transboundary sites are listed in **Appendices B-E.**

Table 4.1 Number of European Sites in Ireland and Northern Ireland

Ireland*	Northern Ireland
424 SACs (+ 6 offshore SAC's considerably removed from the mainland)	26
165 SPAs	5

*Data downloaded as of October 2016

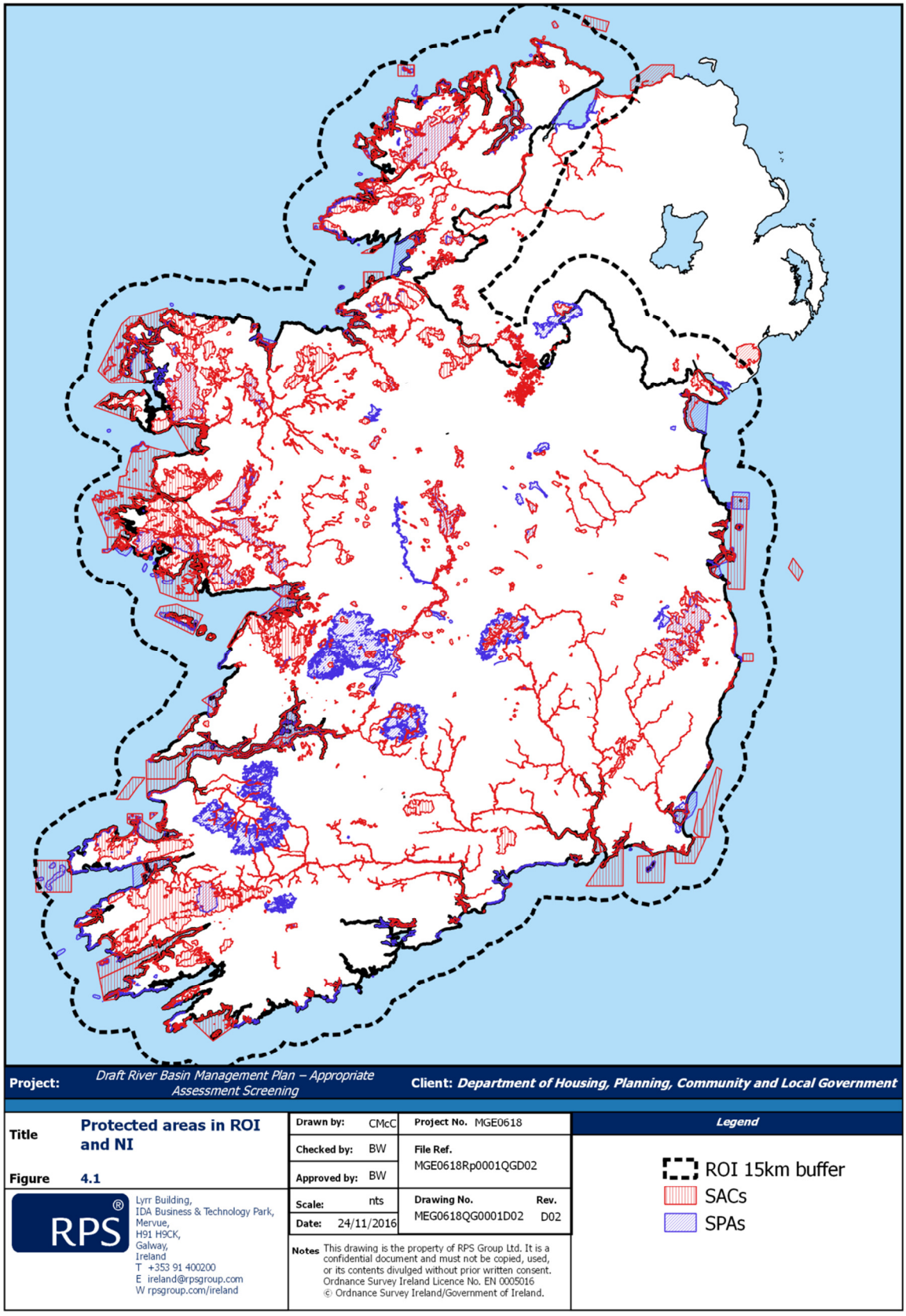


Figure 4.1 National Distribution of European Sites Including Transboundary Sites

4.3 ASSESSMENT OF LIKELY EFFECTS

4.3.1 Introduction

The main objective of the Draft RBMP is to ensure the required water quality improvements are achieved through a catchment based approach to water management, a co-ordinated approach from stakeholders across the water sector, and public engagement and participation in the development and implementation of plans. A clear environmental objective of the WFD is to achieve compliance with any standards and objectives as specified in Community legislation under which the individual protected areas have been established. Where more than one objective relates to a given water body, the most stringent will apply.

The linkages between the WFD and the Habitats and Birds Directives (BHD) have been outlined in a document published by the European Commission in 2011. The document states:

"*Any Natura 2000 site with water-dependent (ground- and/or surface water) Annex I habitat types or Annex II species under the Habitats Directive or with water-dependent bird species of Annex I or migratory bird species of the Birds Directive, and, where the presence of these species or habitats has been the reason for the designation of that protected areas, has to be considered for inclusion in the register of protected areas under WFD Article 6. These are summarised as "water-dependent Natura 2000 sites*".

"*In order to make Article 4.1(c) on protected areas operational there is a need to identify the water related requirements to achieve favourable conservation status of habitats and species dependent on water*"; the focus therefore is on those habitats and species dependent on water and on the water related requirements.

"*The objectives of the directives are closely related and special attention and coordination is needed where these directives are implemented in the same areas. The measures serving the BHD and the WFD objectives need to be included in the river basin management plans required under Article 13 and should also be included in the management plans of the Natura 2000 sites*."

The WFD does not change what Member States must achieve for the BHD, but it provides a joint framework for the implementation of measures needed by the WFD and BHD in water-dependent Natura 2000 sites. Both the WFD and BHD require the achievement of a high level target or goal.

For the WFD the aim for surface waters is to prevent deterioration in status, to achieve or maintain good ecological status (GES) and good chemical status (good ecological potential and good chemical status in artificial and heavily modified water bodies) by 2015, and to reduce pollution from priority substances and to cease or phase out emissions, discharges and losses of priority hazardous substances. For groundwaters, the objectives are to achieve good quantitative status and good chemical status in all groundwater bodies. This includes also for the protection of directly dependent surface water and terrestrial ecosystems.

The aim of the Habitats Directive is to maintain or restore at Favourable Conservation Status (FCS) the specified habitats and species protected under the Directive. Unlike GES for the WFD there is no time specified by which FCS is to be achieved. The defined habitats and species of 'Community

interest' are further sub-divided by protection measures that apply to them under Annexes of the HD. These are:

Annex I: Specified habitats for which Special Areas of Conservation are to be identified.
Annex II: Specified species for which Special Areas of Conservation are to be identified.
Annex IV: Species in need of strict protection.
Annex V: Species for which exploitation may be subject to management measures.

Of key significance is the 'integrity' of a site which involves its ecological functions: the coherence of the site's ecological structure and function, across its whole area or habitats, complex of habitats and/or populations of species for which the site is or will be classified (UK DoE, 1994). The decision as to whether a site is adversely affected should focus on and be limited to the site's conservation objectives (EC, 2000). Conservation objectives have been prepared for many SACs and SPAs in Ireland and further are in preparation.

In 2013, National Parks and Wildlife Service produced their report on the Status of EU protected habitats and species in Ireland (NPWS, 2013[2]). Ireland has protected 430 candidate Special Areas of Conservation (SACs) (NPWS, SAC datasheets, http://www.npws.ie/protected-sites/sac, accessed 21/07/2016). A small number of additional SACs are likely to be proposed in the near future. The final formal designation of SACs is commencing (NPWS, 2015). 358 (83%) SACs contain at least one water dependant feature. These SACs intersect with 1770 river water bodies or 55.4%; 153 (76.5%) of transitional water bodies, and 88 (71%) of coastal water bodies.

Fifty-eight habitats and 61 species are covered by the 2013 NPWS Status report of which 44 are water dependent habitats, and 22 are water dependent species (**Appendix F**). Five water dependent habitats (11%) were deemed to be at favourable conservation status. Eleven water dependent species (50%) are at favourable conservation status.

4.3.1.1 Conservation Objectives

The overall aim of the Habitats Directive is to *maintain or restore the favourable conservation status* of habitats and species of community interest (the qualifying interest habitats and species for which a site has been designated).

Site specific conservation objectives aim to define favourable conservation condition for these habitats or species at the site level. Maintenance of favourable conservation condition of habitats and species at a site level in turn contributes to maintaining or restoring favourable conservation status of habitats and species at a national level and ultimately at the Natura 2000 Network level.

Given the number of European Sites that could potentially be impacted by the implementation of Draft RBMP (**Table 4.1** and **Appendix B - E**), it is not practical to list the Conservation Objectives of each site in the screening report, but rather these have been collated for the purposes of the assessment. Rather the generic Conservation Objectives which have been developed by NPWS, and encompass the spirit of site specific Conservation Objectives in the context of *maintain and restore* are presented:

[2] National Parks and Wildlife Service (2013). The status of EU Protected Habitats and Species in Ireland. Volumes 1-3. Unpublished Reports, National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

- To maintain or restore the favourable conservation condition of the qualifying interests i.e. Annex I habitat(s) and/or Annex II species for which the SAC has been selected;
- To maintain the bird species of special conservation interest for which the SPA has been listed at favourable conservation status.

In undertaking this screening of the Draft RBMP, consideration has been given to the potential to impact on the achievement of Conservation Objectives at this more general level in the first instance.

NPWS has published site specific conservation objectives for 109 SACs and 36 SPAs. For each relevant species listed in a Conservation Objectives report for an SAC, details are given on i) the 'attributes', such as 'population size', ii) 'measures', such as 'occurrence' or 'EPA Q-value', and iii) 'target', such as 'no reduction from baseline' or 'Q 3-4 value'. Many of the SAC site specific conservation objectives do not specify numeric Environmental Supporting Conditions, such as a Q-value or nutrient concentration requirement.

SPA related site specific conservation objectives do not have detailed water related targets, other than comments on barriers to connectivity, i.e. non-numerical type comments.

The available Environmental Supporting Conditions have been compiled for the purposes of this assessment.

4.3.2 Assessment

The potential threats from the Draft RBMP on European Sites cannot at this stage be confirmed based on the level of detail available, however they may be inferred particularly in relation to impacts to sensitive habitats e.g. those sensitive to water emissions. **Table 4.2** outlines the potential likely significant effects associated with each category of measure proposed under the Draft RBMP.

The methodology for the assessment of impacts is derived from the Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites (EC, 2002). When describing changes/activities and impacts on ecosystem structure and function, the types of impacts that are commonly presented include:

- direct and indirect effects,
- short- and long-term effects,
- construction, operational and decommissioning effects, and
- isolated, interactive and cumulative effects.

Impacts that could potentially occur through the implementation of the plan can be categorised under a number of impact categories as outlined in the EC 2002 document as follows:

- Loss/Reduction of habitat area,
- Disturbance to key species,
- Habitat or species fragmentation,
- Reduction in species density, and

- Changes in key indicators of conservation value such as decrease in water quality and quantity.

Table 4.2 Aspects of the plan with potential for significant effects

	Pressure	Category of Measure	Aspects of the plan with potential for significant effects?
1	Agriculture	Address pressures from rural diffuse & point sources	High level measures will include the Nitrates Directive, the Nitrates Action Programme, the Pesticides Regulations and the Agriculture Environmental Impact Assessment Regulations. **Potential for change in key indicators of conservation value, disturbance to key species and reduction in density if measures are not effective or do not target key species which require a higher than good status objective.**
2	Domestic Waste Water Systems		High level measures will include the existing Domestic Waste Water Treatment Regulations. **Potential for change in key indicators of conservation value, disturbance to key species and reduction in density if measures do not include SACs and SPAs as sensitive receptors.**
3	Urban Waste Water	Address pressures from urban waste water & urban run off	High level measures will include implementation of the Urban Waste Water Treatment Directive, and licensing or certification of discharges to the aquatic environment and ensuring compliance through the Irish Water - Water Services Strategic Plan and the associated Irish Water - Capital Investment Programme. Measures in addition to the above will include improved WWTP operations; drainage area plans for wastewater collection systems; review of nutrient sensitive areas and targeted investment in subthreshold WWTPs. **Where upgrades or new WWTPs or collection systems are required, there is potential for direct, indirect, construction, operational and cumulative effects on SACs and SPAs in the absence of mitigation measures.**
4	Urban Run Off		
5	Forestry	Address pressures from forestry, peatlands & extractive industry	Measures will include existing regulations and policies which the Forest Service have realigned with water policy e.g. Land types for Afforestation document; Environmental requirements for afforestation document; support for Native Woodlands and the Native Woodland Conservation Scheme.

	Pressure	Category of Measure	Aspects of the plan with potential for significant effects?
			Afforestation and replanting after felling in sensitive areas has the potential to lead to loss/reduction of habitat area, disturbance to key species, habitat fragmentation and reduction in species density in the absence of mitigation. Species highly sensitive to sedimentation in particular, will be impacted greatest.
6	Extractive Industry		Existing measures include Integrated Pollution control (IPC) licensing operated by the EPA for large scale peat extraction e.g. greater than 50 hectares. The Department of Housing, Planning, community and Local Government (DHPCLG) proposed to introduce regulations requiring the EPA to carry out EIA for all existing and new large-scale peat extraction as part of its examination of IPC licence applications. Additional measures include the Bord na Mona Sustainability 2030 Strategy and the NPWS Peatland Strategy (2015). **While the introduction of EIA for existing and new large-scale peat extraction is welcomed, this should equally be accompanied by a Screening for Appropriate Assessment and a Stage 2 Appropriate Assessment if required. Peat extraction has the potential to cause direct and indirect impacts to habitats and species, and alter water quality environmental supporting conditions such as ammonia and dissolved organic carbon, which in may lead to the disturbance of key species and reduction in species density.**
7	Invasive Species	Protect water bodies from invasive species	High level measures will include implementation of EU Regulation (1143/2014) on 'the prevention and management of the introduction and spread of invasive alien species, and the development and implementation of clear governance arrangements and coordination mechanisms across relevant public bodies. **Invasive alien species, once established are difficult to eradicate and create loss / reduction in habitat areas, disturbance to key species and reduction in species density. The measures will only address a small number of invasive species, therefore the scope will still exist for other invasive species to continue to damage to SACs and SPAs.**
8	Physical Modification	Improve physical condition of water environment	Key measures are likely to include improve hydromorphology assessment methods; collation of data and an inventory of barriers to fish migration; the existing OPW drainage maintenance programme 10 steps to environmentally friendly

	Pressure	Category of Measure	Aspects of the plan with potential for significant effects?
			maintenance and the feasibility of constructing a bypass channel around Parteen Weir. **Measures proposed are largely research and data gathering with the exception of the OPW drainage maintenance scheme 10 step protocol. The drainage maintenance programme also includes for the appropriate assessment of all planned maintenance in each year.** **If the feasibility of constructing the bypass channel around Parteen Weir is confirmed, this project will require appropriate assessment.**
9	Abstractions/Diversion	Address abstraction pressures	Measures proposed include further abstraction risk assessment by the EPA; proposals to establish a comprehensive and maintained database of water abstractions above 25m3/day and upgrading and maintenance programme for the national hydrometric network. **There is a risk of direct and indirect, and cumulative impacts from abstractions on SACs and SPAs. The abstraction risk assessment should also include risks to protected habitats and species, particularly those which are water dependent.**
10	Industry	Other measures	No details available.
11	Waste	Other measures	No details available.
12	Historically Polluted Sites	Other measures	No details available.
13	Water Treatment	Other measures	No details available.
14	Others	Other measures	No details available.

The risk of a potential likely significant effect does not necessarily mean that it will occur. In the absence of finalised controls or mitigation measures at this preliminary stage of the preparation of the Draft RBMP, it is considered that there is a likelihood of significant effects occurring on one or more European Sites.

4.3.3 In-Combination Effects

It is a requirement of Article 6(3) of the Habitats Directive that the in-combination effects with other plans or projects are considered. Consideration has been given, at this draft stage of the RBMP, to other relevant plans on a similarly strategic level that have clear potential to have a cumulative impact upon European Sites.

Given the level of detail currently available for the Draft RBMP and that potential likely significant effects cannot currently be ruled out as a result of implementation of the plan, it is considered that

the Draft RBMP has the potential to result in in-combination effects with other plans. Some of the plans considered are listed in Table 4.3.

Table 4.3 National Plans, Programmes and Policies

Level	Key Relevant Plans and Programmes
European	Seventh Environmental Action Programme
	Roadmap to a Resource Efficient Europe
	A Blueprint to Safeguard Europe's Water Resources
	European Union Biodiversity Strategy to 2020
National	National Planning framework
	Our Sustainable Future: A Framework for Sustainable Development in Ireland (2012)
	National Biodiversity Plan (2011-2016) and NPWS Conservation Plans for SACs and SPAs
	National Climate Change Strategy (2007 – 2012)
	National Hazardous Waste Management Plan 2014-2020
	National Waste Prevention Programme
	National CFRAM Programme
	Water Services Strategic Plan (complete)
	Irish Water Capital Investment Programme
	National Water Resources Plan (to be prepared)
	National Lead in Drinking Water Mitigation Plan
	National Wastewater Sludge Management Plan
	National Bioenergy Plan (in preparation)
	National Mitigation Strategy (in preparation)
	Wastewater Compliance Strategy (to be prepared)
	Water Compliance Strategy (to be prepared)
	National Spatial Strategy for Ireland 2002- 2020 People, Places and Potential
	Foodwise 2025
	Agri-vision 2015 Action Plan
	Green, Low-Carbon, Agri-environment Scheme (GLAS)
	Northern Ireland Water Resources Management Plan 2012
	Ireland's Nitrates Action Programme (NAP)
	National Peatland's Strategy (Draft)
	National Raised Bog SAC Management Plan (Draft)
	National Forestry Programme 2014-2020
	Northern Ireland Waste Management Strategy, Delivering Resource Efficiency (2013)
Regional	Regional Planning Guidelines
	Regional Spatial and Economic Strategies (in prep)
	Regional Waste Management Plans – Eastern Midlands, Southern; and Connaught Ulster.
	River Basin Management Plans (2009-2015).
	Catchment Flood Risk Management Plans (CFRMPs)
	Water Quality Management Plans
	Shellfish Pollution Reduction Programmes
	Freshwater Pearl Mussel Sub-Basin Management Plans

5 CONCLUSION

The information described herein relates to the draft RBMP. Given the strategic nature of the plan, the current stage of preparation of the plan and in light of a number of uncertainties relating to the implementation of the plan going forward, it is considered that there is potential for likely significant effects on one or more European Sites, in view of the sites conservation objectives.

For that reason, and in applying the precautionary principle, the AA process in relation to the draft RBMP must proceed to Appropriate Assessment and the preparation of a Natura Impact Statement (NIS) to fully inform the Appropriate Assessment is to be undertaken by the DHPCLG.

6 REFERENCES

Council of the European Communities (1992) *Council Directive of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC).* OJL 206/35, 1992

DoEHLG (2010). *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities* (Department of Environment, Heritage and Local Government, Rev. Feb 2010).

DEHLG (2010a) Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, Dublin.

DEHLG (2010b) Department of the Environment, Heritage and Local Government Circular NPW1/10 and PSSP 2/10 on Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, Dublin.

Environmental Protection Agency (2011). EPA ENVision Service (online environmental information portal). http://gis.epa.ie/Envision

European Commission (2007). *Guidance Document on Article 6(4) of the Habitats Directive 92/43/EEC. Clarification of the Concepts of Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence*. Opinion of the European Commission.

European Commission (2000a). *Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.* Office for Official Publications of the European Communities, Luxembourg.

European Commission (2000b) Communication from the Commission on the Precautionary Principle. Office for Official Publications of the European Communities, Luxembourg.

European Commission (2001). *Assessment of Plans and Projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC* (European Commission Environment Directorate-General)

European Parliament and European Council (2009). Directive 2009/147/EC of 30th November 2009 on the Conservation of Wild Birds (2009/147/EC). Official Journal L20/7, 2010.

EU Habitats Directive (92/43/EEC)

NPWS (2010). *Circular NPW 1/10 & PSSP 2/10 Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities.* (Department of Environment, Heritage and Local Government, 2010).

APPENDIX A

DAHRRGA SEA SCOPING RESPONSE

An Roinn Ealaíon, Oidhreachta,
Gnóthaí Réigiúnacha, Tuaithe agus Gaeltachta

Department of Arts, Heritage,
Regional, Rural and Gaeltacht Affairs

Your Ref: MDR1237 Lt0003
Our Ref: **DP00053/2016**
(Please quote in all related correspondence)

12 October 2016

RPS
West Pier Business Campus
Dun Laoghaire
Co. Dublin

Via email

FAO: Antonia Gaughran

Re: SEA scoping of the 2nd cycle of River Basin Management Planning under the Water Framework Directive

A chara

On behalf of the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs, I refer to correspondence received in connection with the above.

Outlined below are heritage-related observations/recommendations of the Department under the stated heading(s).

Nature Conservation

The Department refers to your correspondence of 12/09/16, on behalf of the Department of Housing, Planning, Community and Local Government (DHPCLG), in respect of the 2nd cycle of Ireland's River Basin Management Plan (RBMP) for 2017-2020. Reference is also made to the SEA scoping report supplied (September 2016). It is understood that 1) the plan is in preparation, 2) it has been determined that SEA is required, and 3) it has not yet been determined whether an appropriate assessment is required.

Context of submission

This submission is made in the context of this Department's role in relation to nature conservation, including as an environmental authority under SEA legislation. The observations below are offered to assist RPS and DHPCLG in meeting the obligations that arise in relation to European sites, other nature conservation sites, natural habitats and protected species, and biodiversity in general in the context of the plan and the environmental assessment(s) required. They are not exhaustive and are made without prejudice to any observations or recommendations that may be made by the Minister and this Department in the future.

The current consultation is in respect of the scope of the SEA. The opportunity has also been taken to make observations in relation to the appropriate assessment process, including the preparation of an NIS, in the event that DHPCLG's screening for appropriate assessment finds that these are necessary. While not specifically stated, it is assumed that the screening and assessment processes will be carried out under Part 5, Regulation 42 of the European Communities (Birds and Natural Habitats) Regulations, 2011[1] (hereafter the 2011 Regulations), as the plan is not a 'land use plan' for the purposes of Part XAB of the Planning and Development Act, 2000 as amended. The record-keeping obligations of a public authority, as set out in Regulation 61 of the 2011 Regulations[2], should also be noted.

Outline of plan

It is understood that the current approach is to have one RBMP, and 46 sub-plans, or catchment-level reports, which differs from the original approach. The plan and sub-plans are being developed on the basis of detailed characterisations, assessments and analyses which have involved identifying specific pressures, analysing trend data (nutrients and biological status), and generating of an overall risk status based on the potential risk of not meeting Water Framework Directive (WFD) objectives. This has allowed site specific pressures to be identified, and unique actions to be streamlined to achieve good status nationally, and prevent deterioration of high status water bodies. It is understood that, to inform the RBMP, a 'Characterisation Report' has been completed, and that a 'Programme of Measures' will be produced.

In addition to the scope and content of the plan as outlined, you will also be aware of the links between WFD and the nature directives (see below), and of the need for the plan to address the requirements of the latter.

SEA

Biodiversity, flora and fauna

SEA must assess the likely significant effects on biodiversity, flora and fauna. Biodiversity is generally defined as the variety of life on earth. An outline of key elements of biodiversity of potential relevance to the plan and plan area is given in Appendix 1, and includes sites, habitats, species of includes flora and fauna and ecological networks. There are interrelationships between biodiversity, flora and fauna and most other environmental issues or topics, including population, human health, water, soil, air, climatic factors, landscape, and possibly architectural and archaeological heritage, and the potentially significant effects of the plan on these interdependencies should be explored and assessed in the SEA.

There will be overlaps and linkages between biodiversity, flora and fauna in the SEA, and sites, habitats and species of relevance to appropriate assessment and Articles 6(3) and 6(4) of the Habitats Directive. The SEA should address all such issues in general, as well as any other relevant provisions of the Habitats Directive, including in respects of Article 6(1) (see below), 6(2) and 10 of the Habitats Directive, and associated national legislation. See also the general duties of a public authority below.

General

A plan should be developed to integrate biodiversity considerations in a positive, proactive and precautionary way, and this should be reflected in the text and content of the plan, including its aims, objectives and policies, as well as in any maps. The findings of the SEA should be assimilated into and modify the content of the plan.

[1] SI 477 of 2011, Part 5

[2] Regulation 61 requires public authorities to retain records for at least 12 years of a range of documents pertaining to screenings and appropriate assessments, including any information or advice obtained by the public authority.

The biodiversity, flora and fauna section of the environmental report should be prepared by or in conjunction with a suitably qualified ecologist(s), and other specialists as necessary, and in conjunction with the NIS to ensure full integration of biodiversity issues and concerns. The EPA's *Integrated Biodiversity Impact Assessment* best practice guidance is of relevance in this regard.

The environmental report is required to contain information on environmental protection objectives which are established at international to national level, and are relevant to the plan. For biodiversity, flora and fauna, these should integrate with the objectives and obligations of other directives such as the Habitats Directive, the Birds Directive, the Water Framework Directive (see below) and the Floods Directive, and with the Wildlife Acts, 1976-2000, and the National Biodiversity Plan.

Strategic environmental objectives should be included for all nature conservation sites (not just European sites), protected species, and ecological corridors and stepping stones.

Available guidance

Existing EU and Irish guidance on SEA and appropriate assessment should be followed in general terms when carrying out the environmental assessments, but you should also be cognisant of changes in the interpretation and application of directives and national legislation arising from case law of the Court of Justice of the European Union (CJEU), and of the Irish courts, particularly in respect of Article 6 of the Habitats Directive. There should be due regard to the terminology, stages and tests of the assessment processes as set out in relevant legislation, notably in the case of the appropriate assessment process. Where legislation updates or amends elements of existing guidance, the former should be used or applied in preference in all cases.

Available ecological information

The National Parks and Wildlife Service website (www.npws.ie) is a key source of data, information and publications on nature conservation sites and biodiversity issues of potential relevance to the plan area and the environmental assessment(s) required. This includes site boundaries, site synopses, lists of qualifying interests (SACs) and special conservation interests (SPAs), conservation objectives (European sites), features of interest (NHAs), and dates of site designation. GIS datasets are available for download for nature conservation sites[3], and for certain habitats and species arising from various sources, including national surveys. Other NPWS-held data on habitats and species may be requested by submitting a 'Data Request Form'[4].

Site-specific conservation objectives (SSCOs), and associated backing documents, are available for some European sites on the NPWS website[5]. The backing document for lakes[6] should be consulted, in particular. GIS datasets associated with site-specific conservation objectives are also available for download: http://www.npws.ie/mapsanddata/habitatspeciesdata/. For all other European sites, generic conservation objectives are available and the most up-to-date versions should be used and referenced in any relevant documents. The full scope of conservation objectives should be used, as appropriate, to guide and inform the scope of the scientific assessment and analysis in an NIS. The most recent version of the conservation objectives should be used and referenced in relevant documentation, and each of the individual conservation objectives of relevance should be addressed separately.

The Habitats Directive Article 17 reports for 2007 and 2013, which should be consulted, are available from http://www.npws.ie/article-17-reports-0. These highlight a range of water-related pressures on water-dependent Annex I habitats and annexed species, including hydrological and

[3] Special Areas of Conservation (SACs, currently known as candidate sites but fully legally protected); Special Protection Areas (SPAs); Natural Heritage Areas (NHAs); and proposed Natural Heritage Areas (pNHAs)
[4] Available from http://www.npws.ie/maps-and-data/request-data
[5] http://www.npws.ie/protectedsites/conservationmanagementplanning/conservationobjectives/
[6] http://www.npws.ie/content/publications/habitats-directive-annex-i-lake-habitats-working-interpretation-purposes-site

morphological change and sediment, organic matter and nutrient pollution. The recent national report on Article 12 of the Birds Directive, at http://www.npws.ie/news/birds-directive-article-12-reporting, should also be consulted. The national habitat surveys that have been undertaken, and their resulting reports, should be consulted, including for information regarding the definitions and evaluations that have been developed for Annex I habitat types in Ireland.

Data on ecological features and environmental factors in or near the project area will be available from various other sources including, for example:

- Other organisations, e.g. National Biodiversity Data Centre, BirdWatch Ireland, Bat Conservation Ireland, etc.
- SEA Environmental Reports, NIRs/NISs and other reports for other plans, including national plans and the draft Flood Risk Management Plans

Links between WFD and nature directives

The Department has noted limited, if any, referencing of the Birds and Habitats Directives, and of the linkages between these directives and the WFD, in the SEA scoping report. Your attention is drawn to the following European Commission paper from 2011: '*Links between the Water Framework Directive (WFD 2000/60/EC) and Nature Directives (Birds Directive 2009/147/EC and Habitats Directive 92/43/EEC) – Frequently Asked Questions*'[7], which will assist in this regard. In addition, the NERC report NERR064 (2016), '*A Narrative for Conserving Freshwater and Wetland Habitats in England*'[8], may also be of assistance.

You will be aware that the WFD has three environmental objectives, one of which is specifically for protected areas. Article 4 1. (c) of the WFD specifies that the programmes of measures in an RBMP "*shall achieve compliance with any standards and objectives* [for protected areas] *at the latest 15 years after the date of entry into force of"* the WFD. Article 6 and Annex IV (1.1. (v)) of the WFD specify that the register of protected areas shall "*include areas designated for the protection of habitats or species where the maintenance or improvement of the status of water is an important factor in their protection*", including, but not restricted to, SACs and SPAs (European Commission 2011). As measures required to implement the Birds and Habitats Directives are basic measures under Article 11 (3) and Part A of Annex VI of the WFD, the WFD programmes of measures must include water-related measures necessary to achieve the standards and objectives for the SACs and SPAs on the register (European Commission 2011).

The various requirements of Article 6 of the Habitats Directive in relation to the conservation, protection and management of (European) sites should be noted, including the obligations of Article 6(1), which refers to establishing the necessary conservation measures for sites, and measures which correspond to the ecological requirements of the Annex I habitats and Annex II species present on these sites. In addition, the plans must be compliant with the obligations of Articles 6(2) and 6(3) of the Habitats Directive which are broader and more encompassing than water-dependent species and habitats.

While the WFD's objectives of achieving good status nationally, and of prevent deterioration of high status water bodies, are welcomed, and will be beneficial for European sites and biodiversity in general, they do not necessarily cover or deliver the conservation objectives for European sites, particularly where an Annex I habitat or Annex II species requires higher than good status, or the conservation objective is to restore favourable conservation condition. This arises in the case of SACs where the Annex II species, Freshwater Pearl Mussel (*Margaritifera margaritifera*), is a qualifying interest, but may also arise in the case of Annex I lake habitats in certain sites, or where there are specific needs that are not covered by the methods used by the EPA and local authorities.

[7] http://ec.europa.eu/environment/nature/natura2000/management/docs/FAQ-WFD%20final.pdf
[8] http://publications.naturalengland.org.uk/publication/6524433387749376?category=429415

The WFD requires inclusion of water-related measures for European sites, but also allows for other nature conservation or biodiversity considerations to be addressed, e.g. for NHAs, proposed NHAs (pNHAs), water-dependent species that are protected under 2011 Regulations and the Wildlife Acts, 1976-2000 (including Flora Protection Order, 2015, species), as well as threatened water-dependent species listed on the 'Red Lists' for Ireland (https://www.npws.ie/publications/red-lists).

SEA Monitoring

The monitoring programme should be clearly set out and developed in such a manner as to ensure it will identify the effects on the environment that are likely to arise, or will arise, and to monitor the effectiveness of any mitigation on which the assessment relies. While it may be considered efficient to use monitoring programmes that are already in place and run by other authorities, it is important to establish that these are in fact designed in such a way that they will identify the effects anticipated from the particular plan in question. As such, it is important to understand the objectives, methodologies, parameters, assumptions *etc.* of any existing monitoring programme that is proposed to be used in such a way.

It is advisable to clearly set out where responsibilities for monitoring programmes lie, their frequency, their reporting/publication arrangements, as well as the procedures that will be put in place to ensure that there is a response mechanism to any unforeseen or undesirable negative effects/results and an undertaking of remedial action, if necessary.

Appropriate assessment

While the Department notes that it has not yet been determined if an appropriate assessment is required, the following advice is offered in the event that it is.

General notes on screening for appropriate assessment and the preparation of an NIS are included in Appendices 2 and 3, respectively, and should be taken into account where relevant.

When an appropriate assessment is carried out by a public authority[9] (or competent authority under planning legislation), it is required to take account of the (final) NIS, and should also address the content of submissions made where issues or concerns are raised regarding the likely effects on European sites. Any subsequent changes to a plan should also be assessed. Case law of the Court of Justice of the European Union (e.g. case C-258/11) has established that an appropriate assessment cannot have lacunae, and must contain complete, precise and definitive findings and conclusions with regard to the implications of a project for the conservation objectives and integrity of a European site or sites. The decision-making authority has obligations to address scientific uncertainties or discrepancies, including matters raised by other parties, particularly in relation to the implications for European sites and their conservation objectives in the appropriate assessment (e.g. judgment of Justice Barton (Irish High Court, January 2016) in the case of Balz and others versus An Bord Pleanála); the final determinations should demonstrate how the differing scientific opinions were resolved, noting the standards of the appropriate assessment as outlined above.

Public authorities and agents/consultants acting on their behalf are advised to have regard to the following Guidance.

- Department of Environment, Heritage and Local Government. 2010. *Appropriate assessment of plans and projects in Ireland: Guidance for planning authorities*. Available on www.npws.ie.
- European Commission, 2011. Wind energy developments and Natura 2000.
- European Commission, 2011. The Implementation of the Birds and Habitats Directives in estuaries and coastal zones with particular attention to port development and dredging.

[9] As defined in Part 1 of the European Communities (Birds and Natural Habitats) Regulations, 2011, and including DHPCLG, the EPA and local authorities

- European Commission, 2000. *Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*.
- European Commission, 2001. Methodological guidance on the provisions of Article 6 (3) and (4) of the Habitats Directive 92/43/EEC.

More guidance documents from the European Commission may become available at: http://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm

It is also advisable to take account of any European or national jurisprudence that supersedes any guidance within these documents. Information relating to every case brought before the European Court of Justice and the Court of First Instance since 1953 can be found on the following webpage (access to the case-law by case number): http://curia.europa.eu/fr/content/juris/index.htm. The following publications also provide useful information on relevant cases:

- European Commission, 2006. *Nature and Biodiversity Cases: Ruling of the European Court of Justice;*
- Ecosystems Ltd, 2014. *Article 6 of the Habitats Directive: Rulings of the European Court of* Justice.

Both available at
http://ec.europa.eu/environment/nature/legislation/caselaw/index_en.htm as of July 2016.

Selected examples of Jurisprudence concerning Article 6 of the Habitats Directive:

- European Court of Justice Ruling C-241/08 concerning the term "*not directly connected with or necessary for the management of the site*".

Procedural Obligations

- Balz et al v An Bord Pleanala (Judicial Review, Ireland 2016)
- Kelly v An Bord Pleanala (Judicial Review, Ireland, 2014)
- European Court of Justice (Case C-259/11) Sweetman v An Bord Pleanala (2013)

Article 6 (3) Mitigation or Article 6 (4) Compensation

- European Court of Justice (Case C-521/12) Briels (2014).

General duties of a public authority

Your attention is drawn to Regulation 27 of the 2011 Regulations as this places particular duties on all public authorities in relation to European sites. Among other things, this includes a duty to exercise all functions, including but not only consent functions, in compliance with, and so as to secure compliance with the requirements of the Habitats and Birds Directives and the 2011 Regulations. Public authorities are obliged, when exercising their functions, to take appropriate steps to avoid in European sites the deterioration of natural habitats and the habitats of species, as well as disturbance of species for which a site has been designated insofar as this disturbance could be significant in relation to the objectives of the Habitats Directive. All public authorities are advised to incorporate such obligations into their plans and programmes, and associated assessments, as required and relevant. This could usefully include the development of systems that will monitor and ensure the compliance of "downstream" projects with these obligations, as well as any internal mechanisms that may be needed to ensure compliance.

The above observations/recommendations are based on the papers submitted to this Department on a pre-planning basis and are made without prejudice to any observations that the Minister may make in the context of any consultation arising on foot of any development application referred to the Minister, by the planning authority/ies, in her/his role as statutory consultee under the Planning and Development Act, 2000, as amended.

You are requested to send further communications to this Department's Development Applications Unit (DAU) at manager.dau@ahg.gov.ie (team monitored); if this is not possible, correspondence may alternatively be sent to:

The Manager
Development Applications Unit (DAU)
Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs
Newtown Road
Wexford
Y35 AP90

Is mise, le meas

Joanne Lyons
Development Applications Unit
Tel: 053-9117447

APPENDIX B

Special Areas of Conservation, Republic of Ireland

Special Area of Conservation (SAC)	Site Code	Special Area of Conservation (SAC)	Site Code
Killyconny Bog (Cloghbally) SAC	000006	Ballyness Bay SAC	001090
Lough Oughter And Associated Loughs SAC	000007	Coolvoy Bog SAC	001107
Ballyallia Lake SAC	000014	Dunragh Loughs/Pettigo Plateau SAC	001125
Ballycullinan Lake SAC	000016	Gweedore Bay And Islands SAC	001141
Ballyogan Lough SAC	000019	Kindrum Lough SAC	001151
Black Head-Poulsallagh Complex SAC	000020	Muckish Mountain SAC	001179
Danes Hole, Poulnalecka SAC	000030	Sheephaven SAC	001190
Dromore Woods And Loughs SAC	000032	Termon Strand SAC	001195
Inagh River Estuary SAC	000036	Keeper Hill SAC	001197
Pouladatig Cave SAC	000037	Glenasmole Valley SAC	001209
Lough Gash Turlough SAC	000051	Aughrusbeg Machair And Lake SAC	001228
Moneen Mountain SAC	000054	Courtmacsherry Estuary SAC	001230
Moyree River System SAC	000057	Carrownagappul Bog SAC	001242
Poulnagordon Cave (Quin) SAC	000064	Cregduff Lough SAC	001251
Ballymacoda (Clonpriest And Pillmore) SAC	000077	Dog's Bay SAC	001257
Glengarriff Harbour And Woodland SAC	000090	Gortnandarragh Limestone Pavement SAC	001271
Clonakilty Bay SAC	000091	Inisheer Island SAC	001275
Caha Mountains SAC	000093	Kiltiernan Turlough SAC	001285
Lough Hyne Nature Reserve And Environs SAC	000097	Omey Island Machair SAC	001309
Roaringwater Bay And Islands SAC	000101	Rusheenduff Lough SAC	001311
Sheep's Head SAC	000102	Ross Lake And Woods SAC	001312
St. Gobnet's Wood SAC	000106	Rosturra Wood SAC	001313
The Gearagh SAC	000108	Termon Lough SAC	001321
Three Castle Head To Mizen Head SAC	000109	Cloonee And Inchiquin Loughs, Uragh Wood SAC	001342
Aran Island (Donegal) Cliffs SAC	000111	Mucksna Wood SAC	001371
Ballintra SAC	000115	Ballynafagh Lake SAC	001387
Ballyarr Wood SAC	000116	Rye Water Valley/Carton SAC	001398
Croaghonagh Bog SAC	000129	Arroo Mountain SAC	001403
Donegal Bay (Murvagh) SAC	000133	Glen Bog SAC	001430
Durnesh Lough SAC	000138	Glenstal Wood SAC	001432
Fawnboy Bog/Lough Nacung SAC	000140	Clogher Head SAC	001459
Gannivegil Bog SAC	000142	Clew Bay Complex SAC	001482
Horn Head And Rinclevan SAC	000147	Doogort Machair/Lough Doo SAC	001497
Inishtrahull SAC	000154	Erris Head SAC	001501
Lough Eske And Ardnamona Wood SAC	000163	Keel Machair/Menaun Cliffs SAC	001513
Lough Nagreany Dunes SAC	000164	Lough Cahasy, Lough Baun And Roonah Lough SAC	001529
Lough Nillan Bog (Carrickatlieve) SAC	000165	Mocorha Lough SAC	001536
Magheradrumman Bog SAC	000168	Castletownshend SAC	001547
Meenaguse/Ardbane Bog SAC	000172	Urlaur Lakes SAC	001571
Meentygrannagh Bog SAC	000173	Castlesampson Esker SAC	001625
Curraghchase Woods SAC	000174	Annaghmore Lough (Roscommon) SAC	001626
Rathlin O'Birne Island SAC	000181	Four Roads Turlough SAC	001637
Sessiagh Lough SAC	000185	Bricklieve Mountains & Keishcorran SAC	001656
Slieve League SAC	000189	Knockalongy And Knockachree Cliffs SAC	001669

Special Area of Conservation (SAC)	Site Code	Special Area of Conservation (SAC)	Site Code
Slieve Tooey/Tormore Island/Loughros Beg Bay SAC	000190	Lough Arrow SAC	001673
St. John's Point SAC	000191	Streedagh Point Dunes SAC	001680
Tranarossan And Melmore Lough SAC	000194	Liskeenan Fen SAC	001683
West Of Ardara/Maas Road SAC	000197	Kilmuckridge-Tinnaberna Sandhills SAC	001741
Baldoyle Bay SAC	000199	Kilpatrick Sandhills SAC	001742
Howth Head SAC	000202	Holdenstown Bog SAC	001757
Lambay Island SAC	000204	Magherabeg Dunes SAC	001766
Malahide Estuary SAC	000205	Lough Carra/Mask Complex SAC	001774
North Dublin Bay SAC	000206	Pilgrim's Road Esker SAC	001776
Rogerstown Estuary SAC	000208	Kilroosky Lough Cluster SAC	001786
South Dublin Bay SAC	000210	White Lough, Ben Loughs And Lough Doo SAC	001810
Inishmaan Island SAC	000212	Lough Forbes Complex SAC	001818
Inishmore Island SAC	000213	Split Hills And Long Hill Esker SAC	001831
River Shannon Callows SAC	000216	Philipston Marsh SAC	001847
Coolcam Turlough SAC	000218	Galmoy Fen SAC	001858
Barroughter Bog SAC	000231	Derryclogher (Knockboy) Bog SAC	001873
Caherglassaun Turlough SAC	000238	Glanmore Bog SAC	001879
Castletaylor Complex SAC	000242	Meenaguse Scragh SAC	001880
Cloonmoylan Bog SAC	000248	Maulagowna Bog SAC	001881
Coole-Garryland Complex SAC	000252	Mullaghanish Bog SAC	001890
Croaghill Turlough SAC	000255	Unshin River SAC	001898
Derrycrag Wood Nature Reserve SAC	000261	Cloonakillina Lough SAC	001899
Galway Bay Complex SAC	000268	Glendree Bog SAC	001912
Inishbofin And Inishshark SAC	000278	Sonnagh Bog SAC	001913
Kilsallagh Bog SAC	000285	Glenade Lough SAC	001919
Kiltartan Cave (Coole) SAC	000286	Bellacorick Bog Complex SAC	001922
Levally Lough SAC	000295	East Burren Complex SAC	001926
Lisnageeragh Bog And Ballinastack Turlough SAC	000296	Mweelrea/Sheeffry/Erriff Complex SAC	001932
Lough Corrib SAC	000297	Comeragh Mountains SAC	001952
Lough Cutra SAC	000299	Croaghaun/Slievemore SAC	001955
Lough Lurgeen Bog/Glenamaddy Turlough SAC	000301	Boyne Coast And Estuary SAC	001957
Lough Rea SAC	000304	Ballyhoorisky Point To Fanad Head SAC	001975
Loughatorick South Bog SAC	000308	Lough Gill SAC	001976
Peterswell Turlough SAC	000318	Tamur Bog SAC	001992
Pollnaknockaun Wood Nature Reserve SAC	000319	Bellacragher Saltmarsh SAC	002005
Rahasane Turlough SAC	000322	Ox Mountains Bogs SAC	002006
Rosroe Bog SAC	000324	Maumturk Mountains SAC	002008
Shankill West Bog SAC	000326	Old Domestic Building (Keevagh) SAC	002010
Slyne Head Islands SAC	000328	North Inishowen Coast SAC	002012
Tully Mountain SAC	000330	The Twelve Bens/Garraun Complex SAC	002031
Akeragh, Banna and Barrow Harbour SAC	000332	Boleybrack Mountain SAC	002032
Ballinskelligs Bay And Inny Estuary SAC	000335	Connemara Bog Complex SAC	002034
Castlemaine Harbour SAC	000343	Ballyhoura Mountains SAC	002036
Old Domestic Building, Dromore	000353	Carrigeenamronety Hill SAC	002037

Special Area of Conservation (SAC)	Site Code	Special Area of Conservation (SAC)	Site Code
Wood SAC			
Kilgarvan Ice House SAC	000364	Old Domestic Building, Curraglass Wood SAC	002041
Killarney National Park, Macgillycuddy's Reeks And Caragh River Catchment SAC	000365	Cloghernagore Bog And Glenveagh National Park SAC	002047
Lough Yganavan And Lough Nambrackdarrig SAC	000370	Tralee Bay And Magharees Peninsula, West To Cloghane SAC	002070
Mount Brandon SAC	000375	Slyne Head Peninsula SAC	002074
Sheheree (Ardagh) Bog SAC	000382	Ballinafad SAC	002081
Ballynafagh Bog SAC	000391	Newhall And Edenvale Complex SAC	002091
Pollardstown Fen SAC	000396	Old Domestic Building, Askive Wood SAC	002098
Red Bog, Kildare SAC	000397	Corliskea/Trien/Cloonfelliv Bog SAC	002110
Hugginstown Fen SAC	000404	Kilkieran Bay And Islands SAC	002111
The Loughans SAC	000407	Ballyseedy Wood SAC	002112
Slieve Bloom Mountains SAC	000412	Lough Coy SAC	002117
Lough Melvin SAC	000428	Barnahallia Lough SAC	002118
Barrigone SAC	000432	Lough Nageeron SAC	002119
Tory Hill SAC	000439	Lough Bane And Lough Glass SAC	002120
Lough Ree SAC	000440	Lough Lene SAC	002121
Fortwilliam Turlough SAC	000448	Wicklow Mountains SAC	002122
Carlingford Mountain SAC	000453	Ardmore Head SAC	002123
Dundalk Bay SAC	000455	Bolingbrook Hill SAC	002124
Killala Bay/Moy Estuary SAC	000458	Anglesey Road SAC	002125
Ardkill Turlough SAC	000461	Pollagoona Bog SAC	002126
Balla Turlough SAC	000463	Murvey Machair SAC	002129
Bellacorick Iron Flush SAC	000466	Tully Lough SAC	002130
Mullet/Blacksod Bay Complex SAC	000470	Lough Nageage SAC	002135
Brackloon Woods SAC	000471	Lower River Suir SAC	002137
Broadhaven Bay SAC	000472	Mountmellick SAC	002141
Ballymaglancy Cave, Cong SAC	000474	Newport River SAC	002144
Carrowkeel Turlough SAC	000475	Lisduff Fen SAC	002147
Carrowmore Lake Complex SAC	000476	Newgrove House SAC	002157
Cloughmoyne SAC	000479	Kenmare River SAC	002158
Clyard Kettle-Holes SAC	000480	Mulroy Bay SAC	002159
Cross Lough (Killadoon) SAC	000484	Long Bank SAC	002161
Corraun Plateau SAC	000485	River Barrow And River Nore SAC	002162
Doocastle Turlough SAC	000492	Lough Golagh And Breesy Hill SAC	002164
Duvillaun Islands SAC	000495	Lower River Shannon SAC	002165
Flughany Bog SAC	000497	Blackwater River (Cork/Waterford) SAC	002170
Glenamoy Bog Complex SAC	000500	Bandon River SAC	002171
Greaghans Turlough SAC	000503	Blasket Islands SAC	002172
Kilglassan/Caheravoostia Turlough Complex SAC	000504	Blackwater River (Kerry) SAC	002173
Inishkea Islands SAC	000507	Leannan River SAC	002176
Lackan Saltmarsh And Kilcummin Head SAC	000516	Lough Dahybaun SAC	002177
Lough Gall Bog SAC	000522	Towerhill House SAC	002179
Shrule Turlough SAC	000525	Gortacarnaun Wood SAC	002180
Moore Hall (Lough Carra) SAC	000527	Drummin Wood SAC	002181
Oldhead Wood SAC	000532	Slieve Mish Mountains SAC	002185
Owenduff/Nephin Complex SAC	000534	Drongawn Lough SAC	002187

Special Area of Conservation (SAC)	Site Code	Special Area of Conservation (SAC)	Site Code
Skealoghan Turlough SAC	000541	Farranamanagh Lough SAC	002189
Slieve Fyagh Bog SAC	000542	Ireland's Eye SAC	002193
All Saints Bog And Esker SAC	000566	Glenloughaun Esker SAC	002213
Charleville Wood SAC	000571	Killeglan Grassland SAC	002214
Clara Bog SAC	000572	Island Fen SAC	002236
Ferbane Bog SAC	000575	Lough Derg, North-East Shore SAC	002241
Fin Lough (Offaly) SAC	000576	Clare Island Cliffs SAC	002243
Mongan Bog SAC	000580	Ardrahan Grassland SAC	002244
Moyclare Bog SAC	000581	Old Farm Buildings, Ballymacrogan SAC	002245
Raheenmore Bog SAC	000582	Ballycullinan, Old Domestic Building SAC	002246
Cuilcagh - Anierin Uplands SAC	000584	Toonagh Estate SAC	002247
Sharavogue Bog SAC	000585	The Murrough Wetlands SAC	002249
Ballinturly Turlough SAC	000588	Carrowmore Dunes SAC	002250
Bellanagare Bog SAC	000592	Thomastown Quarry SAC	002252
Callow Bog SAC	000595	Ballyprior Grassland SAC	002256
Carrowbehy/Caher Bog SAC	000597	Moanour Mountain SAC	002257
Cloonchambers Bog SAC	000600	Silvermines Mountains West SAC	002258
Derrinea Bog SAC	000604	Tory Island Coast SAC	002259
Lough Fingall Complex SAC	000606	Magharee Islands SAC	002261
Errit Lough SAC	000607	Valencia Harbour/Portmagee Channel SAC	002262
Lisduff Turlough SAC	000609	Kerry Head Shoal SAC	002263
Lough Croan Turlough SAC	000610	Kilkee Reefs SAC	002264
Lough Funshinagh SAC	000611	Kingstown Bay SAC	002265
Mullygollan Turlough SAC	000612	Achill Head SAC	002268
Cloonshanville Bog SAC	000614	Carnsore Point SAC	002269
Ballysadare Bay SAC	000622	Wicklow Reef SAC	002274
Ben Bulben, Gleniff And Glenade Complex SAC	000623	Askeaton Fen Complex SAC	002279
Bunduff Lough And Machair/Trawalua/Mullaghmore SAC	000625	Dunbeacon Shingle SAC	002280
Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC	000627	Reen Point Shingle SAC	002281
Lough Hoe Bog SAC	000633	Rutland Island And Sound SAC	002283
Lough Nabrickkeagh Bog SAC	000634	Lough Swilly SAC	002287
Templehouse And Cloonacleigha Loughs SAC	000636	Carrowbaun, Newhall And Ballylee Turloughs SAC	002293
Turloughmore (Sligo) SAC	000637	Cahermore Turlough SAC	002294
Union Wood SAC	000638	Ballinduff Turlough SAC	002295
Ballyduff/Clonfinane Bog SAC	000641	Williamstown Turloughs SAC	002296
Galtee Mountains SAC	000646	River Moy SAC	002298
Kilcarren-Firville Bog SAC	000647	River Boyne And River Blackwater SAC	002299
Helvick Head SAC	000665	River Finn SAC	002301
Nier Valley Woodlands SAC	000668	Dunmuckrum Turloughs SAC	002303
Tramore Dunes And Backstrand SAC	000671	Carlingford Shore SAC	002306
Garriskil Bog SAC	000679	Slieve Bernagh Bog SAC	002312
Lough Ennell SAC	000685	Ballymore Fen SAC	002313
Lough Owel SAC	000688	Old Domestic Buildings, Rylane SAC	002314
Scragh Bog SAC	000692	Glanlough Woods SAC	002315
Ballyteige Burrow SAC	000696	Ratty River Cave SAC	002316
Bannow Bay SAC	000697	Cregg House Stables, Crusheen SAC	002317

Special Area of Conservation (SAC)	Site Code	Special Area of Conservation (SAC)	Site Code
Cahore Polders And Dunes SAC	000700	Knockanira House SAC	002318
Lady's Island Lake SAC	000704	Kilkishen House SAC	002319
Saltee Islands SAC	000707	Kildun Souterrain SAC	002320
Screen Hills SAC	000708	Glendine Wood SAC	002324
Tacumshin Lake SAC	000709	Mouds Bog SAC	002331
Raven Point Nature Reserve SAC	000710	Coolrain Bog SAC	002332
Ballyman Glen SAC	000713	Knockacoller Bog SAC	002333
Bray Head SAC	000714	Carn Park Bog SAC	002336
Carriggower Bog SAC	000716	Crosswood Bog SAC	002337
Deputy's Pass Nature Reserve SAC	000717	Drumalough Bog SAC	002338
Glen Of The Downs SAC	000719	Ballynamona Bog And Corkip Lough SAC	002339
Knocksink Wood SAC	000725	Moneybeg And Clareisland Bogs SAC	002340
Buckroney-Brittas Dunes And Fen SAC	000729	Ardagullion Bog SAC	002341
Vale Of Clara (Rathdrum Wood) SAC	000733	Mount Hevey Bog SAC	002342
Hook Head SAC	000764	Tullaher Lough And Bog SAC	002343
Blackstairs Mountains SAC	000770	Brown Bog SAC	002346
Slaney River Valley SAC	000781	Camderry Bog SAC	002347
Cullahill Mountain SAC	000831	Clooneen Bog SAC	002348
Spahill And Clomantagh Hill SAC	000849	Corbo Bog SAC	002349
Clonaslee Eskers And Derry Bog SAC	000859	Curraghlehanagh Bog SAC	002350
Lisbigney Bog SAC	000869	Moanveanlagh Bog SAC	002351
Ridge Road, SW of Rapemills SAC	000919	Monivea Bog SAC	002352
The Long Derries, Edenderry SAC	000925	Redwood Bog SAC	002353
Clare Glen SAC	000930	Tullaghanrock Bog SAC	002354
Kilduff, Devilsbit Mountain SAC	000934	Ardgraigue Bog SAC	002356
Silvermine Mountains SAC	000939	Blackwater Bank SAC	002953
Corratirrim SAC	000979	West Connacht Coast SAC	002998
Ballyteige (Clare) SAC	000994	Hempton's Turbot Bank SAC	002999
Ballyvaughan Turlough SAC	000996	Rockabill to Dalkey Island SAC	003000
Glenomra Wood SAC	001013	Cleanderry Wood SAC	001043
Carrowmore Point To Spanish Point And Islands SAC	001021	Great Island Channel SAC	001058
Barley Cove To Ballyrisode Point SAC	001040	Kilkeran Lake And Castlefreke Dunes SAC	001061
		Myross Wood SAC	001070

APPENDIX C

Special Protection Areas, Republic of Ireland

Special Protection Area (SPA)	Site Code	Special Protection Area (SPA)	Site Code
Saltee Islands SPA	004002	Pettigo Plateau Nature Reserve SPA	004099
Puffin Island SPA	004003	Inishtrahull SPA	004100
Inishkea Islands SPA	004004	Ballykenny-Fisherstown Bog SPA	004101
Cliffs of Moher SPA	004005	Garriskil Bog SPA	004102
North Bull Island SPA	004006	All Saints Bog SPA	004103
Skelligs SPA	004007	Bellanagare Bog SPA	004105
Blasket Islands SPA	004008	Coole-Garryland SPA	004107
Lady's Island Lake SPA	004009	Eirk Bog SPA	004108
Drumcliff Bay SPA	004013	The Gearagh SPA	004109
Rockabill SPA	004014	Lough Nillan Bog SPA	004110
Rogerstown Estuary SPA	004015	Duvillaun Islands SPA	004111
Baldoyle Bay SPA	004016	Howth Head Coast SPA	004113
Mongan Bog SPA	004017	Illaunonearaun SPA	004114
The Raven SPA	004019	Inishduff SPA	004115
Ballyteigue Burrow SPA	004020	Inishkeel SPA	004116
Old Head of Kinsale SPA	004021	Ireland's Eye SPA	004117
Ballycotton Bay SPA	004022	Keeragh Islands SPA	004118
Ballymacoda Bay SPA	004023	Loop Head SPA	004119
South Dublin Bay and River Tolka Estuary SPA	004024	Rathlin O'Birne Island SPA	004120
Broadmeadow/Swords Estuary SPA	004025	Roaninish SPA	004121
Dundalk Bay SPA	004026	Skerries Islands SPA	004122
Tramore Back Strand SPA	004027	Sovereign Islands SPA	004124
Blackwater Estuary SPA	004028	Magharee Islands SPA	004125
Castlemaine Harbour SPA	004029	Wicklow Head SPA	004127
Cork Harbour SPA	004030	Ballysadare Bay SPA	004129
Inner Galway Bay SPA	004031	Illancrone and Inishkeeragh SPA	004132
Dungarvan Harbour SPA	004032	Aughris Head SPA	004133
Bannow Bay SPA	004033	Lough Rea SPA	004134
Trawbreaga Bay SPA	004034	Ardboline Island and Horse Island SPA	004135
Cummeen Strand SPA	004035	Clare Island SPA	004136
Killala Bay/Moy Estuary SPA	004036	Dovegrove Callows SPA	004137
Blacksod Bay/Broadhaven SPA	004037	Lough Croan Turlough SPA	004139
Killarney National Park SPA	004038	Four Roads Turlough SPA	004140
Derryveagh And Glendowan Mountains SPA	004039	Cregganna Marsh SPA	004142
Wicklow Mountains SPA	004040	Cahore Marshes SPA	004143
Ballyallia Lough SPA	004041	High Island, Inishshark and Davillaun SPA	004144
Lough Corrib SPA	004042	Durnesh Lough SPA	004145
Lough Derravaragh SPA	004043	Malin Head SPA	004146
Lough Ennell SPA	004044	Fanad Head SPA	004148
Glen Lough SPA	004045	Falcarragh to Meenlaragh SPA	004149
Lough Iron SPA	004046	West Donegal Coast SPA	004150
Lough Owel SPA	004047	Donegal Bay SPA	004151
Lough Gara SPA	004048	Inishmore SPA	004152
Lough Oughter SPA	004049	Dingle Peninsula SPA	004153
Lough Arrow SPA	004050	Iveragh Peninsula SPA	004154
Lough Carra SPA	004051	Beara Peninsula SPA	004155
Carrowmore Lake SPA	004052	Sheep's Head to Toe Head SPA	004156
Lough Cutra SPA	004056	River Nanny Estuary and Shore SPA	004158

Special Protection Area (SPA)	Site Code	Special Protection Area (SPA)	Site Code
Lough Derg (Donegal) SPA	004057	Slyne Head To Ardmore Point Islands SPA	004159
Lough Derg (Shannon) SPA	004058	Slieve Bloom Mountains SPA	004160
Lough Fern SPA	004060	Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA	004161
Lough Kinale and Derragh Lough SPA	004061	Mullaghanish to Musheramore Mountains SPA	004162
Lough Mask SPA	004062	Slievefelim to Silvermines Mountains SPA	004165
Poulaphouca Reservoir SPA	004063	Slieve Beagh SPA	004167
Lough Ree SPA	004064	Slieve Aughty Mountains SPA	004168
Lough Sheelin SPA	004065	Cruagh Island SPA	004170
The Bull and The Cow Rocks SPA	004066	Dalkey Islands SPA	004172
Inishmurray SPA	004068	Deenish Island and Scariff Island SPA	004175
Lambay Island SPA	004069	Bills Rocks SPA	004177
Stags of Broad Haven SPA	004072	Connemara Bog Complex SPA	004181
Tory Island SPA	004073	Mid-Clare Coast SPA	004182
Illanmaster SPA	004074	The Murrough SPA	004186
Lough Swilly SPA	004075	Sligo/Leitrim Uplands SPA	004187
Wexford Harbour and Slobs SPA	004076	Tralee Bay Complex SPA	004188
River Shannon and River Fergus Estuaries SPA	004077	Kerry Head SPA	004189
Carlingford Lough SPA	004078	Galley Head to Duneen Point SPA	004190
Boyne Estuary SPA	004080	Seven Heads SPA	004191
Clonakilty Bay SPA	004081	Helvick Head to Ballyquin SPA	004192
Greers Isle SPA	004082	Mid-Waterford Coast SPA	004193
Inishbofin, Inishdooey and Inishbeg SPA	004083	Horn Head to Fanad Head SPA	004194
Inishglora and Inishkeeragh SPA	004084	Cross Lough (Killadoon) SPA	004212
River Little Brosna Callows SPA	004086	Courtmacsherry Bay SPA	004219
Lough Foyle SPA	004087	Corofin Wetlands SPA	004220
Rahasane Turlough SPA	004089	Illaunnanoon SPA	004221
Sheskinmore Lough SPA	004090	Mullet Peninsula SPA	004227
Stabannan-Braganstown SPA	004091	Lough Conn and Lough Cullin SPA	004228
Tacumshin Lake SPA	004092	West Donegal Islands SPA	004230
Termoncarragh Lake and Annagh Machair SPA	004093	Inishbofin, Omey Island and Turbot Island SPA	004231
Blackwater Callows SPA	004094	River Boyne and River Blackwater SPA	004232
Kilcolman Bog SPA	004095	River Nore SPA	004233
Middle Shannon Callows SPA	004096	Ballintemple and Ballygilgan SPA	004234
River Suck Callows SPA	004097	Doogort Machair SPA	004235
Owenduff/Nephin Complex SPA	004098		

APPENDIX D

Special Areas of Conservation, Northern Ireland

Site Code	Special Area of Conservation (SAC)	Site Code	Special Area of Conservation (SAC)
UK0016603	Cuilcagh Mountain	UK0030233	Owenkillew River
UK0016607	Pettigoe Plateau	UK0030268	Rostrevor Wood
UK0016611	Fairy Water Bogs	UK0030277	Slieve Gullion
UK0016613	Magilligan	UK0030300	West Fermanagh Scarplands
UK0016614	Upper Lough Erne	UK0030320	River Foyle and Tributaries
UK0016615	Eastern Mournes	UK0030360	River Roe and Tributaries
UK0016619	Monawilkin	UK0030361	River Faughan and Tributaries
UK0016620	Derryleckagh	UK0030084	Bann Estuary
UK0016621	Magheraveely Marl Loughs	UK0030089	Binevenagh
UK0016622	Slieve Beagh	UK0030116	Cladagh (Swanlinbar) River
UK0030045	Largalinny	UK0030211	Moneygal Bog
UK0030047	Lough Melvin	UK0030212	Moninea Bog
UK0030068	Fardrum and Roosky Turloughs	UK0030383	Skerries and Causeway

APPENDIX E

Special Protection Areas, Northern Ireland

Special Protection Area (SPA)	Site Code
Lough Foyle	UK9020031
Pettigoe Plateau	UK9020051
Upper Lough Erne	UK9020071
Carlingford Lough	UK9020161
Slieve Beagh-Mullaghfad-Lisnaskea	UK9020302

APPENDIX F

Habitats Directive Annex I water dependent habitats and Annex II water dependent species

Water dependent Habitats Directive Annex I Habitats, Correct as of December 2015

HD Habitat Code	Habitat Name	Water supplies to the habitat			Type of Habitat		
		Surface Water Dependent	Ground-water Dependent	Marine Water Dependent	Surface Waterbody	GWDTE	Other
1110	Sandbanks which are slightly covered by sea water all the time			Yes	Coastal		
1130	Estuaries	Yes		Yes	Transitional		
1140	Mudflats and sandflats not covered by seawater at low tide			Yes	Coastal		
1150	Coastal lagoons	Yes	Yes	Yes	Transitional		
1160	Large shallow inlets and bays	Yes		Yes	Coastal		
1170	Reefs			Yes	Coastal		
1210	Annual vegetation of drift lines			Yes			Coastal terrestrial
1220	Perennial vegetation of stony banks			Yes			Coastal terrestrial
1230	Vegetated sea cliffs of the Atlantic and Baltic coasts						Coastal terrestrial
1310	*Salicornia* and other annuals colonizing mud and sand			Yes			Intertidal
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)		Yes	Yes			Intertidal
1410	Mediterranean salt meadows (Juncetalia maritimi)		Yes	Yes			Intertidal
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)			Yes			Intertidal
2110	Embryonic shifting dunes						Coastal terrestrial
2120	Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)						Coastal terrestrial
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)						Coastal terrestrial
2140	Decalcified fixed dunes with *Empetrum nigrum*						Coastal terrestrial
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)						Coastal

HD Habitat Code	Habitat Name	Water supplies to the habitat			Type of Habitat		
		Surface Water Dependent	Ground-water Dependent	Marine Water Dependent	Surface Waterbody	GWDTE	Other
							terrestrial
2170	Dunes with *Salix repens ssp. argentea* (Salix arenariae)		Yes			Yes	
2190	Humid dune slacks		Yes	Yes		Yes	
21A0	Machairs (* in Ireland)	Yes	Yes			Yes	
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	Yes	Yes		Lakes		
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	Yes	Yes		Lakes		
3140	Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.	Yes	Yes		Lakes		
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation	Yes	Yes		Lakes		
3160	Natural dystrophic lakes and ponds	Yes	Yes		Lakes		
3180	Turloughs	Yes	Yes			Yes	
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	Yes	Yes		Rivers		
3270	Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation	Yes	Yes			Yes	
4010	Northern Atlantic wet heaths with *Erica tetralix* (FLUSHES ONLY)		Yes			Yes	
6410	*Molinia* meadows on calcareous, peaty or clavey-silt-laden soils (Molinion caeruleae)	?	Yes			Yes	
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	Yes	Yes			Yes	
7110	Active raised bogs (LAGG ONLY)	Yes	Yes			Yes	
7120	Degraded raised bogs still capable of natural regeneration (LAGG ONLY)	Yes	Yes			Yes	
7130	Blanket bog (*active only) (FLUSHES ONLY)		Yes			Yes	
7140	Transition mires and quaking bogs	Yes	Yes			Yes	
7150	Depressions on peat substrates of the Rhynchosporion	Yes	Yes			Yes	
7210	Calcareous fens with *Cladium mariscus* and species of the Caricion		Yes			Yes	

HD Habitat Code	Habitat Name	Water supplies to the habitat			Type of Habitat		
		Surface Water Dependent	Ground-water Dependent	Marine Water Dependent	Surface Waterbody	GWDTE	Other
	davallianae						
7220	Petrifying springs with tufa formation (Cratoneurion)		Yes			Yes	
7230	Alkaline fens		Yes			Yes	
8310	Caves not open to the public		Yes			Yes	
8330	Submerged or partly submerged sea caves			Yes	Coastal		
91D0	Bog woodland		Yes			Yes	
91E0	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)	Yes	Yes			Yes	

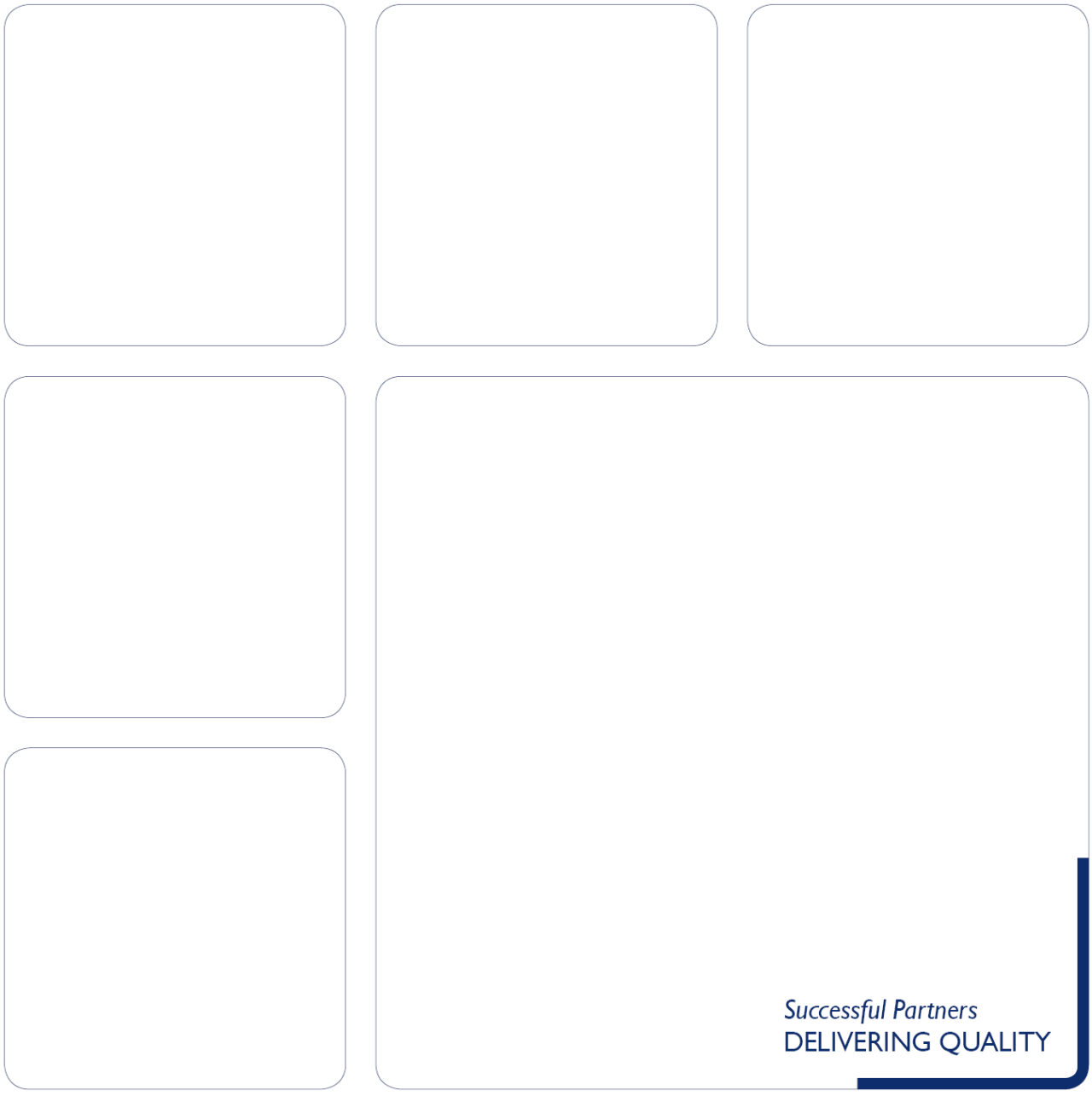
Water dependent Habitats Directive Annex II Species, correct as of December 2015

HD Species Code	Species name	Common name	Surface Water Dependent	Ground-water Dependent	Marine Water Dependent	Found in Surface Waterbody	Found in GWDTE	Comment
1013	*Vertigo geyeri*	whorl snail		Yes			Yes	
1014	*Vertigo angustior*	whorl snail		Yes			Yes	
1016	*Vertigo moulinsiana*	whorl snail	Yes	Yes			Yes	
1029	*Margaritifera margaritifera*	freshwater pearl mussel	Yes			Yes		Rivers, some lakes
1065	*Euphydryas aurinia*	marsh fritillary					Yes	Also found in peatland & wet grassland, i.e. in some non-water dependent habitats
1092	*Austropotamobius pallipes*	white-clawed crayfish	Yes	Yes		Yes		Rivers and Lakes
1095	*Petromyzon marinus*	sea lamprey	Yes		Yes	Yes		Rivers mainly, some lakes
1096	*Lampetra planeri*	brook lamprey	Yes			Yes		Rivers mainly
1099	*Lampetra fluviatilis*	river lamprey	Yes			Yes		Rivers mainly
1103	*Alosa fallax*	twaite shad	Yes		Yes	Yes		Tidal stretches of rivers, estuaries
1106	*Salmo salar*	Atlantic salmon	Yes		Yes	Yes		Rivers mainly
1349	*Tursiops truncatus*	bottle-nosed dolphin			Yes	Yes		Coastal water bodies
1351	*Phocoena phocoena*	harbour porpoise			Yes	Yes		Coastal and transitional water bodies
1355	*Lutra lutra*	otter	Yes		Yes	Yes		Rivers, lakes and coastal and transitional water bodies
1364	*Halichoerus grypus*	grey seal			Yes	Yes		Coastal and transitional water bodies
1365	*Phoca vitulina*	common seal			Yes	Yes		Coastal and transitional water bodies
1393	*Drepanocladus vernicosus*	shining sickle moss		Yes			Yes	
1395	*Petalophyllum ralfsii*	petalwort		Yes			Yes	
1421	*Trichomanes speciosum*	Killarney fern	Yes			Yes		Splash zones of streams and rivers, but also found in other areas of high humidity, such as crevices

HD Species Code	Species name	Common name	Surface Water Dependent	Ground-water Dependent	Marine Water Dependent	Found in Surface Waterbody	Found in GWDTE	Comment
								in rocky slopes, in woodlands or areas with surface water seepages/runs.
1528	*Saxifraga hirculus*	yellow marsh saxifrage		Yes			Yes	
1833	*Najas flexilis*	slender naiad	Yes			Yes		Lakes
1990	*Margaritifera durrovensis*	Nore pearl mussel	Yes			Yes		River

Appendix G

EU Condition Assessment



Successful Partners
DELIVERING QUALITY

Habitat Name*	Code	Conservation Status 2007	Conservation Status 2013 (and Trend)
Sandbanks	1110	Inadequate	**Favourable.** Improvement owing to decline in pressures.
Estuary	1130	Inadequate	**Unfavourable-Inadequate**. Trend is likely improvement in habitat condition in the future.
Mudflats and Sandflats no covered by seawater at low tide	1140	Inadequate	**Unfavourable-Inadequate**. Trend is likely improvement in habitat condition in the future.
Lagoons *	1150	Bad	**Unfavourable-Bad**. No change since previous assessment period.
Large Shallow Inlets and Bays	1160	Inadequate	**Unfavourable-Inadequate**. Although inadequate, trend is considered to be improvement.
Reefs	1170	Inadequate	**Unfavourable-Bad**. Declining as there is no indication that current pressures will reduce in the future.
Annual vegetation of drift lines	1210	Inadequate	**Unfavourable-Inadequate**. Declining owing to loss of area and impairment of structure & functions.
Perennial vegetation of drift lines	1220	Inadequate	**Unfavourable-Inadequate**. Trend is stable (e.g. no change)
Vegetated seacliffs of the Atlantic and Baltic coasts	1230	Inadequate	**Unfavourable-Inadequate**. Trend is estimated as stable though potential impacts of climate change may pose a more serious threat.
Salicornia and other annuals colonising mud and sand	1310	Inadequate	**Unfavourable-Inadequate**. Trend is estimated as declining owing to on-going spread of common cordgrass.
Spartina Swards (Spartinion)	1320	Bad	No Assessment given owing to the non-native nature (in Ireland) of this habitat.
Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	1330	Inadequate	**Unfavourable-Inadequate**. Trend is stable though grazing levels may impact habitat condition.
Mediterranean salt meadows (Juncetalia maritimi)	1410	Inadequate	**Unfavourable-Inadequate**. Trend is stable though grazing levels may impact habitat condition.
Halophlilous Scrub	1420	Bad	**Unfavourable-Bad.** Trend is declining owing to habitat vulnerability and losses.
Embryonic shifting dunes	2110	Inadequate	**Unfavourable-Inadequate**. Trend is Stable (negligible national loss of Area).
Shifting dunes along the shoreline with *Ammophila arenaria* (“white dunes”)	2120	Bad	**Unfavourable-Inadequate**. Trend is stable (no real change, owing to differing assessment methodology).
Fixed coastal dunes with herbaceous vegetation (grey dunes) *	2130	Bad	**Unfavourable-Bad**. Trend is stable (no change in recreational pressures and grazing levels including undergrazing).
Decalcified *Empetrum* Dunes *	2140	Bad	**Unfavourable-Inadequate**. Trend is slight improvement related to change in interpretation criteria.

Habitat Name*	Code	Conservation Status 2007	Conservation Status 2013 (and Trend)
Decalcified dune Heath *	2150	Bad	**Unfavourable-Inadequate**. Trend is slight improvement related to change in interpretation criteria.
Dunes with Creeping Willow	2170	Inadequate	**Unfavourable-Inadequate**. Trend is stable due to no apparent overall change in management pressures.
Humid dune slacks	2190	Bad	**Unfavourable-Inadequate**. Declining in view of the ongoing pressures and threats.
Machair *	21A0	Bad	**Unfavourable-Bad**. Trend is stable (negligible national loss of Area and habitat compromise due to management regimes).
Oligotrophic soft water Lakes	3110	Bad	**Unfavourable-Bad**. Trend is declining owing to eutrophication.
Soft water lakes with base-rich influences	3130	Bad	**Unfavourable-Inadequate**. Change to improved ecological analysis.
Hard water lakes	3140	Bad	**Unfavourable-Bad**. Trend is declining owing to continued pollution events.
Natural eutrophic lakes	3150	Bad	**Unfavourable-Inadequate**. Trend is stable, with change in status due to improved ecological analysis.
Dystrophic lakes	3160	Bad	**Unfavourable-Inadequate**. Trend is declining but change of assessment due to better ecological understanding of the distribution and ecological requirements of this habitat.
Turloughs *	3180	Inadequate	**Unfavourable-Inadequate**. Trend is stable but threats still remain.
Floating river vegetation	3260	Bad	**Unfavourable-Inadequate**. Trend is declining but change of assessment due to better ecological understanding of the distribution and ecological requirements of this habitat.
Chenopdium rubri	3270	Favourable	**Favourable** Trend is considered stable but further work required to improve understanding.
Wet Heath	4010	Bad	**Unfavourable-Bad**. Trend is stable owing to stocking reductions compensating for habitat loss.
European dry heaths	4030	Inadequate	**Unfavourable-Bad**. Trend is declining owing to differing assessment methodology and greater information.
Alpine and subalpine heath	4060	Inadequate (on hindsight the assessment should have been bad)	**Unfavourable-Bad**. Trend is improving owing to improvements in management.
Juniper scrub	5130	Inadequate	**Unfavourable-Inadequate**. Trend is stable owing to no apparent change in circumstances or condition.
Calaminarian grassland	6130	Inadequate	**Unfavourable-Inadequate**. Trend is stable and better understanding should feed

Habitat Name*	Code	Conservation Status 2007	Conservation Status 2013 (and Trend)
			into improved management regimes.
Orchid-rich calcareous grassland *	6210	Bad	**Unfavourable-Bad**. Trend is stable but no change in pressures in near future.
Species-rich *Nardus* upland grassland *	6230	Bad	**Unfavourable-Bad**. Trend is declining owing to losses from non-compatible land uses.
Molinia Meadows	6410	Bad	**Unfavourable-Bad**. Trend is declining owing to abandonment of management scrub encroachment.
Hydrophillous tall herb	6430	Inadequate (on hindsight the assessment should have been bad)	**Unfavourable-Bad**. Trend is declining despite its marginal extent owing to reclamation.
Lowland Hay meadows	6510	Bad	**Unfavourable-Bad**. Trend is stable owing to no overall change in extent of management.
Raised Bog (active) *	7110	Bad	**Unfavourable-Bad**. Trend is declining owing to ongoing extraction and drying out. Limited trials of drain blocking are showing signs of success.
Degraded Raised Bog	7120	Inadequate	**Unfavourable-Bad**. Trend is declining owing to loss of extent and habitat degradation.
Blanket Bog (active) *	7130	Bad	**Unfavourable-Bad**. Trend is declining owing to loss of extent and habitat degradation.
Transition Mires	7140	Bad	**Unfavourable-Bad**. Trend is unconfirmed owing to lack of nationwide scientific data.
Rhynchosprion Depressions	7150	Favourable	**Unfavourable-Inadequate**. Trend is declining owing to habitat changes and species loss.
Cladium Fen *	7210	Bad	**Unfavourable-Bad**. Trend is unconfirmed owing to lack of nationwide scientific data.
Petrifying Springs *	7220	Bad	**Unfavourable-Inadequate**. Trend is stable but pressures and poor management regimes remain.
Alkaline Fen	7230	Bad	**Unfavourable-Bad**. Trend is unconfirmed owing to lack of nationwide scientific data.
Siliceous Scree	8110	Inadequate	**Unfavourable-Inadequate**. Trend is improving owing to implementation of commonage framework plans.
Eutric Scree	8120	Inadequate	**Unfavourable-Inadequate**. Trend is stable with no change.
Calcareous rocky slopes	8210	Inadequate	**Unfavourable-Inadequate**. Trend is stable although grazing levels can impair quality.

Habitat Name*	Code	Conservation Status 2007	Conservation Status 2013 (and Trend)
Siliceous rocky slopes	8220	Inadequate	**Unfavourable-Inadequate**. Trend is stable although grazing, recreation and spread of invasive species continue.
Limestone Pavement *	8240	Inadequate	**Unfavourable-Inadequate**. Trend is stable owing to management measures to control losses.
Caves	8310	Favourable	**Favourable.** Additional research required to understand structure and subterranean climatic conditions.
Sea Caves	8330	Favourable	**Favourable.** Trend is stable as no significant pressures.
Old Oak Woodlands	91A0	Bad	**Unfavourable-Bad**. Trend is improving due in part to considerable management effort to rehabilitate habitat.
Bog Woodland *	91D0	Inadequate	**Favourable.** Trend is improving owing to better understanding of, and subsequent increase in extent.
Residual Alluvial Forests *	91E0	Bad	**Unfavourable-Bad.** Trend is improving owing to level of rehabilitation to date.
Taxus baccata woods*	91J0	Bad	**Unfavourable-Bad.** Trend is improving to increase area and curtail threatening impacts.
Submarine structures made by leaking gases	1180	N/A	Natura 2000 dataform suggests Good

* Indicates priority habitat under the Habitats Directive

Species

Species	Code	Conservation Status 2007	Conservation Status 2013 (and Trend)
Killarney Fern (*Trichomanes speciosum*)	1421	Favourable	**Favourable.** Trend is stable with no significant impact.
Marsh Saxifrage (*Saxifaga granulata*)	1528	Favourable	**Favourable.** Trend is stable with no significant impact.
Slender Naiad (*Najas flexilis*)	1833	Inadequate	**Unfavourable-Inadequate**. Trend is stable but eutrophication remains an issue.
Slender Green Feather Moss (*Hamatocaulis vernicosus*)	1393	Favourable	**Favourable.** Trend is stable with no significant impact.
Petalwort (*Petalophyllum ralfsii*)	1395	Favourable	**Favourable.** Trend is stable with no significant impact.
Maërl (*Lithothamnion corralloides*)	1376	Inadequate	**Unfavourable-Inadequate**. Trend is improving due to genuine improvement. Fishing and aquaculture related activities are not considered to be a threat to these species in the future.
Maërl (*Phymatolithon calcareum*)	1377	Inadequate	**Unfavourable-Inadequate**. Trend is improving due to genuine improvement. Fishing and aquaculture related activities are not considered to be a threat to these species in the future.
White cushion moss (*Leucobryum glaucum*)	1400	Inadequate	**Favourable.** No genuine change but it is widespread, occurs in many habitat types and is not under pressure or threat directly.
Sphagnum genus	1409	Inadequate	**Unfavourable-Inadequate**. No change in trend. Condition of habitats considered to be poor due to peat extraction, drainage, eutrophication and ecologically unsuitable grazing.
Lycopodium group	1413	Inadequate	**Unfavourable-Inadequate**. No change in trend. Condition of habitats considered to be poor due to peat extraction, drainage, eutrophication and ecologically unsuitable grazing.
Cladonia subgenus cladina	1378	Inadequate	**Unfavourable-Inadequate**. No change in trend. Condition of habitats considered to be poor due to peat extraction, drainage, eutrophication and ecologically unsuitable grazing.
Geyers whorl snail (*Vertigo geyeri*)	1013	Inadequate	**Unfavourable-Inadequate**. Genuine decline in trend with losses not fully understood. Sites for species fragile and easily damaged.

Species	Code	Conservation Status 2007	Conservation Status 2013 (and Trend)
Narrow-mouthed whorl snail (*Vertigo angustoir*)	1014	Inadequate	**Unfavourable-Inadequate**. Genuine decline in trend due to changes in grazing and wetland drainage.
Desmoulins Whorl Snail (*Vertigo moulinsiana*)	1016	Bad	**Unfavourable-Inadequate**. Decline in trend. Genuine losses of population in the last assessment period through succession and drying out of wetlands have not been recovered.
Kerry Slug (*Geomacalus maculosus*)	1024	Favourable	**Favourable.** Trend stable. No evidence of decline, habitats remain in good condition.
Freshwater Pearl Mussel (*Margaritifera margaritifera*)	1029	Bad	**Unfavourable-Bad**. Decline in trend. Wide variety of sources of sediment and nutrients entering mussel rivers. Direct impacts from in-stream works.
Irish Freshwater Pearl Mussel (*Margaritifera durrovensis*)	1990	Bad	**Unfavourable-Bad**. Decline in trend. Despite significant conservation efforts it is unlikely that the habitat will be restored before the extinction of the wild population.
White-Clawed Crayfish (*Austropotambius pallipes*)	1092	Inadequate	**Unfavourable-Inadequate**. Trend is stable. Threat from disease introduction is severe and unlikely to disappear.
Marsh Fritillary (*Euphydryas aurinia*)		Inadequate	**Unfavourable-Inadequate**. Decline in trend. Appropriate measures need to be taken to reduce pressures.
Sea Lamprey (*Petromyzon marinus*)	1095	Inadequate	**Unfavourable-Bad**. Trend is stable. Decline in status due to improved knowledge. Low number of juveniles due to barriers to migration.
River Lamprey (*Lampetra fluviatilis*)	1099	Favourable	**Favourable.** No change. Extensive areas of suitable habitat and no significant pressures.
Brook Lamprey (*Lampetra planeri*)	1096	Favourable	**Favourable.** No change. Extensive areas of suitable habitat and no significant pressures.
Killarney Shad (*Alosa fallax killarnensis*)	5046	Favourable	**Favourable.** No change. Species maintaining robust population and habitat favourable.
Twaite Shad (*Alosa fallax fallax*)	1103	Bad	**Unfavourable-Bad**. Trend stable, approach refined. Concerns about habitat quality at spawning sites and hybridisation with Allis Shad.

Species	Code	Conservation Status 2007	Conservation Status 2013 (and Trend)
Pollan (*Coregonus autumnalis*)	5076	Bad	**Unfavourable-Bad**. No change in trend. Pressures identified include depletion of oxygen through enrichment, introduced species competing for food and the presence of Zebra mussels and Asian clams.
Atlantic Salmon (*Salmo salar*)	1106	Bad	**Unfavourable-Inadequate**. Trend stable, no genuine change. This is due to threats to habitat quality and low populations compared to previous years.
Natterjack Toad (*Bufo calamita*)	1202	Bad	**Unfavourable-Bad**. Trend improved due to investment in pond creation increasing available habitat.
Common Frog (*Rana temporaria*)	1213	Inadequate	**Favourable**. No trend change but improved status due to better understanding of how frogs use the Irish landscape.
Leatherback Turtle (*Dermochelys coriacea*)	1223	Inadequate	**Unknown**. Full assessment not possible due to significant difficulties associated with studying the species.
Lesser Horseshoe Bat (*Rhinolophus hipposideros*)	1303	Favourable	**Favourable**. Trend is stable. Significant proportion of summer and winter roosts protected within SACs. Increased population.
Common Pipistrelle (*Pipistrellus pipistrellus*)	1309	Favourable	**Favourable**. Trend is stable. Population stable, possibly increasing.
Soprano Pipistrelle (*Pipistrellus pygmaeus*)	5009	Favourable	**Favourable**. Trend is stable. Population increasing.
Nathusius' Pipistrelle (*Pipistrelle nathusii*)	1317	Favourable	**Unknown**. Unknown due to uncertain data.
Natterer's Bat (*Myotis nattereri*)	1322	Favourable	**Favourable**. Trend is stable. Area of suitable habitat increasing.
Daubenton's Bat (*Myotis daubentonii*)	1314	Favourable	**Favourable**. Trend is stable. Stable populations.
Whiskered Bat (*Myotis mystacinus*)	1330	Favourable	**Favourable**. Trend is stable. Area of suitable habitat increasing.
Brown Long-Eared Bat (*Plecotus auritus*)	1326	Favourable	**Favourable**. Trend is stable. Population increasing.
Leisler's Bat (*Nyctalus leisleri*)	1331	Favourable	**Favourable**. Trend is stable. Population increasing.
Mountain Hare (*Lepus timidus*)	1334	Inadequate	**Favourable**. Change due to improved knowledge. Hare is widespread with broad habitat niche.

Species	Code	Conservation Status 2007	Conservation Status 2013 (and Trend)
Otter (*Lutra lutra*)	1355	Inadequate	**Favourable**. Trend improved. Previous concerns about population decline have been allayed.
Pine Marten (*Martes martes*)	1357	Favourable	**Favourable**. Trend is stable. Ample habitat available.
Grey Seal (*Halichoerus grypous*)	1364	Favourable	**Favourable** Trend is stable (owing to improved knowledge).
Common Seal (*Phoca vitulina vitulina*)	1365	Favourable	**Favourable** Trend is stable (owing to improved knowledge).
Humpback Whale (*Megaptera novaeangliae*)	1345	Unknown	**Unknown**. No change.
Bottle-Nosed Dolphin (*Tursiops truncatus*)	1349	Favourable	**Favourable**. Trend is stable. Improved knowledge.
Common Dolphin (*Delphinus delphis*)	1350	Favourable	**Favourable**. Trend is stable. Improved knowledge.
Harbour porpoise (*Phocoena phocoena*)	1351	Favourable	**Favourable** Trend is stable.
Killer Whale (*Orcinus orca*)	2027	Unknown	**Unknown**. No change.
Long-Finned Pilot Whale (*Globicephala melas*)	2029	Unknown	**Favourable**. No trend. Improved status due to improved knowledge.
Risso's Dolphin (*Grampus griseus*)	2030	Unknown	**Unknown**. No change.
White-Sided Dolphin (*Lagenorhynchus acutus*)	2031	Favourable	**Favourable**. Trend is stable.
White-Beaked Dolphin (*Lagenorhynchus albirostris*)	2032	Unknown	**Favourable**. No trend. Improved status due to improved knowledge.
Striped Dolphin (*Stenella coeruleoalba*)	2034	Unknown	**Favourable**. No trend. Improved status due to improved knowledge.
Cuvier's Beaked Whale (*Ziphius cavirostris*)	2035	Unknown	**Unknown**. No change.
Sowerby's Beaked Whale (*Mesoplodon bidens*)	2038	Unknown	**Unknown**. No change.
Minke Whale (*Balaenoptera acutorostrata*)	2618	Favourable	**Favourable**. Trend is stable.
Fin Whale (*Balaenoptera physalus*)	2621	Favourable	**Favourable**. Trend is stable.
Blue Whale (*Balaenoptera musculus*)	5020	Unknown	**Unknown**. No change.
Sperm Whale (*Physeter catodon*)	5031	Unknown	**Unknown**. No change.

Species	Code	Conservation Status 2007	Conservation Status 2013 (and Trend)
Northern Bottlenose Whale (*Hyperoodon ampullatus*)	5033	Unknown	**Unknown**. No change.
Sei Whale (*Balaenoptera borealis*)	2619	Unknown	**Unknown**. No change.
Vagrants (Species which have previously been recorded but are not assessed owing to infrequent nature of records)			
Northern Right Whale (*Eubalaena glacialis*)	1348	Unknown	**Unknown**. Vagrant.
False Killer Whale (*Pseudorca crassidens*)	2028	Unknown	**Unknown**. Vagrant.
True's Beaked Whale (*Mesoplodon mirus*)	2037	Unknown	**Unknown**. Vagrant.
Pygmy Sperm Whale (*Kogia breviceps*)	2622	Unknown	**Unknown**. Vagrant.
Beluga/White Whale (*Delphinapterus leucas*)	5029	Unknown	**Unknown**. Vagrant.
Gervais' Beaked Whale (*Mesoplodon europaeus*)	5034	Unknown	**Unknown**. Vagrant.
Allis Shad (*Alosa alosa*)	1102	Unknown	**Unknown**. Vagrant.
Brandt's (*Myotis brandtii*)	1320	Unknown	**Unknown**. Vagrant.

Birds

Bird Species	Code	Status BoCCI2 2007-2013*	Status BoCCI3 2014-2019*
Red-throated Diver (*Gavia stellata*)	A001	Amber (breeding)	**Amber** (breeding)
Great Northern Diver (*Gavia immer*)	A003	Green (wintering)	**Amber** (wintering)
Little Grebe (*Tachybaptus ruficollis*)	A004	Amber (breeding/wintering)	**Amber** (breeding/wintering)
Great Crested Grebe (*Podiceps cirstatus*)	A005	Amber (breeding/wintering)	**Amber** (breeding/wintering)
Fulmar (*Fulmarus glacialis*)	A009	Green (breeding)	**Green** (breeding)
Manx Shearwater (*Puffinus puffinus*)	A013	Amber (breeding)	**Amber** (breeding)
Storm Petrel (*Hydrobates pelagicus*)	A014	Amber (breeding)	**Amber** (breeding)
Leach's Storm-petrel (*Oceanodroma leucorhoa*)	A015	Amber (breeding)	**Red** (breeding)
Gannet (*Morus bassanus*)	A016	Amber (breeding)	**Amber** (breeding)
Cormorant (*Phalacrocorax carbo*)	A017	Amber (breeding/wintering)	**Amber** (breeding/wintering)
Shag (*Phalacrocorax aristotelis*)	A018	Amber (breeding)	**Amber** (breeding)
Grey heron (*Ardea cinerea*)	A028	Green (breeding/wintering)	**Green** (breeding/wintering)
Bewick's Swan (*Cygnus columbianus bewickii*)	A037	Red (wintering)	**Red** (wintering)
Whooper Swan (*Cygnus cygnus*)	A038	Amber (wintering)	**Amber** (wintering)
Greylag Goose *(Anser anser*)	A043	Amber (wintering)	**Amber** (wintering)
Barnacle Goose (*Branta leucopsis*)	A045	Amber (wintering)	**Amber** (wintering)
Light-bellied Brent Goose (*Branta bernicola hrota*)	A046	Amber (wintering)	**Amber** (wintering)
Shelduck (*Tadorna tadorna*)	A048	Amber (breeding/wintering)	**Amber** (breeding/wintering)
Wigeon (*Anas penelope)*	A050	Amber (wintering)	**Red** (wintering)
Gadwall (*Anas strepera*)	A051	Amber (breeding/wintering)	**Amber** (breeding/wintering)
Teal (*Anas crecca*)	A052	Amber (breeding/wintering)	**Amber** (breeding/wintering)
Mallard (*Anas pyatyrhynchos*)	A053	Green (wintering)	**Green** (wintering)
Pintail (*Anas acuta*)	A054	Red (wintering)	**Red** (wintering)
Shoveler (*Anas clypeata*)	A056	Red (wintering)	**Red** (wintering)
Pochard *(Aythya farina*)	A059	Amber (wintering)	**Red** (wintering)
Tufted Duck (*Aythta fuligula*)	A061	Amber (wintering)	**Red** (wintering)

Bird Species	Code	Status BoCCI2 2007-2013*	Status BoCCI3 2014-2019*
Scaup (*Aythya marila*)	A062	Amber (wintering)	**Amber** (wintering)
Eider (*Somateria mollissima*)	A063	Amber (breeding/wintering)	**Amber** (breeding/wintering)
Common Scoter (*Melanitta nigra*)	A065	Red (breeding)	**Red** (breeding)
Goldeneye (B*ucephala clangula*)	A067	Amber (wintering)	**Red** (wintering)
Red-breasted Merganser (*Mergus serrator*)	A069	Green (breeding/wintering)	**Green** (breeding/wintering)
Hen Harrier (*Circus cyaneus*)	A082	Amber (breeding)	**Amber** (breeding)
Merlin (*Falco columbarius*)	A098	Amber (breeding)	**Amber** (breeding)
Peregrine (*Falco peregrinus*)	A103	Green (breeding)	**Green** (breeding)
Corncrake (*Crex crex*)	A122	**Red** (breeding)	**Red** (breeding)
Coot (*Fulica atra*)	A125	**Amber** (breeding/wintering)	**Amber** (breeding/wintering)
Oystercatcher (*Haematopus ostralegus*)	A130	Amber (breeding/wintering)	**Amber** (breeding/wintering)
Ringed Plover (*Charadrius hiaticula*)	A137	Amber (wintering)	**Green** (wintering)
Golden Plover (*Pluvialis apricaria*)	A140	Red (breeding/wintering)	**Red** (breeding/wintering)
Grey Plover (*Pluvialis squatarola*)	A141	Amber(wintering)	**Amber** (wintering)
Lapwing (*Vanellus vanellus*)	A142	Red (breeding/wintering)	**Red** (breeding/wintering)
Knot (*Calidris canutus*)	A143	Red (wintering)	**Amber** (wintering)
Sanderling (*Calidris alba*)	A144	Green (wintering)	**Green** (wintering)
Purple Sandpiper (*Calidris maritima*)	A148	Green (wintering)	**Green** (wintering)
Dunlin (*Calidris alpina*)	A149	Amber (breeding/wintering)	**Red** (breeding/wintering)
Black-tailed Godwit (*Limosa limosa*)	A156	Amber (wintering)	**Amber** (wintering)
Bar-tailed Godwit (*Limosa lapponica*)	A157	Amber (wintering)	**Amber** (wintering)
Curlew (*Numenius arquata*)	A160	Red (breeding/wintering)	**Red** (breeding/wintering)
Redshank (*Tringa totanus*)	A162	Red (breeding/wintering	**Red** (breeding/wintering)
Greenshank (*Tringa nebularia*)	A164	Amber (wintering)	**Green** (wintering)
(Ruddy) Turnstone (*Arenaria interpres*)	A169	Green (wintering)	**Green** (wintering)
Black Headed Gull (*Chroicocephalus ridibundus*)	A179	Red (breeding)	**Red** (breeding)
Common Gull (*Larus canus*)	A182	Amber (breeding)	**Amber** (breeding)
Lesser Black-backed Gull (*Larus fuscus*)	A183	Amber (breeding)	**Amber** (breeding)
Herring Gull (*Larus argentatus*)	A184	Red (breeding)	**Red** (breeding)

Bird Species	Code	Status BoCCI2 2007-2013*	Status BoCCI3 2014-2019*
Kittiwake (*Rissa tridactyla*)	A188	Amber (breeding)	**Amber** (breeding)
Sandwich Tern (*Sterna sandvicensis*)	A191	Amber (breeding)	**Amber** (breeding)
Roseate Tern (*Sterna dougallii*)	A192	Amber (breeding)	**Amber** (breeding)
Common Tern (*Sterna hirundo*)	A193	Amber (breeding)	**Amber** (breeding)
Arctic Tern (*Sterna paradisaea*)	A194	Amber (breeding)	**Amber** (breeding)
Guillemot (*Uria aalge*)	A199	Amber (breeding)	**Amber** (breeding)
Razorbill (*Alca torda*)	A200	Amber (breeding)	**Amber** (breeding)
Puffin (*Fratercula arctica*)	A204	Amber (breeding)	**Amber** (breeding)
Kingfisher (*Alcedo atthis*)	A229	Amber (breeding)	**Amber** (breeding)
Chough (*Pyrrhocorax pyrrhocorax*)	A346	Amber (breeding)	**Amber** (breeding)
Greenland White-fronted Goose (*Anser albifrons flavirostric*)	A395	Amber (wintering)	**Amber** (wintering)
Wetland & Waterbirds	A999	---	---

*Taken from *Birds of Conservation Concern* Reports; BOCCI2: Lynas et. Al. (2007), BOCCI3: Colhoun and Cummins (2013).

Reference has also been made to Irelands (Birds Directive) Article 12 submission to the EU Commission on the *Status and trends of birds species (2008-2012)*[1].

[1] http://ec.europa.eu/environment/nature/knowledge/rep_birds/index_en.htm

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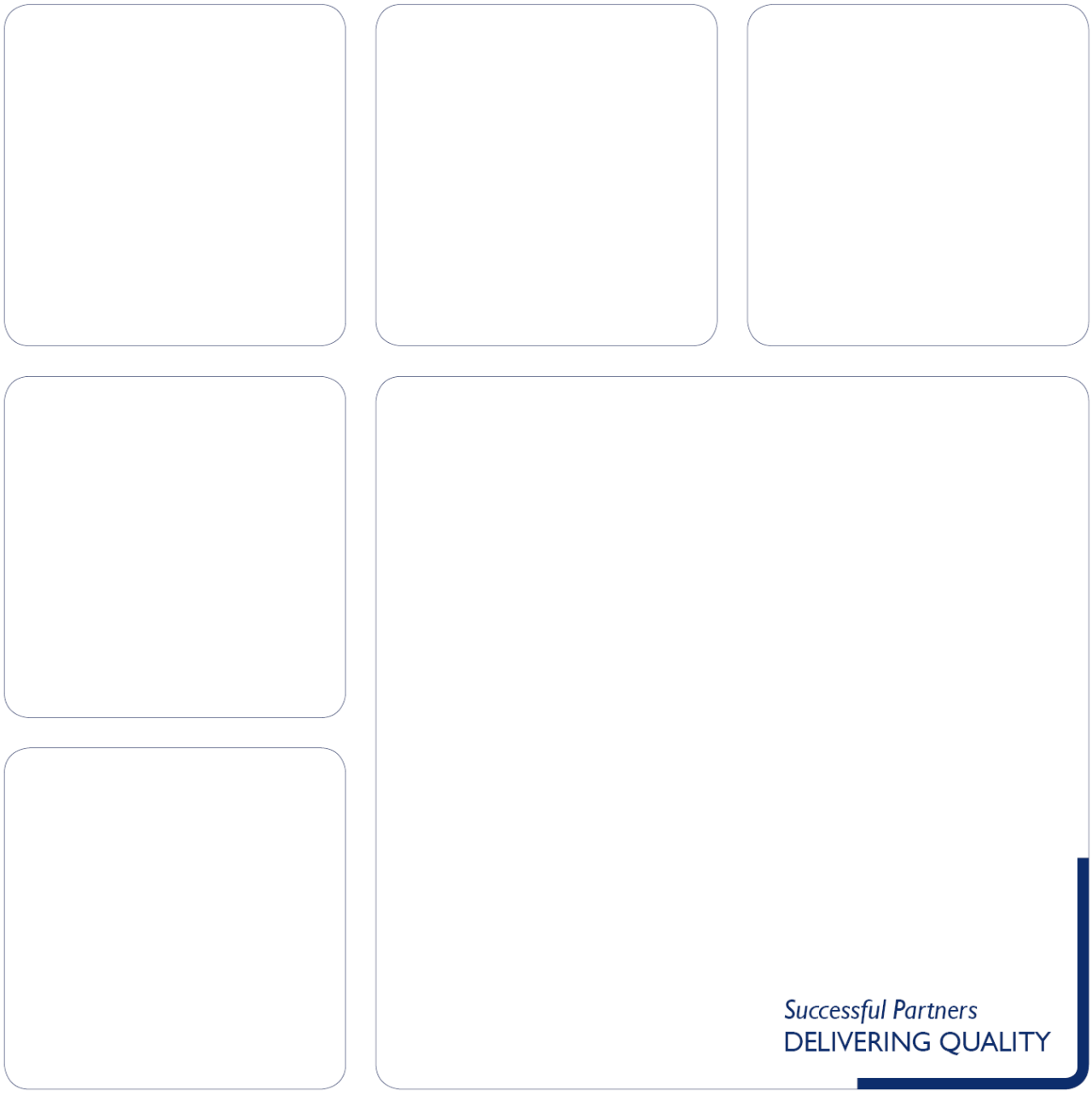
Appendix H

Generic Threats and Pressures Considered Relevant to the RBMP



Successful Partners
DELIVERING QUALITY

Code	Description
A	**Agriculture**
A01	Agricultural cultivation
A02	Modification of cultivation practices
A02.01	agricultural intensification
A02.02	crop change
A02.03	grassland removal for arable land
A06	Crops of annuals & perennials (non-timber)
A06.02	perennial non-timber crops
A06.02.01	intensive perennial non-timber crops/intensification
A06.02.02	non-intensive perennial non-timber crops
A06.03	biofuel-production
A07	Use of 'pesticides' in agriculture
A08	Fertilisation in agriculture
A09	Irrigation in agriculture
A10	Restructuring agricultural parcels
A11	Other agriculture activities
B	**Forestry**
B01	Afforestation
B01.01	forest planting on open ground (native trees)
B01.02	artificial planting on open ground (non-native trees)
B02	Forest and plantation management & use
B02.01	forest replanting
B02.01.01	forest replanting (native trees)
B02.01.02	forest replanting (non native trees)
B02.02	forestry clearance
B02.03	removal of forest undergrowth
B02.04	removal of dead and dying trees
B02.05	non- intensive timber production (leaving dead wood/ old trees untouched)
B02.06	thinning of tree layer
B03	Forest exploitation
B04	Use of 'pesticides' (forestry)
B05	Use of fertilizers (forestry)
B06	Grazing in forests & woodland
B07	Other forestry activities
C	**Mining, quarrying & energy production**
C01	Mining and quarrying
C01.03	Peat extraction
C01.03.01	hand cutting of peat
C01.03.02	mechanical removal of peat
C01.06	Geotechnical survey
C01.07	Mining and extraction activities not referred to above
C02	Oil and gas exploitation
C02.01	exploration drilling
C02.02	production drilling

Code	Description
C02.03	jack-up drilling rig
C02.04	semi-submersible rig
C02.05	drill ship
C03	Production of renewable energy (abiotic)
C03.01	geothermal power production
C03.02	solar energy production
C03.03	wind energy production
C03.04	tidal energy production
D	**Transportation & service infrastructure**
D02	Utility and service lines/pipelines
D02.01	electricity and phone lines
D02.01.01	suspended electricity and phone lines
D02.01.02	underground/submerged electricity and phone lines
D02.02	pipe lines
D02.09	other forms of energy transport
D06	Other transportation & service infrastructure
E	**Urbanisation, residential & commercial development**
E01	Urbanisation and human habitation
E02	Industrial or commercial areas
E03	Discharges (household/industrial)
E03.02	disposal of industrial waste
E03.03	disposal of inert materials
E03.04	Other discharges
E04	Scattered structures and buildings
E05	Storage of materials
E06	Other urban/industrial developments
E06.01	demolishment of buildings & human structures
E06.02	reconstruction, renovation of buildings
G	**Disturbances due to human activities**
G05	Other human intrusions and disturbances
G05.02	shallow surface abrasion/ mechanical damage to seabed surface
G05.03	penetration/ disturbance below surface of the seabed
G05.11	death or injury by collision
F	**Biological resource other than agriculture & forestry**
F01	Marine and Freshwater Aquaculture
F01.01	intensive fish farming, intensification
F01.02	suspension culture
F01.03	bottom culture
F02	Fishing and harvesting aquatic ressources
F02.01	Professional passive fishing
F02.01.01	potting
F02.01.02	netting
H	**Pollution**

Code	Description
H01	Pollution to surface waters
H01.01	pollution to surface waters by industrial plants
H01.05	diffuse pollution to surface waters due to agricultural and forestry activities
H01.06	diffuse pollution to surface waters due to transport and infrastructure without connection to canalization/sweepers
H02	Pollution to groundwater
H02.01	groundwater pollution by leakages from contaminated sites
H02.02	groundwater pollution by leakages from waste disposal sites
H02.03	groundwater pollution associated with oil industry infrastructure
H02.04	groundwater pollution by mine water discharges
H02.05	groundwater pollution by discharge to ground such as disposal of contaminated water to soakaways
H02.06	diffuse groundwater pollution due to agricultural and forestry activities
H03	Pollution to marine waters
H03.01	oil spills in the sea
H03.02.01	non-synthetic compound contamination
H03.02.02	synthetic compound contamination
H03.02.04	introduction of other substances (e.g. liquid, gas)
H04	Air pollution, air-borne pollutants
H04.01	Acid rain
H04.02	Nitrogen-input
H04.03	other air pollution
H05	Soil pollution and solid waste (excl. discharges)
H06	Excess energy (noise, light, heating, electromagnetic)
H06.01	Noise nuisance, noise pollution
H06.01.01	point source or irregular noise pollution
H06.01.02	diffuse or permanent noise pollution
H06.02	Light pollution
H06.03	Thermal heating of water bodies
H06.04	Electromagnetic changes
H06.05	Seismic exploration, explosions
H07	Other forms of pollution
I	**Invasive and introduced species**
J	**Modification of natural conditions**
J02	Changes in water bodies conditions
J02.01.04	recultivation of mining areas
J02.02	Removal of sediments (mud...)
J02.02.01	dredging/ removal of limnic sediments
J02.02.02	estuarine and coastal dredging
J02.03	Canalisation & water deviation

Code	Description
J02.03.01	large scale water deviation
J02.03.02	canalisation
J02.05	Modification of hydrographic functioning, general
J02.05.01	modification of water flow (tidal & marine currents)
J02.05.02	modifying structures of inland water courses
J02.05.03	modification of standing water bodies
J02.05.04	reservoirs
J02.05.05	small hydropower projects, weirs
J02.05.06	wave exposure changes
J02.06	Water abstractions from surface waters
J02.06.01	surface water abstractions for agriculture
J02.06.04	surface water abstractions for the production of electricity (cooling)
J02.06.06	surface water abstractions by hydro-energy
J02.06.07	surface water abstractions by quarries/ open cast (coal) sites
J02.07	Water abstractions from groundwater
J02.07.01	groundwater abstractions for agriculture
J02.07.03	groundwater abstractions by industry
J02.07.04	groundwater abstractions by quarries/open cast (coal)sites
J02.08	Raising the groundwater table /artificial recharge of groundwater
J02.08.01	discharges to groundwater for artificial recharge purposes
J02.08.03	mine water rebound
J02.08.04	other major groundwater recharge
J02.11	Siltation rate changes, dumping, depositing of dredged deposits
J02.11.01	Dumping, depositing of dredged deposits
J02.11.02	Other siltation rate changes
J02.15	Other human induced changes in hydraulic conditions
J03	Other changes to ecosystems
J03.01	reduction or loss of specific habitat features
J03.01.01	reduction of prey availability (including carcasses)
J03.02	anthropogenic reduction of habitat connectivity
J03.02.01	reduction in migration/ migration barriers
J03.02.02	reduction in dispersal
J03.02.03	reduction in genetic exchange
J03.03	reduction, lack or prevention of erosion
J03.04	applied (industrial) destructive research
M	**Climate change**
M01	Abiotic changes (climate change)
M01.01	temperature changes (e.g. rise of temperature & extremes)
M01.02	droughts and less precipitations
M01.03	flooding and rising precipitations
M01.04	pH-changes

Code	Description
M01.05	water flow changes (limnic, tidal and oceanic)
M01.06	wave exposure changes
M01.07	sea-level changes
M02	Biotic changes (climate change)
M02.01	habitat shifting and alteration
M02.02	desynchronisation of processes
M02.03	decline or extinction of species
M02.04	migration of species (natural newcomers)

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Appendix I

NPWS List of water dependent habitats and species

Successful Partners
DELIVERING QUALITY

Water Dependent Habitats Directive Annex I Habitats. Updated December 2015

HD Habitat Code	Habitat Name	Water supplies to the habitat			Type of Habitat		
		Surface Water Dependent	Ground-water Dependent	Marine Water Dependent	Surface Waterbody	GWDTE	Other
1110	Sandbanks which are slightly covered by sea water all the time			Yes	Coastal		
1130	Estuaries	Yes		Yes	Transitional		
1140	Mudflats and sandflats not covered by seawater at low tide			Yes	Coastal		
1150	Coastal lagoons	Yes	Yes	Yes	Transitional		
1160	Large shallow inlets and bays	Yes		Yes	Coastal?		
1170	Reefs			Yes	Coastal?		
1210	Annual vegetation of drift lines			Yes			Coastal terrestrial
1220	Perennial vegetation of stony banks			Yes			Coastal terrestrial
1230	Vegetated sea cliffs of the Atlantic and Baltic coasts						Coastal terrestrial
1310	*Salicornia* and other annuals colonizing mud and sand			Yes			Intertidal
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)		Yes	Yes			Intertidal
1410	Mediterranean salt meadows (Juncetalia maritimi)		Yes	Yes			Intertidal
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)			Yes			Intertidal
2110	Embryonic shifting dunes						Coastal terrestrial
2120	Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)						Coastal terrestrial
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)						Coastal terrestrial
2140	Decalcified fixed dunes with *Empetrum nigrum*						Coastal terrestrial
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)						Coastal terrestrial

HD Habitat Code	Habitat Name	Water supplies to the habitat			Type of Habitat		
		Surface Water Dependent	Ground-water Dependent	Marine Water Dependent	Surface Waterbody	GWDTE	Other
2170	Dunes with *Salix repens ssp. argentea* (Salix arenariae)		Yes			Yes	
2190	Humid dune slacks		Yes	Yes		Yes	
21A0	Machairs (* in Ireland)	Yes	Yes			Yes	
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	Yes	Yes		Lakes		
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	Yes	Yes		Lakes		
3140	Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.	Yes	Yes		Lakes		
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation	Yes	Yes		Lakes		
3160	Natural dystrophic lakes and ponds	Yes	Yes		Lakes		
3180	Turloughs	Yes	Yes			Yes	
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	Yes	Yes		Rivers		
3270	Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation	Yes	Yes			Yes	
4010	Northern Atlantic wet heaths with *Erica tetralix* (FLUSHES ONLY)		Yes			Yes	
6410	*Molinia* meadows on calcareous, peaty or clavey-silt-laden soils (Molinion caeruleae)	?	Yes			Yes	
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	Yes	Yes			Yes	
7110	Active raised bogs (LAGG ONLY)	Yes	Yes			Yes	
7120	Degraded raised bogs still capable of natural regeneration (LAGG ONLY)	Yes	Yes			Yes	
7130	Blanket bog (*active only) (FLUSHES ONLY)		Yes			Yes	
7140	Transition mires and quaking bogs	Yes	Yes			Yes	
7150	Depressions on peat substrates of the Rhynchosporion	Yes	Yes			Yes	
7210	Calcareous fens with *Cladium mariscus* and species of the Caricion davallianae		Yes			Yes	

HD Habitat Code	Habitat Name	Water supplies to the habitat			Type of Habitat		
		Surface Water Dependent	Ground-water Dependent	Marine Water Dependent	Surface Waterbody	GWDTE	Other
7220	Petrifying springs with tufa formation (Cratoneurion)		Yes			Yes[1]	
7230	Alkaline fens		Yes			Yes	
8310	Caves not open to the public		Yes			Yes	
8330	Submerged or partly submerged sea caves			Yes	Coastal?		
91D0	Bog woodland		Yes			Yes	
91E0	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)	Yes	Yes			Yes	

[1] Typically a spring or seepage feature of terrestrial habitats, but sometimes can be found in streams or rivers

Water Dependent Habitats Directive Annex II Species. Updated December 2015

HD Species Code	Species name	Common name	Surface Water Dependent	Ground-water Dependent	Marine Water Dependent	Found in Surface Waterbody	Found in GWDTE	Comment
1013	*Vertigo geyeri*	whorl snail		Yes			Yes	
1014	*Vertigo angustior*	whorl snail		Yes			Yes	
1016	*Vertigo moulinsiana*	whorl snail	Yes	Yes			Yes	
1029	*Margaritifera margaritifera*	freshwater pearl mussel	Yes			Yes		Rivers, some lakes
1065	*Euphydryas aurinia*	marsh fritillary					Yes	Also found in peatland & wet grassland, i.e. in some non-water dependent habitats
1092	*Austropotamobius pallipes*	white-clawed crayfish	Yes	Yes		Yes		Rivers and Lakes
1095	*Petromyzon marinus*	sea lamprey	Yes		Yes	Yes		Rivers mainly, some lakes
1096	*Lampetra planeri*	brook lamprey	Yes			Yes		Rivers mainly
1099	*Lampetra fluviatilis*	river lamprey	Yes			Yes		Rivers mainly
1103	*Alosa fallax*	twaite shad	Yes		Yes	Yes		Tidal stretches of rivers, estuaries
1106	*Salmo salar*	Atlantic salmon	Yes		Yes	Yes		Rivers mainly
1349	*Tursiops truncatus*	bottle-nosed dolphin			Yes	Yes		Coastal water bodies
1351	*Phocoena phocoena*	harbour porpoise			Yes	Yes		Coastal and transitional water bodies
1355	*Lutra lutra*	otter	Yes		Yes	Yes		Rivers, lakes and coastal and transitional water bodies
1364	*Halichoerus grypus*	grey seal			Yes	Yes		Coastal and transitional water bodies
1365	*Phoca vitulina*	common seal			Yes	Yes		Coastal and transitional water bodies
1393	*Drepanocladus vernicosus*	shining sickle moss		Yes			Yes	
1395	*Petalophyllum ralfsii*	petalwort		Yes			Yes	
1421	*Trichomanes speciosum*	Killarney fern	Yes			Yes		Splash zones of streams and rivers, but also found in other areas of high humidity, such as

HD Species Code	Species name	Common name	Surface Water Dependent	Ground-water Dependent	Marine Water Dependent	Found in Surface Waterbody	Found in GWDTE	Comment
								crevices in rocky slopes, in woodlands or areas with surface water seepages/runs.
1528	*Saxifraga hirculus*	yellow marsh saxifrage		Yes			Yes	
1833	*Najas flexilis*	slender naiad	Yes			Yes		Lakes
1990	*Margaritifera durrovensis*	Nore pearl mussel	Yes			Yes		River