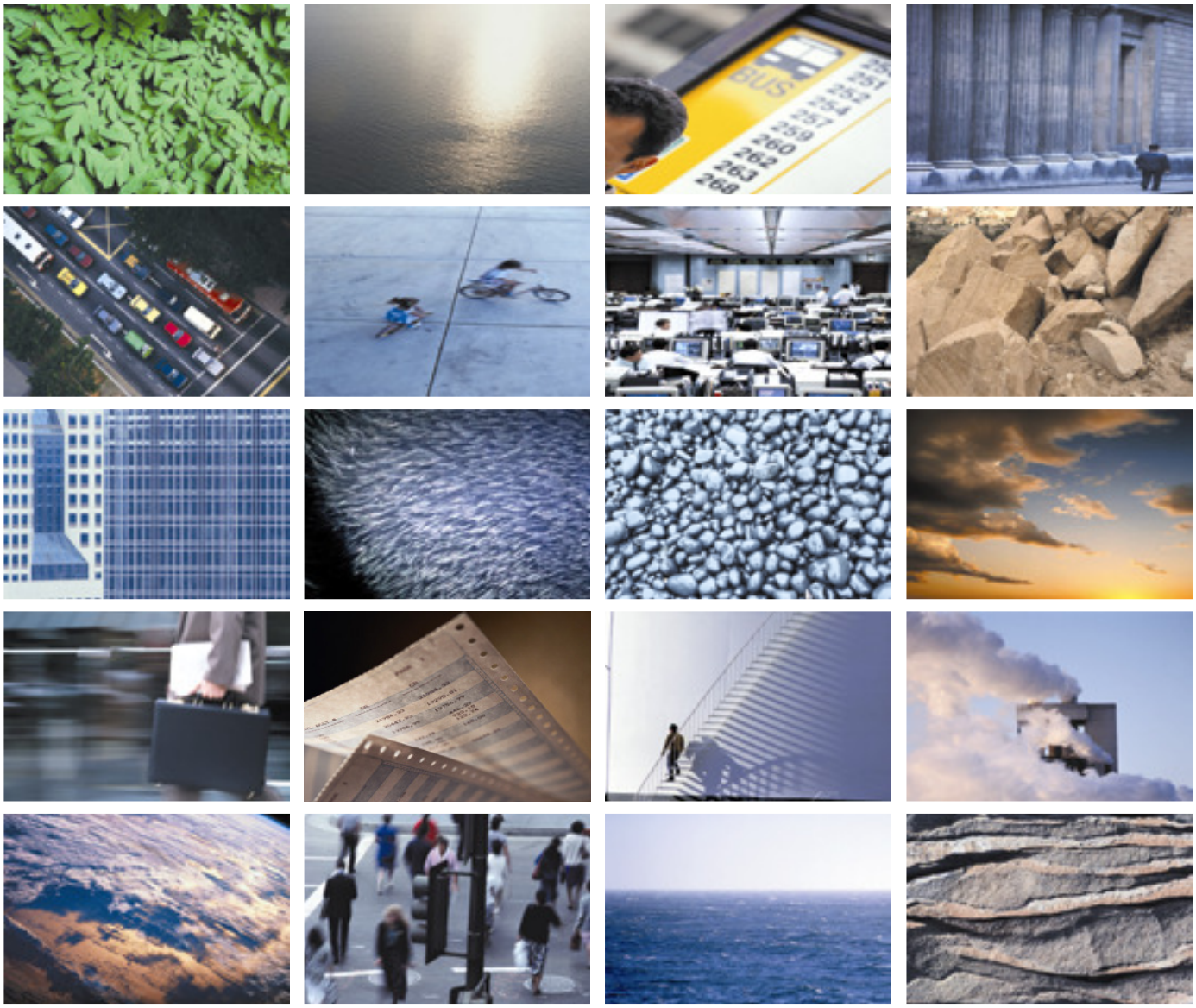

Irish National Seafood Plan

Environmental Report

October 2008

Prepared for an on behalf of ***Bord Iascaigh Mhara***

Bord Iascaigh Mhara
Irish Sea Fisheries Board

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Bord Iascaigh Mhara (BIM)

Irish National Seafood Plan:

Environmental Report

October 2008

Reference 0088582

Prepared by: Olan Howell & Peter Wright

For and on behalf of
Environmental Resources Management

Approved by: **Alistair Davison**

Signed:

Position: **Partner**

Date: **30th September 2008**

Introduction

ERM Environmental Resources Management Ireland Ltd. (ERM Ireland) was commissioned in July 2008 by *Bord Iascaigh Mhara* (BIM) to undertake a Strategic Environmental Assessment (SEA) of the National Seafood Plan.

ERM have been previous commissioned in 2007 by BIM to undertake an SEA of the Irish-EC Co-Funded Seafood OP 2007 - 2013. The difference between this previous OP and the National Seafood Plan currently being assessed though the SEA process is that the current National Seafood Plan is totally financed by the Irish Government whereas the previous OP was co-funded by the EU.

The requirement to prepare a National Seafood Plan arose from amendments made to the Irish-EC Co-Funded Seafood OP: these amendments resulted in elements of the Co-Funded OP being re-located to the National Seafood Plan. the reason for the revisions to the Co-funded Seafood OP are that the EU only wanted co-funded measures in that Plan: all non co-funded elements (termed measures) were to be addressed in a separate Plan.

This part of the Environmental Report is the Non-Technical Summary (NTS), which summarises the key points of the Environmental Report, the key document in the SEA process.

The legal context of SEA is Directive 2001/41/EC, which provides for the assessment of the effects of certain plans and programmes on the environment ("SEA Directive") came into force in Ireland on 21st July 2004. The Directive applies to plans and programmes for which the first formal preparatory action is taken on or after 21 July 2004. The relevant Irish Regulation is European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. 435 of 2004). Further information on the SEA process can be found in *Section 3* of the Environmental Report.

National Seafood Plan

The overall objective of the National Seafood Plan is to produce a sustainable, profitable, competitive and market-focused seafood industry. The National Seafood Plan is seeking to make the maximum, long-term, economic and social contribution to coastal communities and Ireland as a whole. The purpose of the National Seafood Plan is to provide a framework and conduit for funding into initiatives aimed at supporting and promoting a sustainable future for the Irish Seafood industry.

The National Seafood Plan is produced by Bord Iascaigh Mhara (BIM) who is the State Agency preparing the Irish Seafood OP, on behalf of the Department of Agriculture, Fisheries and Food (DAFF).

The structure and content of the National Seafood Plan is guided and informed by a series of EU and national-level sectoral plans, as well as a range of EU and national environmental legislation. The EU and national-level sectoral legislation, policies, plans and programmes are:

1. European Fisheries fund (EC No 1198/2006);
2. National Strategic Plan;
3. Irish-EC Co-Funded Seafood OP;
4. Outcomes of the ex-ante evaluation (referred to in Article 48 of Regulation (EC) No. 1198/2006) of the Irish-EC Co-Funded Seafood OP; and
5. Other environmental protection instruments.

Further information on these other, more strategic, plans and programmes can be found in *Section 2.2* of the Environmental Report.

There are thirteen measures which comprise the National Seafood Plan. Effectively, the measures define a series of objectives of that the National Seafood Plan is trying to achieve. Each of the measures comprises a number of Schemes. *Table 1* below sets out the thirteen Measures and each of their Schemes.

Table 1 13 Measures of the National Seafood Plan

Measure	Scheme
1. Market Research	Seafood Market Research
	Functional Food Market Research
2. Market Development & Promotion	Export Market Development
	Domestic Market Development
3. Innovation Support	Performance Improvement
	Innovation & Technology Transfer
	Quality & Environment
	Pelagic Development
4. Step-Up Development	Business Investment
	Collective Investment
5. Market Investment	Business Investment
	Collective Investment
6. Competitiveness & Performance	Business Options
	Performance Improvement
	Innovation & R&D
	Technology Transfer

Measure	Scheme
	Strategic Alliances & Partnerships
7. Fleet Restructuring	Fleet Decommissioning
	Vessel safety and fuel efficiency
	Inshore Diversification
8. Aquaculture Industry Development	Modernisation and expansion of small scale investment projects in aquaculture
	Development of new species, technology and sites for aquaculture
	Development of handling facilities for quality, hygiene & efficiency
	Development and modernisation of small and medium sized aquaculture enterprises
9. Social & Economic Development (Fisheries)	Human Skills Development
	Infrastructure Development
	Product Development & Innovation
10. Socio-Economic Sustainability (Aquaculture)	Other Sustainability Measures
	Establishment of Depuration and relaying facilities for live bivalve molluscs
	Regional development programmes for coastal fishing areas
	Re-establishing productive potential of aquaculture due to natural or industrial disasters
	Peace and transnational co-operation
11. Marine Environment Protection (Fisheries)	Environmentally Friendly Fishing Gear
	Collective Actions for Sea Fisheries
	Technical Research Partnership
	Waste Management
	Technical Innovation
12. Marine Environment Protection & QA (Aquaculture)	Development and Implementation of Quality Assurance Programmes for Aquaculture Product Scheme
	Development and Implementation of Environmental Management Programmes for Aquaculture Production Scheme
	Regional Delivery Programme for Aquaculture Development Scheme
	CLAMS and aquaculture communications programme
	Pre-commercialisation Technology Transfer
13. Seafood Industry Training	Improving Professional Skills & Safety Training
	Aquaculture Production Lifelong learning
	Measures of Common Interest – upgrade professional skills

Source: BIM (2008)

Further information on the detail of the Irish Seafood OP can be found in *Section 2.3* of the Environmental Report.

Relevant environmental protection objectives

The SEA Regulations require a description of "the environmental protection objectives, established at international, European Union or national level, which are relevant to the plan or programme, or modification to a plan or programme, and the way those objectives and any environmental considerations have been taken into account during its preparation". Regarding the Seafood OP, these are:

- EU sustainability Development Strategy;
- Common Fisheries Policy;
- OSPAR Convention;
- Convention on Biological Diversity;
- National Biodiversity Plan;
- Water Framework Directive (2000/60/EC);
- Urban Waste Water Treatment Directive
- EU Birds Directive (Council Directive 79/409/EEC);
- EU Habitats Directive (Council Directive 92/43/EEC);
- ISO 14,000 Environmental Management series.
- European Union Eco-Management and Audit Scheme (EMAS)
- SEA Directive (& associated Regulations);
- EIA Directive (& associated Regulations); and
- Aquaculture (Licence Application)(Amendment) Regulations 2006.

Details of the above environmental protection instruments can be found in *Section 2.2.7* of the Environmental Report.

Alternatives considered

The consideration of Alternatives is an important part of SEA. The consideration of alternative ways to achieve a plan or programme's objectives can often result in a minimisation of negative environmental impacts. There is a limited scope of the consideration of alternatives as the scope and requirements of the Seafood OP are defined and guided by European Fisheries Fund (EFF) (Council Regulation No. 1198/2006). Thus, measures in the OP are pre-defined in their scope and specific objectives (*Table 2.1*). The implication of this for the consideration of alternatives is that the OP cannot consider priorities which are outside eligible EU funding areas and criteria.

In determining the detail and the specifics of the interventions which are included in the OP, significant attempts were made to ensure that environmental considerations were included, where possible. Furthermore, the implementation of the OP and its associated intervention has considerable scope for the consideration of alternatives through careful selection of various funding applications and the development of individual projects.

Scoping consultation

Scoping is a key stage in the SEA process and is where the key issues to be addressed in the environmental report are determined. The purpose of scoping is also to determine the level of detail, to be considered in the Environmental Report and the SEA methodology.

The SEA scoping methodology ERM undertook was to outline the environmental issues in a SEA Scoping Report and then consult with the designated environmental authorities (in Ireland) and agencies in Northern Ireland (transboundary consultations). In all consultation-cases, consultees were invited to make submissions on the Scoping Report and a four-week period was allowed for.

The designated environmental authorities (as defined in the Irish Regulation S.I. 435 of 2004) in Ireland who were consulted were:

- Environmental Protection Agency (EPA);
- Department of Environment, Heritage and Local Government (DEHLG); and
- Department of Communications, Energy and Natural Resources (DCENR); formerly DCMNR (Department of Communications, Marine and Natural Resources).

Transboundary scoping consultation was undertaken with three agencies in Northern Ireland. The NI agencies to whom the Scoping Report was submitted to was:

- Northern Ireland Environment Agency (NIEA): SEA Section;
- Department of Agriculture & rural Development (DARD); and
- Loughs Agency.

A four week transboundary consultation period was provided for, which concluded on Friday 12th September 2008.

Responses were received form the EPA and NIEA. All responses were considered and appropriate responses prepared. These were outlined in *Section 4* of the Environmental Report.

Description of the existing environment and identification of existing environmental problems relevant to the Seafood OP

Baseline environmental information is provided in *Section 5* of the Environmental Report. *Table 2* provides a short summary of the key baseline environmental issues.

Table 2 ***Summary of baseline environmental issues and environmental problems relevant to the National Seafood Plan***

Environmental topic	Summary of baseline issues
Biodiversity, flora and fauna	**Fish stock levels:** In 2004, an estimated 1.5 million tonnes of fish were harvested from Irish waters. However, over 75% of fish stocks in these waters are outside safe biological limits (i.e. at low stock size or unsustainable levels of exploitation). General trends in fish stocks show that over the period 1999-2003, all significantly fished pelagic (open water fish species) and demersal (bottom-dwelling species) stocks showed decreases (apart from mackerel). Pressure on the marine environment is exacerbated by the non-commercial fish and undersized commercial fish being discarded when brought up with the target fish species. Discarding is largely a repercussion of the management measures in place (in particular TACs and quotas), fishermen must discard so that they land only the species for which they have quotas. Data on the rate and volume of discards is limited. The International Council for Exploration of the Seas notes that North Sea discards corresponds to approximately 22% of total North Sea landings. **Designated sites:** Ireland has formally advertised 424 such conservation sites as proposed candidate SACs (pcSACs), of which 410 have been transmitted and formally adopted by the EU as candidate SACs (cSACs). The remaining 14 pcSACs are either only recently advertised (marine offshore sites) or under appeal (as part of the site designation process) (EPA 2006). Ireland has designated 128 sites as SPAs. An additional seven advertised sites are awaiting formal designation. Of the 59 designated habitat-types (covering all habitats, not just those relevant to the OP), over 45% are classified at being in a bad condition, with an additional 45% being in an inadequate overall state. **Benthic monitoring:** Based on reports submitted by license holders to the former DCMNR (now DAFF), all the sites which reported were fully compliant. However, the level of reporting covers only 66% of the active aquaculture sites in Ireland (an improvement on previous years). The Marine Institute carried out audits at two sites to verify the findings, which the audit confirmed. Non-reporting is due to the fact that some older licenses do not have a monitoring requirement as a licensing condition. In addition when sites are in fallow, the operators often choose not to incur the expense of monitoring as there are no fish. **Sea lice:** There is a national inspection scheme monitoring the average number of ovigerous female sea lice per fish. In 2007 the overall level of inspections for which results were below the trigger levels was 70.03%. This rate of meeting the trigger standard has progressively fallen ('04: 79.5%, '03: 80.7%, '02: 87%, '01: 91%) and the reasons for this are thought to be a combination of increasing infestation pressure because of the higher seawater winter temperatures allowing a greater number of lice to overwinter and increasing difficulty in carrying out effective treatments due to other issues, such as resistance and problems with fish health.

Environmental topic	Summary of baseline issues
Population	Fishing, aquaculture and seafood process activities are primarily based in rural and coastal communities. Thus, the sector provides a vital source of employment in these communities. Fishing activities and seafood processing is concentrated in coastal Counties such as Donegal, Galway, Cork, Kerry, Waterford, Wexford, and Dublin. Ports such as Killybegs (Donegal), Castletownbere (Cork), Dunmore East (Waterford), Rosseveal (Galway), Dingle (Kerry) and their hinterlands are heavily dependent on the seafood processing and services industries. Aquaculture activities are concentrated at coastal locations in Kerry, Cork, Clare, Galway, Mayo, Sligo, Donegal, Louth, Wexford and Waterford. Due to the poor state of most commercial fish stocks landings of the Irish Fleet have been declining in most areas for many years, consequently employment in fishing and related industries has declined. In 1996, there were 2,892 people in Ireland employed in fishing and related works (this does not include aquaculture and seafood processing employment). This fell by almost 26% to 2,142 in 2002 (employment data from Census 2006 was not available at the time of writing). The fall off the fishing and related employment has been somewhat off-set by the increase in the aquaculture industry. Fisheries-related employment pays considerable less than the national average income. Using average earning levels, the national earnings average in Ireland in 2003 was €35,411 (index level = 100), whereas the average income from fisheries was €21,163 (index level = 60), 40% lower than the national income average. Income from fishing was an average of €9,500 (index level = 27). While income from the fisheries sector is considerably lower than Ireland's average income, the sector still provides valuable employment for remote and isolated populations where there is limited alternative employment available.
Human Health	**Microbiological classification of shellfish:** In 2005, 30% of sites were Class A (can be consumed directly), compared to 23% the previous year. However, in 1991 - 1994, 55% of sites were Class A. No class C (can be consumed following relaying for at least two months) sites were reported in 2005. The EPA notes that "overall, Ireland has a proactive approach to the protection of health through monitoring of shellfish waters, but the general decline in class A stocks since 1994 is a cause for concern". Causes of the decline in shellfish quality can usually be attributed to pollution of waters from anthropogenic sources, such as inadequate treatment of wastewater effluent. **Shellfish monitoring:** Annual monitoring data for contaminants in shellfish is undertaken annually by the Marine Institute. During 2005, shellfish samples were taken at 36 locations and analysis was undertaken for metals. Results show that all shellfish samples tested for mercury and lead were well within the standard value limit, set by the European Commission. All samples were within the cadmium limit. No specific area growing shellfish stood out with regards to having elevated levels of zinc, chromium, silver or nickel. However, compliance was not complete with regards to pH and dissolved oxygen. **Designated shellfish areas:** There are currently 14 designated shellfish areas in Ireland. For each of these areas, an action programme is established to ensure good water quality with a view to ensuing good quality production of shellfish food. An additional 54 shellfish water across all the major bays in Ireland are currently undergoing designation.

Environmental topic	Summary of baseline issues
Water	**Water Framework Directive data:** Data relating to the status of Ireland's coastal and transitional water bodies was obtained. The majority of coastal and transitional water bodies are not classed as being 'at risk' of meeting future Water Framework Directive requirements, although six coastal areas were identified as potentially being at risk. Data regarding nutrient loading was obtained. On a national-basis, aquaculture accounts for 0.1% of the total nitrogen input, and 0.3% of the phosphate input
Material assets	**Ireland's polyvalent fishing fleet:** As of September 2007, Ireland has a total of 1,889 vessels, consisting of 66,019 gross tonnes. In excess of 65% of these vessels were inshore vessels, of less than 12m in length.

Identification of likely significant effects on the environment

A series of Environmental Objectives were developed to identify the likely significant effects on the environmental result of the implementation of the National Seafood Plan. These Environmental Objectives were presented in the Scoping Report and comment was invited on them from statutory consultees in Ireland and Northern Ireland (Scoping Consultation: see above). Each of the 13 measures was tested/assessed against the various Environmental Objectives. The results were classified into major (significant) and minor positive impacts; neutral; and minor and major (significant) negative. In some cases, insufficient detail in the National Seafood Plan was available to allow an assessment to be made. However, it should be noted that this is often due to the fact that the OP is a high-level, strategic programme aimed at facilitating further, more specific and often site-based actions. It should be noted that the National Seafood Plan is only focused on a limited portion of Ireland's overall seafood industry and that the National Seafood Plan can only focus on a limited set of fishery measures in relation to the interventions specified in *Table 1* above. The assessment results below should not be taken to be a wider or global assessment of all of the various seafood sector and related activities which are undertaken in Ireland.

A summary of the assessment is provided below. Further detail on the assessment can be found in *Section 6* of the Environmental Report.

Under **biodiversity and flora and fauna**, predominately minor positive are predicted. However, regarding the Aquaculture Measure, neutral to potentially negative effects are predicted for the Aquaculture Measure in relation to biodiversity and flora and fauna. The basis for this assessment is that the increase in total production from aquaculture and an increase in areas utilised for aquaculture has the potential to have some minor negative effects on the environment; although it is too early in the National Seafood Plan implementation programme to determine this issue.

The National Seafood Plan is predicted to have minor to some major positive effects under **population**, which, in the context of the National Seafood Plan,

is defined as rural community and coastal-based populations. Such areas have higher than average unemployment and offer limited job and economic opportunities. The National Seafood Plan will greatly increase these population's quality of life and future economic prospects.

Regarding **human health**, major positive effects are predicted for three Measures (Fleet restructuring, Aquaculture and Seafood Training) as these will greatly increase health and safety investment and knowledge in the wider seafisheries community and sector. Minor positive effects are predicted for other Measures.

Under **soil**, neutral effects are predicted under the Marine Environmental Protection Measure. It should be noted that the biological aspect of soil (i.e. the benthic environment) is addressed under biodiversity, flora and fauna.

Minor positive impacts are predicted for **water** under the majority of Measures, similar to that of biodiversity, flora and fauna. Neutral to minor negative effects are predicted under the Aquaculture Measure. A key consideration is future higher water quality requirements as a consequence of the Shellfish Waters Directive and the Water Framework Directive.

Minor positive and neutral effects are predicted under **air and climate**.

Minor positive effects under **material assets** are predicted as the reductions in the fishing fleet will reduce the amount of boats, all of whom are trying to operate within catch constraints. Thus, the economic yields and conditions for the remaining boars will be improved. However some short-term negative effects will arise for those vessels which are decommissioned. Major positive effects are predicted under Seafood Training Measure given the large investment in training and knowledge sharing across the seafisheries community.

Neutral to minor negative effects are predicted for **landscape** and **cultural heritage** under the Aquaculture and Socio-Economic Sustainability Measure.

Mitigation measures

Mitigation measures are proposed below to address any likely negative effects as a result of the implementation of the National Seafood Plan. These are:

- The Water Framework Directive requires the preparation of RBMPs and PoMs for all the identified River Basin Districts (RBDs) within the island of Ireland and these RBMP are to be in place by December 2009. It is recommended that any recommendations in these RBMP and PoMs are fully considered by BIM and other interested parties. It is also recommended that the individual CLAMS Groups specifically consider information in the various WFD Catchment Reports, especially the risk assessment information and data. This mitigation

measure will enhance the effectiveness and the potential for positive cumulative impacts with other plans and programmes (*Section 6.12*).

- BIM shall put in place a systematic and transparent scheme implementation assessment and monitoring protocol. The objective of this scheme implementation protocol is to ensure that the implementation of the various schemes (through which the various measures are to be implemented) and projects (where relevant) will be assessed for potential significant environmental effects. Where negative effects are thought to arise, BIM will examine the scheme and amend so as to reduce the potential for negative effects. The proposed mechanism for this protocol is summarised in *Table 7.1* below. This protocol is based on the one developed as part of the Co-funded Seafood OP following the conclusion of the public consultation stage of that SEA. A key aspect of this 'lower-tier' assessment is that is will be more focused on environmental effects of implementing the National Seafood Plan at a point in the future when the potential effects can be determined with a greater degree of accuracy and knowledge.

- BIM is also confirming its awareness and commitment to the various site-specific assessment and consent protocols that are in existence. These are wider legislative and legal procedures (e.g. planning permission, aquaculture licensing, EIA, appropriate assessment, IPC licensing etc.) which will apply to the future activities which may arise from the National Seafood Plan, such as additional/new aquaculture activities or new sites for aquaculture processing. Through the application of these procedures (by agencies and authorities outside of BIM, such as a local planning authority or a Government department), the majority of the negative effects predicted for the Aquaculture Measure and the Social and Economic Sustainability Measure will not arise.

- BIM are assisting DAFF in the development of a site-specific Appropriate Assessment protocol for aquaculture licensing. Such a tool is essential in ensuring that potential site-specific impacts of aquaculture activities are addressed at this appropriate level. An established working group comprising BIM DAFF, MI and NPWS officials are compiling and testing the appropriate assessment protocol and it is anticipated that the group will continue to be convened for ongoing and regular review of the process; if new data becomes available to inform assessments; or new practices are recommended that will improve the overall effectiveness of the assessment procedure. This mitigation measure will assist and enhance the effectiveness of the site-specific AA (required as part of the aquaculture licensing process) in minimising impacts from site-based aquaculture operations.

Monitoring

Monitoring of the environmental effects of the implementation of the Seafood OP is a requirement under the SEA Regulations. The purpose of monitoring is to determine if unforeseen effects have arisen during the implementation of the OP and to take remedial action, if required. BIM, as the plan-making authority, is responsible for this monitoring programme (although BIM is not responsible for generating the monitoring data or undertaking specialist studies to supplement the existing data, unless BIM is listed as a source for the data in *Table 3* below).

It is recommended that the SEA-related monitoring be tied-in with the monitoring of the implementation of the Seafood OP. It is proposed that SEA monitoring results are presented in the Annual Implementation Report of the Seafood OP. Note that it is the authorities with responsibility for the data sources (such as the DAFF or DTM, Marine Institute, EPA, local authorities etc.) to provide up-to-date data. The only responsibility for BIM is to obtain the latest data from these sources and present the results, and comment on emerging trends, in its Annual Implementation Report.

Table 3 *Irish National Seafood Plan SEA monitoring programme*

Environmental topic	Measure	Monitoring requirement	Source
Material assets	Fleet restructuring	Rate of progress of the decommissioning of the Irish demersal and shellfish fleets	DAFF or DTM
Population	Step-up development; Competitiveness performance	Seafood and related employment	BIM and Census data
Biodiversity, flora & fauna, Water	Aquaculture industry development;	Rate of aquaculture monitoring reporting (currently at 66%)	DAFF or DTM
		Aquaculture monitoring results and the rate of compliance with license conditions	DAFF or DTM
		Regional nutrient loading (and other relevant environmental data) from aquaculture and fishing activities	Water Framework Directive Basin District Reports
		Compliance with recommendations in RBMP and PoM	Relevant RBMP
		NPWS Conservation Status Report (required under Article 17 of the Habitats Directive)	NPWS
Human health	Aquaculture industry development;	MSSC - biotoxin and microbiological monitoring and rates of compliance	DAFF or DTM
	Seafood industry training	Uptake and attendance at training courses	BIM

Source: BIM & ERM (2008)

CONTENTS

1 INTRODUCTION

1.1 BACKGROUND

ERM Environmental Resources Management Ireland Ltd. (ERM Ireland) was commissioned in July 2008 by *Bord Iascaigh Mhara* (BIM) to undertake a Strategic Environmental Assessment (SEA) of the Irish National Seafood Plan.

ERM have been previous commissioned in 2007 by BIM to undertake an SEA of the Irish-EC Co-Funded Seafood OP 2007 - 2013. The difference between this previous OP and the Irish National Seafood Plan currently being subjected to SEA is that the National Seafood Plan is totally financed by the Irish Government whereas the previous OP was partially financed by the EU.

The requirement to prepare the National Seafood Plan arose from amendments made to the Irish-EC Co-Funded Seafood OP: these amendments resulted in elements of the Co-Funded OP being re-located to the National Seafood Plan.

This document is the Environmental Report and this presents the likely significant effects on the environment of implementing the Irish National Seafood Plan. Mitigation measures, to address the identified significant effects, are also proposed.

The remainder of this Environmental Report is structured as follows.

Section 2 provides a background to the Irish National Seafood Plan and discusses the measures proposed. Its links to other plans and programmes and its place in the plan-making hierarchy is also discussed and a summary of relevant environmental protection objectives relevant to the National Seafood Plan will be presented. Finally, alternatives considered during the preparation (and future implementation) of the National Seafood Plan will also be discussed.

Section 3 summarises the SEA process in relation to the Irish National Seafood Plan. Key requirements and outputs of the SEA Regulations are also presented. Difficulties encountered and assumptions made in the assessment will be summarised here.

Section 4 summarises the SEA scoping consultation process and addressed the various submissions made by the designated environmental authorities and the consultees in Northern Ireland.

Section 5 summarises the baseline environmental conditions in relation to the National Seafood Plan. This section also outlines any existing and relevant environmental problems.

Section 6 identifies the likely significant effects on the environment as a result of the implementation of the National Seafood Plan. A summary of the results of the Article 6 Assessment is also provided here.

Section 7 proposes mitigation measures to prevent reduce and offset any significant adverse effects predicted in *Section 6*.

Section 8 outlines the proposed monitoring measures which will monitor the significant environmental effects of the implementation of the National Seafood Plan.

Section 9 provides a short conclusion to the Final Environmental Report.

Annex A is the report on the Article 6 assessment.

1.2 STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

Directive 2001/41/EC which provides for the assessment of the effects of certain plans and programmes on the environment ("SEA Directive") came into force in Ireland on 21st July 2004. The Directive applies to plans and programmes for which the first formal preparatory action is taken on or after 21 July 2004. The Directive has been transposed into Irish Law through two sets of Regulations:

- European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. 435 of 2004); and
- Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. 436 of 2004).

S.I. 435 of 2004 is the Irish regulation of relevance in relation to the Irish National Seafood Plan and is referred to as the SEA Regulations hereafter. The requirement to undertake SEA is derived from Article 9 of the SEA Regulations.

The main objective of the SEA Directive is to "*provide for a high level of protection for the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.*" The authority responsible for preparing the plan or programme is usually responsible for undertaking the SEA.

1.3 NATIONAL SEAFOOD PLAN

The overall objective of the Irish National Seafood Plan is to produce a sustainable, profitable, competitive and market-focused seafood industry. The OP is seeking to make the maximum, long-term, economic and social contribution to coastal communities and Ireland as a whole. The National

Seafood Plan is an investment programme covering the Irish seafood industry and covers areas such as sea fishing, seafood processing, aquaculture, training and education programmes and marketing of seafood produce.

Bord Iascaigh Mhara (BIM) is the State Agency preparing the Irish National Seafood Plan, on behalf of the Department of Agriculture, Fisheries and Food (DAFF). The National Seafood Plan covers the period 2007 - 2013. Further detail on the National Seafood Plan is provided in *Section 2* below.

2 NATIONAL SEAFOOD PLAN

2.1 INTRODUCTION

This section summarises the National Seafood Plan, its key requirements and its background. Its position in the legislation, policy, plan and programme hierarchy is also discussed. This is important as the National Seafood Plan is not prepared in a vacuum, rather, it is influenced by higher, more strategic plans which set the agenda and define the content the National Seafood Plan; this issue is discussed in *Section 2.2* below.

2.2 STRATEGIC PLANS AND THEIR INPUT INTO THE NATIONAL SEAFOOD PLAN

2.2.1 Overview

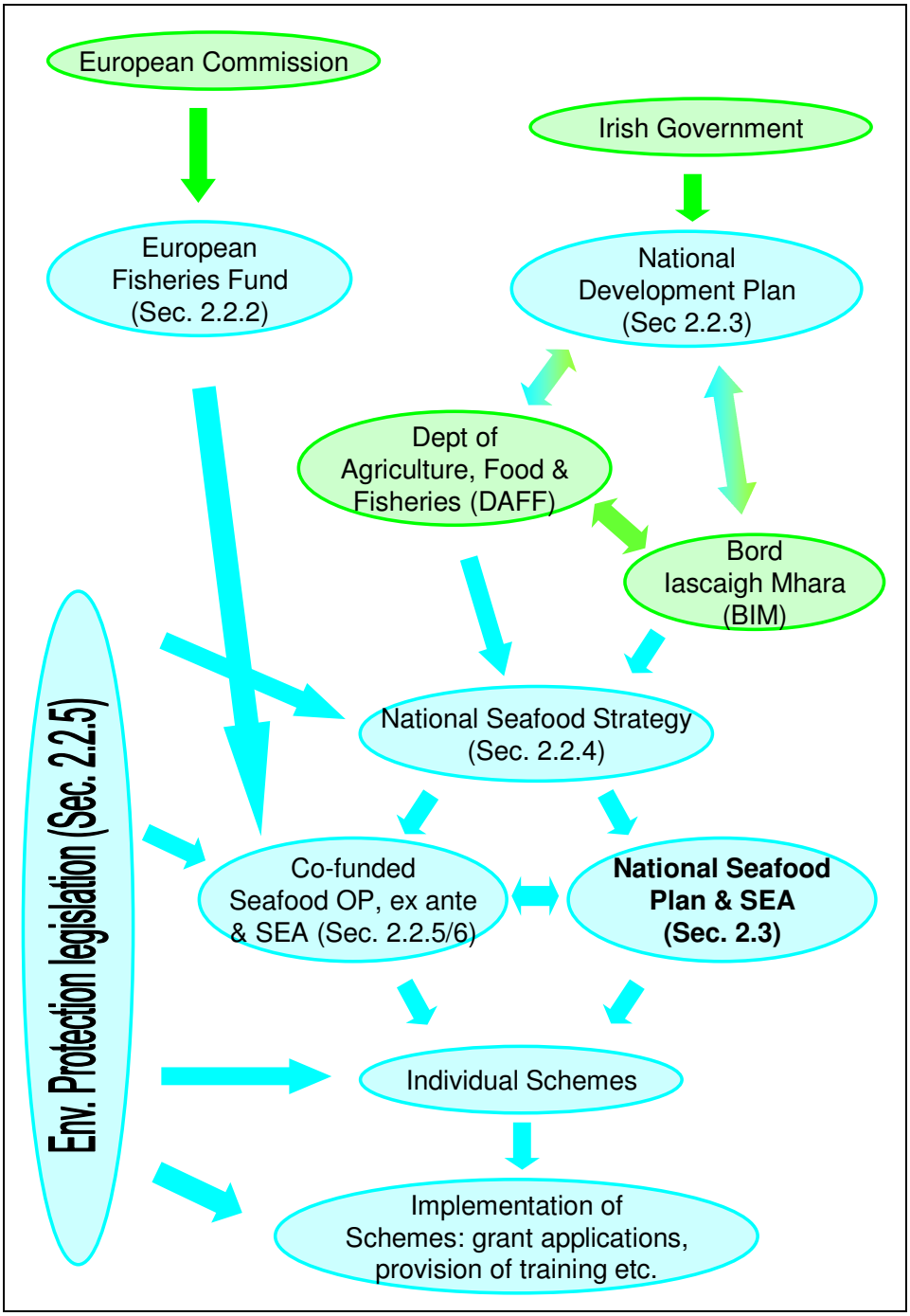
The structure and content of the Irish National Seafood Plan is guided and informed by a series of EU and national-level sectoral plans, as well as a range of EU and national environmental legislation.

The EU and national-level sectoral legislation, policies, plans and programmes are:

1. European Fisheries fund (EC No 1198/2006);
2. National Strategic Plan;
3. Irish-EC Co-Funded Seafood OP;
4. Outcomes of the ex-ante evaluation (referred to in Article 48 of Regulation (EC) No. 1198/2006) of the Irish-EC Co-Funded Seafood OP; and
5. Other environmental protection instruments.

Figure 2.1 presents a summary of the key legislation, policy, plans and programme influences on the National Seafood Plan.

Figure 2.1 Summary of the key influences on the National Seafood Plan



Source: BIM & ERM (2008)

2.2.2 *European Fisheries Fund (EFF); Council Regulation No. 1198/2006*

The Article 19 of European Fisheries Fund (EFF) Regulation provides the guiding principles for drawing up the National Seafood Plan. Although the measures (individual elements) in the OP are not being funded by the EU, given the obvious links to the previous (Co-Funded) OP, DAFF wish to prepare this Irish Government-financed OP on the basis of the various objectives of the EFF as the previous OP was also prepared on this basis.

The EFF has identified four priorities (Priority Axes) as follows:

1. Reduction of fishing pressure and better protection for the marine environment;
2. Aquaculture, and processing and marketing of fisheries and aquaculture products;
3. Measures of collective benefit; and
4. Sustainable development of coastal fishing areas.

The various measures of the Irish National Seafood Plan are directly linked to specific articles in the EFF. The direct links from the relevant EFF Articles and Priority Axes to the individual measures in the OP are shown in *Table 2.1* below.

Table 2.1 Links between the National Plan Measures and the EFF (Articles and Axes)

Measure	Scheme	EFF Article	EFF Priority Axis
1. Market Research	Seafood Market Research	37, 40	3
	Functional Food Market Research		
2. Market Development & Promotion	Export Market Development		
	Domestic Market Development		
3. Innovation Support	Performance Improvement	37, 41	
	Innovation & Technology Transfer		
	Quality & Environment		
	Pelagic Development	37, 40	
4. Step-Up Development	Business Investment	35	2
	Collective Investment		
5. Market Investment	Business Investment		
	Collective Investment		
6. Competitiveness & Performance	Business Options	37	3
	Performance Improvement	37, 41	
	Innovation & R&D		
	Technology Transfer		
	Strategic Alliances & Partnerships		
7. Fleet Restructuring	Fleet Decommissioning	23-25	1
	Vessel safety and fuel efficiency	25-27	
	Inshore Diversification	26-27	
8. Aquaculture Industry Development	Modernisation and expansion of small scale investment projects in aquaculture	29	2
	Development of new species, technology and sites for aquaculture		
	Development of handling facilities for quality, hygiene & efficiency		

Measure	Scheme	EFF Article	EFF Priority Axis
	Development and modernisation of small and medium sized aquaculture enterprises		
9. Social & Economic Development (Fisheries)	Human Skills Development	26, 37, 44	3
	Infrastructure Development	26, 37	
	Product Development & Innovation	37, 40, 41	
10. Socio-Economic Sustainability (Aquaculture)	Other Sustainability Measures	31	2
	Establishment of Depuration and relaying facilities for live bivalve molluscs	31, 37	3
	Regional development programmes for coastal fishing areas		
	Re-establishing productive potential of aquaculture due to natural or industrial disasters	43, 44	4
	Peace and transnational co-operation		
11. Marine Environment Protection (Fisheries)	Environmentally Friendly Fishing Gear	25, 26	1
	Collective Actions for Sea Fisheries	37, 38	
	Technical Research Partnership	26, 37, 38, 41	
	Waste Management	26, 37, 39, 42	
	Technical Innovation		
12. Marine Environment Protection & QA (Aquaculture)	Development and Implementation of Quality Assurance Programmes for Aquaculture Product Scheme		3
	Development and Implementation of Environmental Management Programmes for Aquaculture Production Scheme	37	
	Regional Delivery Programme for Aquaculture Development Scheme		
	CLAMS and aquaculture communications programme		
	Pre-commercialisation Technology Transfer		
13. Seafood Industry Training	Improving Professional Skills & Safety Training	26, 27	1
	Aquaculture Production Lifelong learning	26, 27, 29	2
	Measures of Common Interest – upgrade professional skills	37	3

Source: BIM (2008)

Table 2.1 illustrates the links between the Articles and Priority Axes of the EFF and each of the 13 Measures (*Section 2.3*) within the National Plan. It can be seen that each of the four Priority Axes are addressed.

2.2.3 *National Development Plan 2007 – 2013*

The National Development Plan 2007-2013 is a €184 billion Plan focusing on the following four objectives:

- to continue sustainable national economic and employment growth;
- to strengthen and improve Ireland's international competitiveness;
- to foster balanced Regional Development; and
- to promote Social Inclusion.

The NDP states that it "will support investment in research, new technologies and new product development in the seafood sector as well as assistance in restructuring companies to improve their competitiveness in this increasingly globalised sector. Supports will also be provided to assist fishing communities to diversify into other marine based activities, like aquaculture and marine tourism".

2.2.4 *National Strategic Plan*

The National Strategic Plan sets out a vision for a sustainable, profitable and self-reliant seafood industry that will maximise the long-term contribution of the seafood sector to coastal communities. *'Steering A New Course'* – the Report of the Seafood Industry Strategy Review Group - formed the basis of the National Strategic Plan.

Steering A New Course incorporates the views of all key stake-holders in the Irish seafood sector; individual fishermen, fish farmers, processors, marketers and other stakeholders. Its vision and detailed recommendations were produced following four public consultative meetings at venues around the coast, a number of other meetings with representative organisations, the consideration of over 70 submissions from interested parties and 21 ordinary meetings of the Review Group.

2.2.5 *Irish-EC Co-Funded Seafood OP (and SEA documentation)*

This was the 'original' OP (Irish-EC Co-Funded Seafood OP) which BIM prepared and was subject to a separate SEA process and report. During the course of the preparation of this Co-Funded OP, the EC advised BIM that they wished to include in the OP only those measures which are EC co-funded. There were originally 14 separate measures in this original OP, but following this direction from the EC this was reduced down to four after all non-co-funded measures were removed. The remaining four measures (or interventions, as they were called in this OP) were:

- Fleet Decommissioning Intervention;
- Marine Environmental Protection Schemes and Environmental Management Systems Intervention;
- Inshore Management Intervention; and

- Area based Initiatives.

The interventions/measures which were removed on advice and guidance from the EC were to be advanced via another/national OP (i.e. this Irish National Seafood Plan).

As noted previously, the Irish EC Co-funded OP was subjected to full SEA and an Article 6 Appropriate Assessment (under the Habitats Directive) was also undertaken on the OP. All of this documentation was subject to both statutory and public consultation and the documents were available on www.bim.ie and also in BIM's regional offices.

2.2.6 *Ex ante assessment*

Article 48 of the EFF Regulation requires an ex ante evaluation for the Irish-EC Co-Funded Seafood OP. The purpose of the ex ante evaluation is to optimise the allocation of resources and to improve the quality of the National Seafood Plan. The ex ante evaluation was an interactive process whereby judgement and recommendations are provided by the ex ante team on the content of the OP. It was an iterative process with the recommendations of the ex ante team and relevant stakeholders informing the preparation of the OP.

Irish-EC Co-Funded Seafood OP ex ante evaluation was prepared in parallel with the previous SEA process and the scope of this ex ante actually included all measures/interventions (i.e. both Co-Funded and non-Co-Funded). The findings of the ex ante informed the scope of the Irish-EU Co-Funded Seafood OP and will also be an influence in the scope and content of this OP.

2.2.7 *Other environmental protection instruments*

BIM also considered a range of existing EU and national environmental protection legislation during the preparation of the Irish National Seafood Plan. Many of these did not explicitly influence the detail within the OP. However, they do form a framework within which the OP will be implemented and this was a key consideration during the development of the OP. A list of these is provided below:

- EU sustainability Development Strategy;
- Common Fisheries Policy;
- OSPAR Convention;
- Convention on Biological Diversity;
- National Biodiversity Plan;
- Water Framework Directive (2000/60/EC);
- Urban Waste Water Treatment Directive
- EU Birds Directive (Council Directive 79/409/EEC);
- EU Habitats Directive (Council Directive 92/43/EEC);
- ISO 14000 Environmental Management Series
- European Union Eco-Management and Audit Scheme (EMAS) & ISO 14001;

- SEA Directive (& associated Regulations);
- EIA Directive (& associated Regulations); and
- Aquaculture (Licence Application)(Amendment) Regulations 2006.

A short summary of the key points of the above pieces of environmental protection instruments is provided below.

EU Sustainable Development Strategy

The EU Sustainable Development Strategy, adopted by the European Council in Gothenburg in June 2001, and renewed in June 2006, aims to reconcile economic development, social cohesion and protection of the environment. The EU's Sustainable Development Strategy, in tandem with the Lisbon Strategy for growth and jobs, seeks a more prosperous, cleaner and fairer Europe. Sustainable development of fisheries is a key overall objective of the National Seafood Plan.

Common Fisheries Policy

The Common Fisheries Policy (CFP) is the European Union's instrument for the management of fisheries and aquaculture. It was created to manage a common resource and to meet the obligation set in the original Treaties of the then European Union. As fish are a natural and mobile resource they are considered as common property and are managed within the EU through collective actions. The CFP originates from the treaty of Rome in 1957, but it was not until 1983 that the first comprehensive common policy on fisheries was put in place where common rules were adopted at EU level and implemented in all Member States.

Key areas in the CFP are:

1. Conservation and environment;
2. Structures and fleet management;
3. The common organisation of the market; and
4. Relations with third countries.

Conservation and environment area of the CFP predominately centres on measures implemented to manage the fisheries such as:

- TACs and quotas, whereby maximum quantities of fish that can be caught every year are set , based on the advice of scientific studies;

- Technical Conservation measures, which include measures to promote selective fishing gear, such as nets with larger meshes or fitted with square-meshed panels, restrictions on fishing to protect juvenile fish and sensitive non-target species and habitats; and

- Setting of minimum landing sizes in line with the selectivity of the gear concerned, and the introduction of "discard ban trials" in which

representative samples of fishing vessels would be encouraged through economic incentives to retain their entire catch and the development of economic incentives for the use of more selective fishing practices.

OSPAR Convention

The Convention for the Protection of the Marine Environment of the North-East Atlantic (the "OSPAR Convention") was opened for signature in 1992 and came into force in 1998. It has been signed by the following European countries: Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, the Netherlands, Norway, Portugal, Spain, Sweden and the United Kingdom of Great Britain and Northern Ireland, Luxembourg and Switzerland.

OSPAR has six key areas or strategies in relation to the marine environment of the NE Atlantic, which are:

- Protection and Conservation of Marine Biodiversity and Ecosystems;
- Eutrophication;
- Hazardous Substances;
- Offshore Oil and Gas Industry;
- Radioactive Substances, and
- Monitoring and Assessment.

Of particular relevance to the National Seafood Plan is the Protection and Conservation of Marine biodiversity and Ecosystems strategy, which has four elements:

- **ecological quality objectives:** in support of the ecosystem approach to the management of human activities, a pilot project on ecological quality objectives for the North Sea has been started;

- **species and habitats:** assessments are made of species and habitats that are threatened or in decline, and programmes and measures are developed for their protection;

- **marine protected areas:** an ecologically coherent network of well managed marine protected areas is being created; and

- **human activities:** the human activities in the OSPAR maritime area which may adversely affect it are being assessed, and programmes and measures to safeguard against such harm are being developed.

Convention on Biological Diversity

Article 1 of the convention states that "The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic

resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding."

In April 2002, the Parties to the Convention (countries who have signed up to the Convention) committed themselves to achieve by 2010 "a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth."

Ireland is one of the Parties (of whom 190 and signed the Convention) since 1992. One of the requirements was that Ireland should prepare a National Biodiversity Plan.

National Biodiversity Plan (2002 – 2006)

The National Biodiversity Plan is one of Ireland's key commitments under the convention on Biological Diversity. The Plan was approved by Government and published in 2002. The National Biodiversity Plan contains 91 Actions aimed at securing the conservation and sustainable use of biodiversity in Ireland, and where possible its enhancement, and also to contribute to the conservation and sustainable use of biodiversity globally.

Water Framework Directive (2000/60/EC)

The Directive requires the attainment of good quality in all inland surface waters, estuarine and coastal waters (to a distance of one nautical mile) and groundwater by 2015. The Directive requires that waters be managed as hydrological units, i.e. as individual river catchments or groups of contiguous catchments, termed river basin districts (RBDs). The Directive was adopted in Ireland under the European Communities (Water Policy) Regulations, made in 2003 and the Water Policy (Amendment) Regulations 2005. A total of eight RBDs have been identified, four (Eastern, South Eastern, South Western and Western) wholly within the State and three (North Western, Neagh-Bann and Shannon) shared with Northern Ireland and finally one within Northern Ireland (North-Eastern).

The WFD sets a series of challenging targets to the all EU member states. In all waters including the coastal and transitional waters the Water Framework Directive aims at maintaining "high status" in terms of ecology and water quality measures of all waters where it exists, preventing any deterioration in the existing status of waters and achieving at least "good status" in relation to the ecology and quality of all waters by 2015.

The WFD will repeal a number of existing EU Directives. These are:

- Directive 76/464/EEC (art. 6 only) on dangerous substances from December 22nd 2000;
- Directive 75/440/EEC on surface waters from December 22nd 2007;

- Directive 79/869/EEC on measurement and sampling from December 22nd 2007;
- Directive 79/659/EEC on fish life;
- Directive 79/923/EEC on shellfish waters;
- Directive 80/68/EEC on groundwater; and
- Directive 76/464/EEC (except art. 6) on groundwaters from December 22nd, 2013.

The River Basin Management Plans (RBMPs), including the Programme of Measures (PoM), a key requirement under the WFD, will have significant implications for the future management of Ireland's aquaculture sector, especially those in inland and near-shore locations. Draft RBMPs are expected in early 2009. The future siting of additional aquaculture operations will need to consider specific requirements of the relevant RBMP. Additionally, aquaculture licensing protocols would also consider any specific recommendations and data in the RBMP.

Convention on Wetlands (Ramsar, Iran, 1971)

The Convention on Wetlands is an intergovernmental treaty adopted on 2 February 1971. The mission of the Ramsar Convention (as adopted by the Parties in 1999 and refined in 2002) is "the conservation and wise use of all wetlands through local, regional and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world".

The treaty includes four main commitments that the Contracting Parties have agreed to and these are:

1. *Listed sites (Article 2 of the Convention)*

   The first obligation under the Convention is for a Party to designate at least one wetland at the time of accession for inclusion in the List of Wetlands of International Importance (the "Ramsar List") and to promote its conservation, and in addition to continue to "designate suitable wetlands within its territory" for the List (Article 2.1). Selection for the Ramsar List should be based on the wetland's significance in terms of ecology, botany, zoology, limnology, or hydrology.

2. *Wise use (Article 3 of the Convention)*

   There is a general obligation for the Contracting Parties to include wetland conservation considerations in their national land-use planning. They have committed themselves to formulate and implement this planning so as to promote, as far as possible, "the wise use of wetlands in their territory".

3. *Reserves and training (Article 4 of the Convention)*

Contracting Parties have also undertaken to establish nature reserves in wetlands, whether or not they are included in the Ramsar List, and they are expected to promote training in the fields of wetland research, management and wardening.

4. *International cooperation (Article 5 of the Convention)*

Contracting Parties have also agreed to consult with other Contracting Parties about implementation of the Convention, especially in regard to transboundary wetlands, shared water systems, and shared species.

Ireland has ratified 45 Ramsar sites which cover almost 67,000 ha in area.

EU Birds Directive (Council Directive 79/409/EEC) and EU Habitats Directive (Council Directive 92/43/EEC)

These Directives require that Member States designate and ensure the conservation status of special sites, collectively termed Natura 2000 sites. The Habitats Directive aims to ensure the protection and restoration at a favourable conservation status of habitats and species listed or to be listed under Annexes to the Directive. Natura 2000 is the network of protected sites established and comprises SACs (designated under the Habitats Directive) and SPAs (established under the Birds Directive).

These Directives are of direct relevance to both aquaculture and inshore fisheries as the activity of both can occur within or adjacent to Natura 2000 sites. For plans and projects located in or adjacent to a Natura 2000 site, and which are not directly related to the management of that site, an appropriate assessment (under Article 6) which considers the potential effects of any plans or programme on the conservation objectives of the site is required.

An Article 6 appropriate assessment (AA) was undertaken as part of this SEA and a report of the findings of the AA can be found in *Annex A*.

Urban Wastewater Treatment Directive (91/271/EEC)

The Directive was adopted in May 1991 and addresses the impacts from urban wastewater treatment. The Directive's objective is to protect the environment from the adverse effects of urban wastewater discharges and discharges from certain industrial sectors (see Annex III of the Directive). The Directive addresses the collection, treatment and discharge of domestic wastewater, mixed wastewater and wastewater from certain industrial sectors.

The Directive specifically requires:

- The collection and treatment of wastewater in all agglomerations of >2,000 p.e.;

- Secondary treatment of all discharges from agglomerations of >2,000 p.e., and more advanced treatment for agglomerations >10,000 p.e. in designated sensitive areas and their catchments;

- A requirement for pre-authorisation of all discharges of urban wastewater, of discharges from the food-processing industry and of industrial discharges into urban wastewater collection systems;

- Monitoring of the performance of treatment plants and receiving waters; and

- Controls of sewage sludge disposal and re-use, and treated waste water re-use whenever it is appropriate.

The Urban Waste Water Treatment Regulations, 2001 (S.I. 254 of 2001), were signed in June 2001 and amended on July 2004. The Regulations transpose the mother Directive and also parts of the WFD (see above). These Regulations prescribe 30 water bodies as sensitive areas and also set discharge standards in relation to wastewater effluent.

These regulations are of direct importance to the aquaculture and inland fisheries sectors as effluent from wastewater treatment plants often can be a significant reason for impacts to shellfish waters and shellfish quality.

SEA Directive (2001/42/EC)

The Strategic Environmental Assessment (SEA) Directive was transposed in to law in Ireland in July 2004 and its objective is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of specified plans and programmes with a view to promoting sustainable development. In accordance with the SEA Directive, this Operational Programme was subject to the preparation of this Environmental Report. Further information on the SEA Directive can be found in *Section 3.1*.

EIA Directive

EIA Directive (85/337/EEC, as amended by 97/11/EC) on the assessment of certain public and private projects on the environment requires that projects which have the potential to have significant effects on the environment are assessed prior to consent being granted for them. The EIA process is an interactive process designed to assess the potential environmental impacts of a development before they are carried out. A key part of the process is the development of mitigation measures, which should reduce the significance of the potential adverse environmental impacts of the project. EIA is undertaken for many types of development, including aquaculture developments. The practice of EIA is at a site-specific level, below or after an SEA has been completed. The key document in the EIA process is the Environmental Impact

Statement (EIS), which is a statement of effects which a proposed development may have on the environment.

ISO 14000 Environmental Management Series

The ISO 14000 family addresses various aspects of environmental management. The very first two standards, ISO 14001:2004 and ISO 14004:2004, deal with environmental management systems (EMS). ISO 14001:2004 provides the requirements for an EMS and ISO 14004:2004 gives general EMS guidelines. The Standard contents and guidelines have been used in the development of EMS for the aquaculture and fisheries sectors in Ireland.

The other standards and guidelines in the family address specific environmental aspects, including: labelling, performance evaluation, life cycle analysis, communication and auditing

European Union Eco-Management and Audit Scheme (EMAS)

This is voluntary initiative designed to improve companies' environmental performance. It was initially established by European Regulation 1836/93, although this has been replaced by Council Regulation 761/01.

Its aim is to recognise and reward those organisations that go beyond minimum legal compliance and continuously improve their environmental performance. In addition, it is a requirement of the scheme that participating organisations regularly produce a public environmental statement that reports on their environmental performance.

EMAS requires participating organisations to implement an environmental management system (EMS). The EMS must meet the requirements of the International Standard BS EN ISO 14001. Many organisations progress from ISO 14001 to EMAS and maintain certification/ registration to both. Organisations registering to EMAS must be able to demonstrate that they have identified and know the implications to the organisation of all relevant environmental legislation and that their system is capable of meeting these on an ongoing basis. At the time of registration, the environmental regulators are consulted to make sure that they are satisfied with the organisation in this regard.

BIM has developed *Ecopact*, a voluntary Environmental Code of Practice for Irish aquaculture operations. Ecopact is an initiative to assist the process of developing and adopting an EMS on a nationwide and systematic basis. It comprises a total of 15 Key Objectives (ranging from the minimisation of waste production to ensuring the health and welfare of stock and a healthy environment). Following the success of ECOPACT, a similar EMS has been developed that is tailored to the fisheries sector. ECOPACT has also been taken a step further through the development of independently internationally accredited (ISO 65 / EN45011) eco-standards for farmed salmon and mussels as an extension of scope to the existing quality standards

and where by certain high level criteria must be met in order to obtain certification.

Aquaculture (Licence Application)(Amendment) Regulations 2006

This piece of legislation requires that all aquaculture operations hold a license (previously granted by the former Department of Communications, Marine and Natural Resource), permitting them to operate. Section 61 of the Fisheries (Amendment) Act, 1997 specifies the following criteria to be taken into account by the licensing authority in making licensing decisions, as may be appropriate in the circumstances of the particular case:

a) the suitability of the place or waters at or in which the aquaculture is or is proposed to be carried on for the activity in question;

b) other beneficial uses, existing or potential, of the place or waters concerned;

c) the particular statutory status, if any, (including the provisions of any development plan, within the meaning of the Local Government (Planning and Development) Act, 1963 as amended), of the place or waters;

d) the likely effects of the proposed aquaculture, or revocation or amendment of an aquaculture licence, on the economy of the area in which the aquaculture is or is proposed to be carried on;

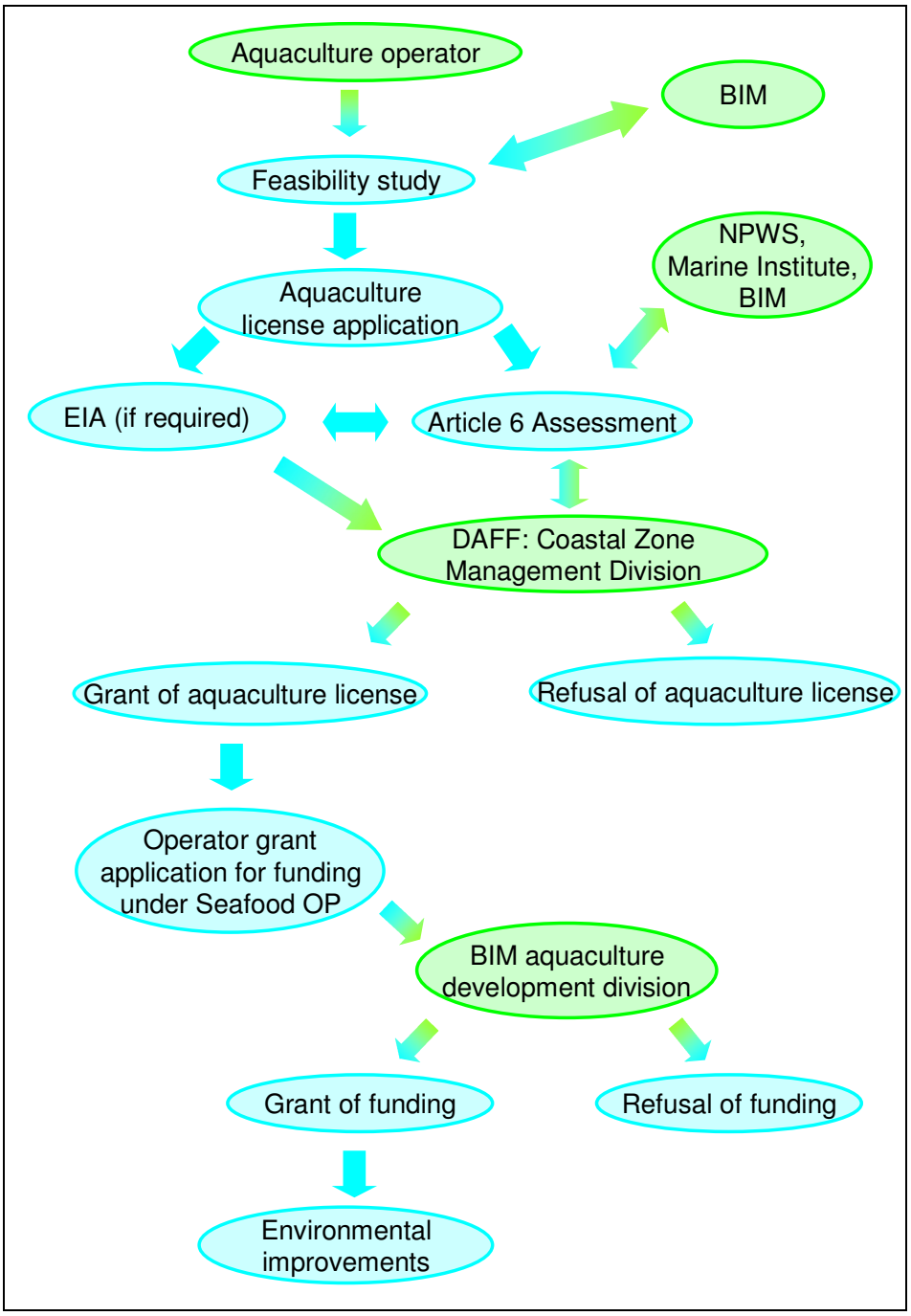
e) the likely ecological effects of the aquaculture or proposed aquaculture on wild fisheries, natural habitats and flora and fauna, and

f) the effect or likely effect on the environment generally in the vicinity of the place or water on or in which the aquaculture is or is proposed to be carried on -
    (i) on the foreshore, or
    (ii) at any other place, if there is or would be no discharge of trade or sewage effluent within the meaning of, and requiring a licence under section 4 of the Local Government (Water Pollution) Act, 1977; and

g) the effect or likely effect on the man-made environment of heritage value in the vicinity of the place or waters.

An aquaculture licence application for the intensive culture of finfish requires the preparation of an EIS to be submitted with the application. Additionally, if the proposed license has the potential to significantly impact on a site of European Conservation interest, then an appropriate assessment will also be required. A simple schematic of this process is provided in *Figure 2.2* below.

Figure 2.2 Schematic summary of the aquaculture licensing process



Source: BIM & ERM (2008)

It is acknowledged that a wider range of environmental protection legislation applies to the implementation of the National Seafood Plan, and also to all of BIM's wider activities.

2.3 SPECIFIC MEASURES IN THE IRISH NATIONAL SEAFOOD PLAN

13 specific measures are the key elements of the Irish National Seafood Plan. These measures are, in effect, what the National Seafood Plan intends to do

over the course of its 6 year timeframe. These are summarised in this section. For a fuller description of each Measure, please refer to the National Seafood Plan. *Table 2.1* above illustrates the links between each of these Measures and the relevant EFF Article and Priority Axis.

2.3.1 Market Research Measure (EFF Articles 37, 40)

The Market Research Measure is aimed directly at enhancing and strengthening industry knowledge and understanding of the market. This measure encompasses two schemes designed to assist collective initiatives and actions within the industry.

2.3.2 Market Development & Promotion Measure (EFF Articles 37, 40)

The Market Development & Promotion Measure seeks to capture the full potential value of Irish seafood through a market-focused, customer-led development strategy supported by enhanced trade and promotional activity in key existing and target markets.

2.3.3 Innovation Support Measure (EFF Articles 37, 40, 41)

The Innovation Support Measure is aimed directly at developing the seafood industry's capability of establish a leading position in delivering market-led innovation, with specific focus on R&D, value-added development and the application of appropriate technology to remain competitive and profitable into the future.

2.3.4 Step-Up Development Measure (EFF Article 35)

The Step-Up Development Measure seeks to create a restructured seafood processing sector with appropriate scale and operational efficiency to compete in an increasingly cost competitive market, and with the capability to invest in R&D and value-added development to meet customer demands and take advantage of new market opportunities.

2.3.5 Market Investment Measure (EFF Article 35)

The Market Investment Measure is aimed at providing financial support to enhance the industry's marketing capability and to improve market performance. This will be achieved by supporting a wide range of marketing initiatives designed to generate higher market returns, in accordance with the value generation targets set out for 2015.

2.3.6 Competitiveness & Performance Measure (EFF Article 37, 41)

The Competitiveness & Performance Measure is aimed at improving the overall competitiveness and performance of the seafood processing sector and encompasses five schemes designed to assist collective initiatives and actions within the sector.

2.3.7 Fleet Restructuring Measure (EFF Article 23, 25, 26, 27)

This measure provides funding to redress the significant imbalance that exists between the available resource of fishing quota and catching capacity of the Irish fishing fleet. The introduction of a whitefish decommissioning scheme; while at the same time providing grant aid to those vessels remaining to improve safety standards, fish quality and improve fuel efficiency; will reduce this imbalance. The measure also provides grant aid for the purchase of vessels for young fishermen. This measure was also contained within the Irish-EU Co-Funded OP and the scope of funding of that specific measure in the previous OP was three-times of that of the funding proposed for this particular measure in the Irish National Seafood Plan. The reason for this measure appearing in both OPs is that there was funding limits which applied in the Irish-EU Co-Funded OP with the remainder of the funding is being allocated to the Irish National Seafood Plan.

2.3.8 Aquaculture Industry Development Measure (EFF Article 29)

This measure is concerned with development of the Aquaculture sector and contains four schemes. These are:

- the modernisation and expansion of small scale investment projects in aquaculture;
- development of new species; technology and sites for aquaculture;
- development of handling facilities for quality, hygiene and efficiency and development;
- and modernisation of small and medium sized aquaculture enterprises.

Capital grant assistance for structural investment projects in aquaculture under this Measure are only paid to projects which are fully licensed under the Fisheries and Foreshore Acts as appropriate. BIM also provides grant assistance to projects aimed at establishing the commercial and technical feasibility and environmental sustainability of proposed investment in aquaculture.

Eligibility criteria for marine-based aquaculture projects require that they be licensed under the Fisheries and Foreshore Acts. The Licensing Authority is the Minister for Agriculture, Fisheries and Food or, on appeal, the Aquaculture Licensing Appeals Board, an independent statutory body. Licensing of intensive finfish farms is subject to Environmental Impact Assessment. Public consultation is mandatory as an integral part of the licensing and Environmental Impact Statement (EIS) process.

Aquaculture licensees engaged in marine finfish culture are required to comply with five environmental monitoring protocols covering benthic monitoring, water column monitoring, sea lice monitoring and control, audit of operations, and fallowing. Guidelines have been developed for landscape and visual impact assessment and aquaculture licences incorporate these.

The Department of Agriculture, Fisheries and Food (DAFF) monitor compliance with aquaculture licence conditions. The Marine Institute is contracted by DAFF to report on compliance with the five monitoring protocols for marine-based finfish farms.

Aquaculture projects are selected by the development agencies on the basis of compliance with aquaculture licences and are prioritised on their environmental impact. Funding may be provided for measures to improve structural compliance e.g., investment in improved structures to minimise fish escapes (cages, nets, moorings), to minimise food waste (feed monitoring through installation of video cameras), to facilitate fallowing and single generation per site management strategies (cages, nets, moorings), measures to reduce waste disposal in shellfish farming (reusable materials), measures to reduce adverse visual impact in rope mussel farming (less visually intrusive floats).

The Aquaculture Industry Development Measure is mainstreamed to devise and implement measures, on a national basis, to improve environmental impact and raise environmental awareness. This work will be undertaken on a developmental basis and delivered via a Public Project. A specialist Environmental Officer will deliver the Programme at national level supported by regionally based officers.

Table 2.2 presents current and the estimated future-level of total aquaculture production in Ireland (for 2015). It should be noted that the additional production, which in the case of finfish, is projected to more than double, does not equate to an equivalent increase in the spatial area required for aquaculture licensing. Indeed, most of the projected production increases can be achieved by maximising the potential of existing licensed sites e.g. application of the carrying capacity findings may mean a reduction of total biomass on site, enabling faster growth rates and higher annual production.

Table 2.2 Current & future aquaculture production in Ireland

Aquaculture type	2005	2015	Increase
Finfish			
Salmon	13,711	30,000	16,289
Trout Sea farmed	717	1,150	433
Trout Fresh water	897	1,680	783
Other Finfish	6	2,470	2,464
Total finfish	*15,331*	*35,300*	*19,969*
Shellfish			
Mussels – Bottom Cultivated	29,510	44,000	14,490
Mussels - Rope Cultivated	9,948	16,400	6,452
Oysters C.gigas	5,812	9,000	3,188
Other Shellfish	643	1,400	757
Total Shellfish	*45,913*	*70,800*	*24,887*
Total Aquaculture	***61,244***	***106,100***	***44,856***

Source: BIM (2008)

2.3.9 Social & Economic Development Measure (EFF Articles 26, 37, 40, 41, 44)

This measure will target support for projects of common interest (to the EC fishing sector) that provide for economic or social development and which help to meet the objectives of the common fisheries policy.

2.3.10 Socio-Economic Sustainability Measure (EFF Articles 31, 37, 43, 44)

The strategy underlying the Measure is focussed on the provision of shellfish purification facilities to manage with the risk of contamination from human or agricultural effluents escaping into the environment.

This Measure will also be used to fund socio-economic initiatives, including the development of local bay carrying capacity models for shellfish production. It is further envisaged that there will be enhanced co-ordination between the inshore fishing and aquaculture sectors in terms of the creation of appropriate Coastal Fishing Areas. The CLAMS process and the Inshore Fisheries Management Process will be developed and administered in a complementary fashion, contributing a major building block in the development of any future Integrated Coastal Zone Management (ICZM) programmes for Ireland. Existing models for the local integration of aquaculture with inshore fisheries (such as The Clew Bay Marine Forum) will be built upon and an enhanced paradigm created taking account of the lessons learned so far.

The Measure will fund the continued operation of the Aquaculture Initiative EEIG (European Economic Interest Grouping) so as to promote aquaculture development in the cross-border region. An 'all-island' approach to the environmental and quality assurance initiatives will also be fostered to ensure that the reputation and image of Irish farmed seafood is maintained in the international marketplace.

2.3.11 Marine Environment Protection Measure (EFF Articles 25, 26, 37, 38, 39, 41 42)

This measure provides grant-aid support for projects implemented with the active support of the fishing industry or organisations acting on behalf of producers or other organisations recognised by BIM. The measure facilitates projects to address issues of environmental concern, particularly those intended to protect and develop aquatic flora and fauna while enhancing the aquatic environment.

2.3.12 Marine Environment Protection and Product Quality Assurance Measure (EFF Article 37)

This measure is aimed at promoting environmentally sound credentials through the widespread adoption by the sector of existing sector specific Environmental Management Systems (EMSs) and accredited Quality, Eco and Organic Standards.

As aquaculture activity is predominantly located on the state foreshore - a commonage shared with many other stakeholders - there is a need to establish environmentally sound credentials through the widespread adoption by the sector of Environmental Management Schemes. These schemes will facilitate the continual improvement of environmental performance and help assure other stakeholders and the local communities that sound environmental practice is being adhered to by the sector. They will also help to build and maintain consumer confidence in the products. This action together with a range of other steps in waste management and related issues is covered in the proposal to continue the existing public programmes as a scheme forming part of this integrated measure.

BIM see's 'green marketing' as a key role in assisting sales of its various seafood produce. It is recognised that Ireland cannot and won't compete on an international market with large volume aquaculture producing countries. Therefore the focus in Ireland is on the responsible production high quality, sustainable aquaculture products. The building blocks to achieving this will be: internationally and independently accredited product Quality, Eco and Organic assurance schemes, certified environmental management systems, innovative product forms and use of Ireland's image, all effectively communicated to the consumer.

2.3.13 Seafood Industry Training Measure (EFF Article 26, 27, 29, 37)

The Seafood Industry Training Measure consists of three training schemes for the catching, aquaculture, processing and marketing sectors with the addition

of a fourth diversification scheme for those who wish to remain working in a maritime occupation or alternatively retraining those wishing to follow new careers outside the seafood industry.

2.4 *ALTERNATIVES CONSIDERED*

There is a limited scope of the consideration of alternatives as the scope and requirements of the National Seafood Plan are defined and guided by European Fisheries Fund (EFF) (Council Regulation No. 1198/2006). Thus, measures in the OP are pre-defined in their scope and specific objectives (*Table 2.1*). The implication of this for the consideration of alternatives is that the OP cannot consider priorities which are outside eligible EU funding areas and criteria. Furthermore, the National Seafood Plan cannot overlap its funding with other EU and national programmes taking place in parallel with it.

However, alternatives will be considered during the implementation of the 13 measures (*Section 2.3*) and within the various schemes which will arise under each of the measures. Some schemes will require each potential applicant to formally apply to BIM for the appropriate funding under an appropriate measure and associated scheme (e.g. aquaculture measure) where as other measures will focus on providing training and marketing for the various products from the seafood sector. For schemes where applications are required, the application process will require the applicant to demonstrate that they have obtained all appropriate consents and permissions (e.g. aquaculture licenses, foreshore licenses etc.) before BIM will grant any funding. Any application which BIM view as having the potential to result in significant adverse environmental effects is likely to be rejected by BIM. Further detail on the scheme/application assessment process can be found in *Section 7.2.1*.

2.5 *POSITION OF THE NATIONAL SEAFOOD PLAN IN THE PLAN AND PROGRAMME HIERARCHY*

As noted earlier (*Section 2.2.1* and *Figure 2.1*) the OP is informed and guided by a number of more strategic documents, both at an EU level (Council Regulation (EC) No. 1198/2006 and Council Regulation (EC) No. 498/2007) and at a national level (National Strategic Plan). These are essential documents in the development and preparation of the National Seafood Plan.

The OP is a national-scale programme covering the 26 counties of the Republic of Ireland. Additionally, some funding will apply to cross-border schemes in Northern Ireland.

Below the National Seafood Plan sits the series of individual schemes, the mechanism chosen by BIM to implement the National Seafood Plan. These will facilitate:

- the granting of funding following a successful application (e.g. regarding the decommissioning of vessels or grants for permitted aquaculture ventures);

- direct funding of specific schemes (e.g. development of national, regional and local inshore management plans or developing Environmental Management Systems (EMS) for onshore parties); and

- the direct provision of assistance (e.g. training programmes).

It is important to note that any proposal and/or application which arise from the implementation of the various National Seafood Plan schemes will be subject to all appropriate consent procedures. These include the aquaculture licensing process (which often requires the preparation of an EIS and the completion of an Appropriate Assessment), foreshore license process (required when development is proposed to take place on lands on the foreshore and owned by the State) and the planning permission process.

Additionally, some of the schemes will only apply to applicants whom meet minimum eligibility criteria (e.g. vessel size, age, type etc.) or if the applicant has obtained certain consents and permissions in advance (e.g. BIM will only grant fund applications under the aquaculture intervention when an applicant has obtained an aquaculture license).

3 SEA PROCESS

3.1 EUROPEAN COMMUNITIES (ENVIRONMENTAL ASSESSMENT OF CERTAIN PLANS AND PROGRAMMES) REGULATIONS ('SEA REGULATIONS' HEREAFTER)

Article 9 of the S.I. 435 of 2004 (SEA Regulations) refers to the requirement to carry out environmental assessment (i.e. SEA). This Article states:

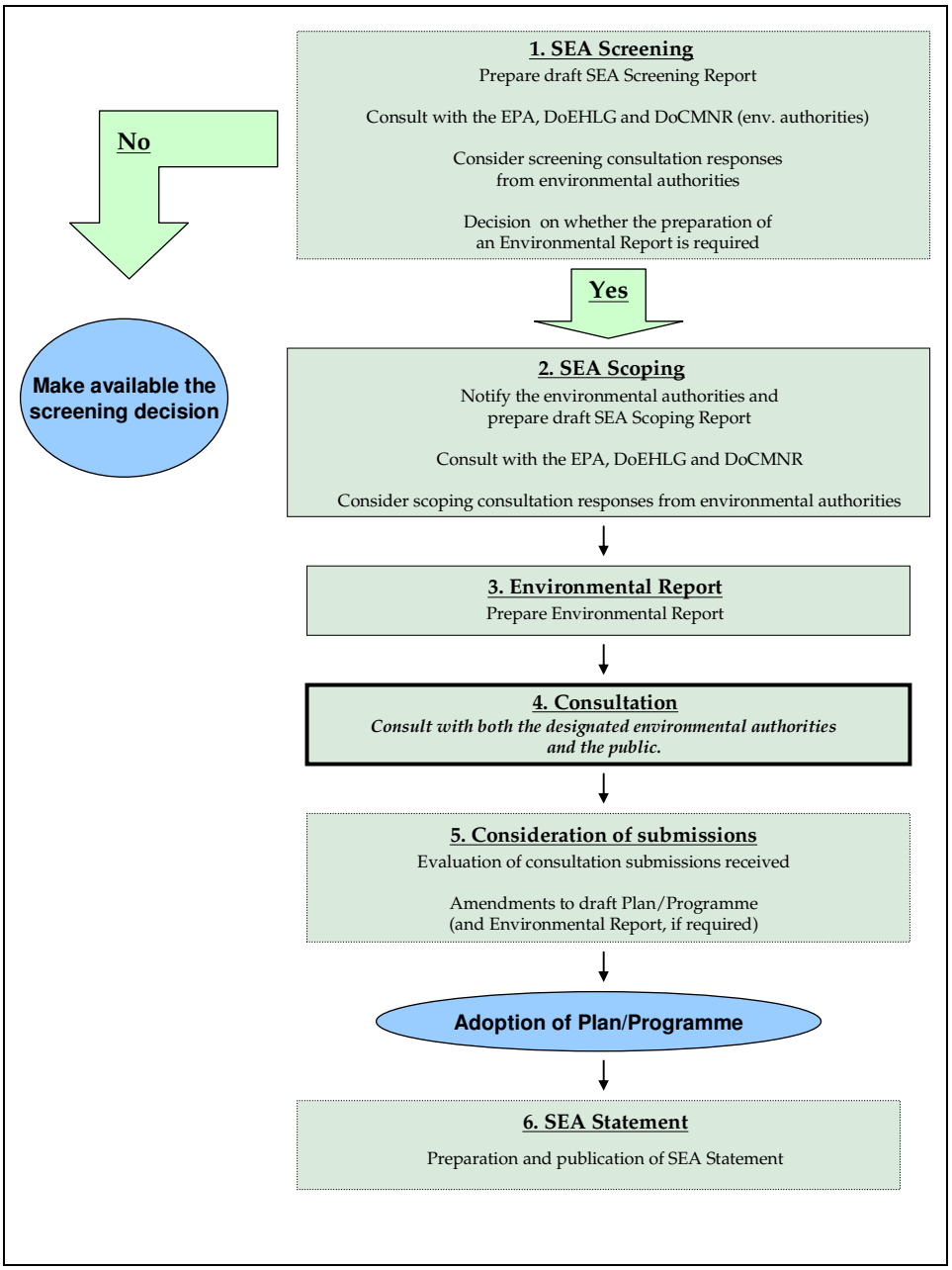
> *"… an environmental assessment shall be carried out for all plans and programmes*
>
> *(a) which are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications and tourism, and which set the framework for future development consent of projects listed in Annexes I and II to the Environmental Impact Assessment Directive, or*
>
> *(b) which are not directly connected with or necessary to the management of a European site but, either individually or in combination with other plans, are likely to have a significant effect on any such site."*

Plans and programmes are defined in Article 2 as:

> *"…plans and programmes, as well as any modifications to them*
>
> *(a) which are subject to preparation and/or adoption by an authority at national, regional or local level or which are prepared by an authority for adoption, through a legislative procedure by Parliament or Government, and*
>
> *(b) which are required by legislative, regulatory or administrative provisions;"*

Regarding the National Seafood Plan, this is a 'programme' as defined under Article 2 of the SEA Regulations and is required by a regulatory provision (Council Regulation (EC) 1198/2006). Thus the Irish National Seafood Plan can be subjected to the provisions of SEA, the first stage of which is SEA screening. The key stages in the SEA process are summarised in *Figure 3.1* below and then discussed in *Sections 3.2* to *3.6* below.

Figure 3.1 Summary of the key stages in the SEA process



Bold outlining indicates the current stage (4. Consultation) in the SEA process.
Source: ERM (2008)

3.2 *SEA SCREENING*

Screening is the first stage in the SEA process and is the term given to the process where the need for an SEA of a given plan or programme is determined. There are various guidance documents which assist the SEA screening process, but the key to deciding if full SEA is required is whether the plan or programme would be likely to result in activities or development which may have significant effects on the environment (Article 9a).

If SEA is deemed necessary (i.e. significant effects on the environment are likely), the full SEA process must be completed. This requires:

- The preparation of an Environmental Report, where the likely significant environmental effects are identified and evaluated;
- Consultation with the public, environmental authorities, and any EU Member State affected, on the environmental report and draft plan or programme;
- Consideration of the findings in the Environmental Report and the outcome of the consultations in deciding whether to adopt or modify the draft plan or programme; and
- Publicising the decision on adoption of the plan or programme and how the SEA influenced the outcome.

In all cases, the authority preparing the plan or programme should make a copy of the SEA Screening Report available for public viewing and also notify the designated environmental authorities of the intention to prepare an SEA Screening Report, thus giving the designated environmental authorities an opportunity to comment on whether or not they consider significant effects on the environment likely to arise.

However, a plan-making authority may decide to prepare an Environmental Report and proceed straight to the second stage in the SEA process, scoping.

The requirement to undertake SEA is derived from Article 11 of the SEA Directive. Regarding the National Seafood Plan, it was decided to forego the formal screening stage and prepare a Scoping Report and then the SEA Environmental Report. This reflected a consideration of the scale and potential environmental effects which are likely to arise from the implementation of the National Seafood Plan and also due to the previous decision to undertake SEA on the Co-financed Seafood OP (*Section 2.2.5*).

BIM prepared a Screening Statement in August 2008 which summarised this decision to undertake an SEA on the National Seafood Plan and this is available from BIM's head offices in Dun Laoghaire.

3.3 SEA SCOPING

Scoping is the second stage in the SEA process. The purpose of scoping is to determine the environmental issues, and the level of detail, to be considered in the Environmental Report.

The SEA scoping methodology ERM undertook was to outline the environmental issues in a SEA Scoping Report and then consult with the designated environmental authorities (in Ireland) and in Northern Ireland

(transboundary consultations). The DEHLG's SEA guidelines were used as a guidance document during the SEA scoping process. In all consultation-cases, consultees were invited to make submissions on the Scoping Report.

The key areas which the consultees views were sought were:

1. Environmental issues in relation to the National Seafood Plan;
2. Environmental objectives and assessment criteria;
3. SEA assessment methodology;
4. Draft contents of the Environmental Report; and
5. Data sources and baseline data gaps.

3.3.1 National scoping consultation

The scoping consultation period was 4 weeks from the date of the submission of the draft Scoping Report (Monday 11th August 2008). The designated environmental authorities in Ireland are:

- Environmental Protection Agency (EPA);
- Department of Environment, Heritage and Local Government (DEHLG); and
- Department of Communications, Energy and Natural Resources (DCENR); formerly DCMNR (Department of Communications, Marine and Natural Resources).

3.3.2 Transboundary scoping consultation

Transboundary scoping consultation was undertaken with three agencies in Northern Ireland. It should be noted that significant transboundary effects with other Member States was not anticipated during the preparation of the Scoping Report and the decision to consult with agencies in Northern Ireland was on the basis of an all-island approach/philosophy which BIM are adopting in relation to their various activities and programmes. The NI agencies to whom the Scoping Report was submitted to was:

- Northern Ireland Environment Agency (NIEA): SEA Section;
- Department of Agriculture & Rural Development (DARD); and
- Loughs Agency.

A four week transboundary consultation period was provided for, which concluded on Friday 12th September 2008.

A summary of the submissions received during Scoping can be found in *Section 4* below.

3.4 PREPARATION OF THE ENVIRONMENTAL REPORT

The Environmental Report is the central document of the SEA process. The Report outlines that likely significant effects on the environment as a result of the implementation of the National Seafood Plan; it recommends mitigation measures to address significant adverse effects; and it will then outline a monitoring programme to monitor the effects of the implementation of the National Seafood Plan.

The information to be contained in the Environmental Report is presented in *Table 3.1* below, together with its location in this Environmental Report.

Table 3.1 Information to be contained in an Environmental Report (from Schedule 2 of S.I. 435 of 2004) and its location in this Environmental Report

Information item	Section
(a) An outline of the contents and main objectives of the plan or programme, or modification to a plan or programme, and relationship with other relevant plans or programmes;	2
(b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme, or modification to a plan or programme;	5
(c) the environmental characteristics of areas likely to be significantly affected;	5
(d) any existing environmental problems which are relevant to the plan or programme, or modification to a plan or programme, including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to the Birds Directive or the Habitats Directive;	5
(e) the environmental protection objectives, established at international, European Union or national level, which are relevant to the plan or programme, or modification to a plan or programme, and the way those objectives and any environmental considerations have been taken into account during its preparation;	2
(f) the likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors;	6
(g) the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme, or modification to a plan or programme	7
(h) an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information	2
(i) a description of the measures envisaged concerning monitoring of the significant environmental effects of implementation of the plan or programme, or modification to a plan or programme; and	8
(j) a non-technical summary of the information provided under the above headings.	NTS

Source: ERM (2008)

3.5 CONSULTATION

Following preparation of the Environmental Report, both the draft National Seafood Plan and the Environmental Report will be made available for public and statutory consultation (the three designated environmental authorities and other Member States mentioned in *Section 3.3.1* and *3.3.2* above). The statutory consultation period will be of four weeks duration.

Submissions on the content of the draft National Seafood Plan and on the Environmental Report are also invited from the fishing industry, other marine and coastal stakeholders and the interested public. This public consultation period will also be of four week's duration.

Following considerations of the submissions received, either the National Seafood Plan and/or the Environmental Report may need to be revised accordingly.

3.6 ADOPTION OF THE NATIONAL SEAFOOD PLAN AND THE SEA STATEMENT

It is a requirement that the consultations findings and submissions are considered when deciding to amend/modify (if required) and adopt the National Seafood Plan. It is also a requirement that the findings of the Environmental Report are considered prior to the adoption of the National Seafood Plan.

These important requirements are summarised in the SEA Statement. The SEA Statement is the final document which draws together SEA process for the National Seafood Plan. SEA Statement will, as a minimum, include the following elements:

1. summary of how the environmental considerations have been integrated into the National Seafood Plan;
2. how the submissions (including transboundary consultations) on the Environmental Report have been taken into account during the preparation of the National Seafood Plan;
3. the reasons for choosing the National Seafood Plan (as adopted) in light of other reasonable alternatives considered; and
4. the monitoring programme proposed to monitor the effects of the implementations of the National Seafood Plan.

The SEA Statement will be prepared when the National Seafood Plan is formally adopted by BIM. The Statement must be made publicly available with the adopted National Seafood Plan and a notice must also go in a widely circulated newspaper informing the public that the National Seafood Plan has been adopted.

4 SEA SCOPING CONSULTATION

4.1 INTRODUCTION

This section summarises the responses received during the SEA scoping consultation process. All responses received were considered in the preparation of this Environmental Report. *Section 4.2* summarises the responses received from the Irish designated environmental consultees and *Section 4.3* summarises the transboundary consultation submissions received from agencies in Northern Ireland.

4.2 IRISH DESIGNATED ENVIRONMENTAL CONSULTEES

4.2.1 *Environmental Protection Agency (EPA)*

A scoping meeting was held with the EPA, BIM and ERM in Dublin on 13th August 2008. The purpose of this consultation meeting was to take the EPA through the Scoping Report and also to summarise the key points that would be addressed in the Environmental Report. The EPA also presented BIM and ERM with their draft 'SEA Pack', which contained information regarding the SEA process and related information. During the course of the meeting, various issues were discussed and the following represents a summary of the key points:

- Importance of rural fishing communities;
- Need to consult with three agencies in Northern Ireland (Northern Ireland Environment Agency, Department of Agriculture and Rural Development and the Loughs Agency);
- Need to state the scope and focus of the National Seafood Plan (and state what is excluded from its influence);
- Requirement to prepare an SEA Screening Statement (confirming that BIM has chosen to undertake an SEA) and to make this available in BIM's head office;
- Potential amendments to Table 4.1 of the SEA Scoping Report (matrix illustrating the Measures which have the potential to have environmental effects);
- Consideration of the potential for cumulative effects with the Co-funded Seafood OP;
- Inclusion of an additional Environmental Objective under Water ("No conflicts with the objectives of the WFD");

- Consideration of the benthic environment under Soils;
- Reference to the NPWS 2008 Report on the conditions of Ireland's Natural 2000 sites;
- Discussion of site-specific consent procedures in relation to aquaculture and other forms of development; and
- Inclusion of additional environmental topic interactions and links (Figure 5.3 in the Scoping Report).

All of these points have been considered and addressed in the preparation of this Environmental Report.

4.2.2 Department of Communications, Energy & Natural Resources (DCENR)

The DCENR noted that they had no response to make at this particular time.

4.2.3 Department of Environment, Heritage & Local Government (DEHLG)

No response was received from the DEHLG.

4.3 TRANSBOUNDARY SCOPING CONSULTATION

4.3.1 Northern Ireland Environment Agency: SEA Section (NIEA)

A response was received from the NIEA by email on the 10th September 2008. The key points of their scoping consultation response is set out below, together with BIM's response (in italics).

"We note from your letter that the Department of Agriculture and Rural Development and the Loughs Agency have been consulted. We consider that the Department of Culture Arts and Leisure should also be included in your consultation because of its responsibilities for inland fisheries."

BIM confirms that it shall include Department of Culture Arts and Leisure of Northern Ireland in the consultation of the Environmental Report.

"The report aims to scope potential environmental effects for detailed assessment. Therefore, it would have been beneficial to receive more detail in the summary of measures to enable assessment of the likelihood and significance of environmental effects. This would help to clarify the basis for Table 4.1. For example, we believe that Fleet Restructuring (Measure 7) is likely to influence CO_2 output and thus the Air & Climate environmental topic."

BIM notes the point in relation to the level of detail of the Measures which comprise the National Seafood Plan. However, the specifics of some of the Measures had not been defined at the time of drafting the SEA Scoping Report. Thus the level of detail

regarding the Measures could only be described as presented in Report: it was not possible to go further in describing the Measures.

BIM agrees that further impacts over and above those as shown in Table 4.1 are likely to be identified (and have been) in this Environmental Report. In fact, a similar screening exercise has been undertaken again in this Report so as to ensure that all potential effects are identified. In relation to the likely influence of the Fleet Restructuring Measure, BIM agrees (as did the EPA during the scoping meeting referred to in Section 4.2.1) that CO_2 levels will be influenced.

"We consider that Socio-Economic Sustainability Measure (Section 2.3.10) has the potential for transboundary effects with Northern Ireland. We have reached this conclusion from section 2.3.10, which states that the development of aquaculture will be promoted in the cross-border region; and from Table 4.1, which indicates that this measure is anticipated to have environmental effects, including effects on flora and fauna. The relevant cross-border sites in Northern Ireland are likely to be Natura 2000 sites such as Lough Foyle and Carlingford Lough. As a consequence, the Aquaculture Industry Development Measure (Section 2.3.8) may also have transboundary impacts, especially in relation to the introduction of new species, new sites for aquaculture and the potential for pilot or prototype projects in high-risk areas."

BIM agrees that transboundary effects with Northern Ireland are likely. However, BIM are also of the view that <u>significant</u> transboundary effects are not likely (details regarding the range of transboundary effects can be found in Section 6.12 of this Report).

"We believe that, depending on the impact of the aquaculture regime possible, implications for cultural heritage (largely wreck sites) in Carlingford and Foyle, should also be considered."

BIM notes and agrees with NIEA's point regarding the potential cultural heritage effects in Carlingford Lough and Lough Foyle. Cultural heritage effects are addressed in Section 6.10 of this Environmental Report. The aquaculture licensing process may as appropriate require that a archaeological assessment is carried out prior to issuing consent. It should also be noted that BIM submitted the Scoping Report to the Loughs Agency and provided them with an opportunity to comment and that they will have further opportunity to comment during this consultation period on the Environmental Report..

"We consider that an additional objective should be included in the Biodiversity, Flora and Fauna topic to "Minimise the spread of non-native invasive species."

BIM has agreed to add in this additional Environmental Objective.

"The scoping report does not mention the spread of non-native or invasive species and their association with the Exchequer-funded Irish Sea Food Operational Programme. This is an important issue, as attempts to effectively

control or eradicate invasive non-native species may be hampered by the presence of nearby aquaculture interests."

BIM shall address the issue of non-native/invasive species in the Environmental Report and acknowledges the important of this issue. BIM is closely involved with the Invasive Species Ireland project and holds a seat on it Marine Technical Working group. It is recognised that aquaculture can act as a vector to the transport of alien species but can also be impacted negatively by invasions. Through its involvement in the Invasive Species Ireland project, BIM is able to provide up to date information and advice on this subject directly to the aquaculture sector.

"We would also like to see in the Environmental Report further information about the potential impacts on aquaculture, as described in the bullet points within the section about Benthic monitoring of aquaculture production (Section 5.2.4)."

The Environmental Report presents a summary of relevant and available baseline environmental information in Section 5.2 (Biodiversity, flora and fauna) while Section 6.3 presents the assessment against Biodiversity, flora and fauna Objectives.

"Wrecks often form the basis of particular habitats therefore we believe that the potential interrelation between habitats and cultural heritage should be highlighted in Section 5.10."

This additional environmental topic interaction of cultural heritage and biodiversity, flora and fauna has been noted in Section 6.13 of this Environmental Report.

"The desirability of acquiring wreck data should be noted, possibly from datasets held by the DoEHLG. Targeted assessment and recording should also be considered both in order to avoid potential damage and to produce a record if damage or removal are unavoidable as part of seafood operations – this could apply to port and harbour developments and others that may effect the inter-tidal and offshore zones."

BIM notes and acknowledges the importance of this issue. However, BIM wishes to point out that the issue of potential impacts on wrecks and surveying of similar cultural resources is typically resolved at the aquaculture licensing stage i.e. post the adoption of the National Seafood Plan. This Environmental Report will not be presenting or considering site-specific data held by the DoEHLG as BIM are of the view that this level of data gathering and assessment is not warranted, given the strategic nature of the National Seafood Plan and the fact that the National Plan will not be defining locations for development.

"The risk to humans of consuming contaminated shellfish should be included in the section 5.12 on inter-relationships under water and human health on p.36 of the report."

This additional environmental topic interaction of human health and biodiversity, flora and fauna has been noted in Section 6.13 of this Environmental Report.

"Any updated information about the development of ICZM and its association with the Exchequer-funded National Seafood Planerational Programme would be useful."

CLAMS (Co-ordinated Local Aquaculture Management Systems) and Inshore Fisheries Plans are two initiatives to be supported under the National Seafood Strategy. Working together they ensure that all operators within defined areas are aware of and act upon the issues surrounding their operations both internally and from other coastal users. The existence of CLAMS and Inshore Fisheries Plans mean that these sectors are organised and ready to positively contribute to ICZM initiatives when formal national structures for its implementation are introduced.

"The monitoring of environmental effects and mitigation of negative environmental impacts are both important elements of the SEA process and should be carefully considered from the outset of the process."

BIM acknowledges the importance of the role that both mitigation and subsequent monitoring plays in the SEA process. Further details on these important SEA aspects are presented in Sections 7 and 8 respectively.

4.3.2 Department of Agriculture & Rural Development (DARD)

No response was received from DARD.

4.3.3 Loughs Agency

No response was received from the Loughs Agency.

5 BASELINE ENVIRONMENTAL ISSUES

5.1 INTRODUCTION

This section provides a summary of the baseline environmental issues with regards to the National Seafood Plan Environmental Report. The data will be presented under the headings of the environmental topics found in of S.I. 435 of 2004. Please note that this section is not intended to be a detailed review of all the environmental issues in relation to the National Seafood Plan, rather, it is a brief summary of the key points. For a more detailed treatment of these issues, the reader is referred to *Ireland's Marine and Coastal Areas and Adjacent Seas: An Environmental Assessment*, by the Marine Institute (1999). Furthermore, the level of detail presented in this section is at a national level, which is suitable given the strategic (national) level of the Plan. Site-specific data has not been obtained as it would not have assisted the assessment process. The National Seafood Plan does not define or specify the location for developments.

5.2 BIODIVERSITY, FLORA AND FAUNA

5.2.1 *Biological status of fish species*

In 2004, an estimated 1.5 million tonnes of fish were harvested from Irish waters. However, over 75% of fish stocks in these waters are outside safe biological limits (i.e. at low stock size or unsustainable levels of exploitation). General trends in fish stocks show that over the period 1999-2003, all significantly fished pelagic (open water fish species) and demersal (bottom-dwelling species) stocks showed decreases (apart from mackerel). Of particular concern are cod and sole stocks, which declined by 60% and 36% respectively in the above period (EPA, 2006).

Information on the state of the main commercially exploited fisheries resources in waters around Ireland is provided in a DCMNR Report *'Decommissioning Requirements for Ireland's Demersal and Shellfish Fleets'* (2005). Of the information provided for 32 fishing areas (some species have multiple entries as their fish status varies across a number of geographic areas), 50% of their stock trends are classed as either decreasing, unknown or uncertain. In relation to stock size, of the 32 data entries, almost 60% are classed as either lowest, low, unknown or uncertain. Only 25% of fish stock data entries are classed as being average.

Management and control of fish stocks in Irish waters is achieved through the use of regulated catch limits (measured in tonnes) called Total Allowable Catch (TAC), which is reviewed each year and based on ongoing research and monitoring. TACs are set as a central function of the EU Common Fisheries Policy through a scientifically informed negotiated EU process. The Irish

Marine Institute publishes TAC and other scientific data each year in their Annual Stock Book. TACs for 2007 (and scientific advice for 2008 [1]) noted that of the 41 stocks, 30 had recommendations for lower TACs (in comparison to the 2007 TACs), 6 had a recommended increase over the 2007 TAC with 5 recommended to remaining the same as the 2007 TAC.

Other fishery management tools include controls on season and landing size such as commonly applied to inshore shellfish fisheries. Vessel size, license limitations and geographically limited gear exclusions also apply to some, the inshore fisheries in Ireland.

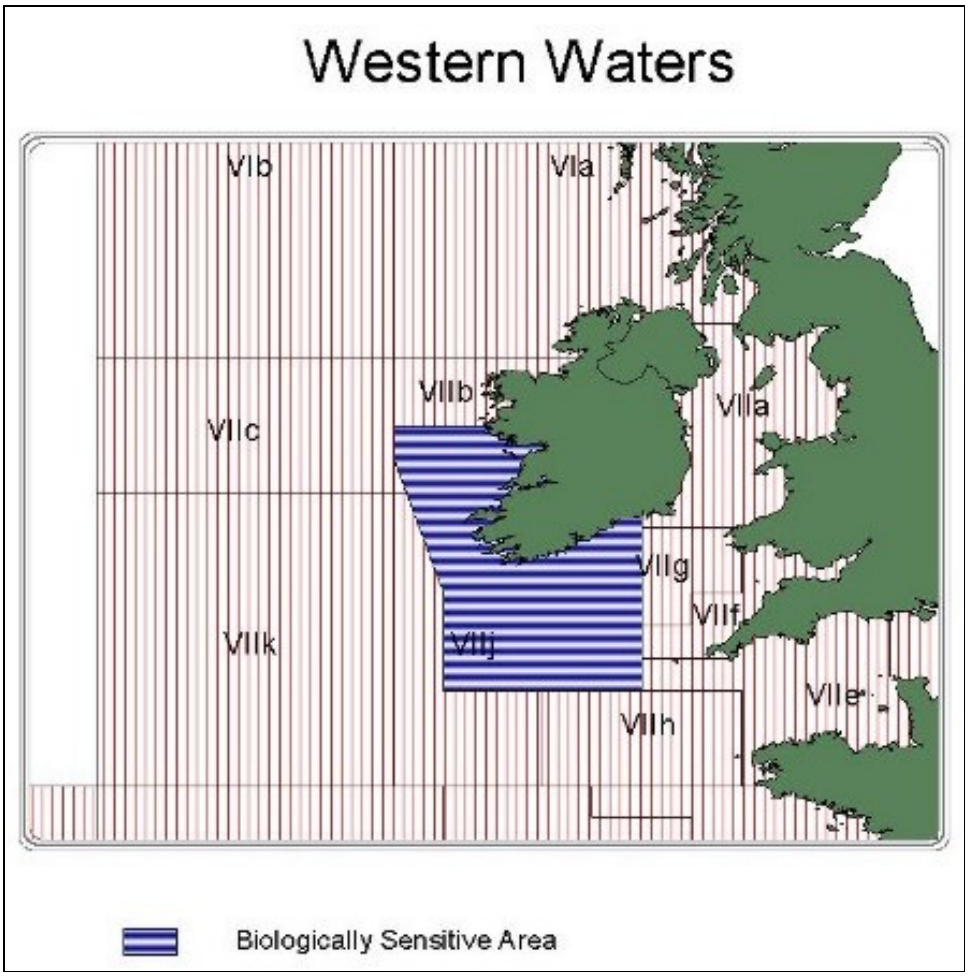
Pressure on the marine environment is exacerbated by the non-commercial fish and undersized commercial fish being discarded when brought up with the target fish species. Immediately following the catch, fishermen sort fish and other marine life retaining the marketable and legal element of the catch and discarding those which are legally undersized and species of no commercial interest. Unfortunately, most of these discarded fish die. Discarding is largely a repercussion of the management measures in place (in particular TACs and quotas), fishermen must discard so that they land only the species for which they have quotas. Data on the rate and volume of discards is limited. The International Council for Exploration of the Seas (ICES), in their document 'Environmental Status of European Sea' (2003) notes (p.41) that North Sea discards corresponds to approximately 22% of total North Sea landings. In other fisheries, such as haddock fisheries, the discard rate can be very much higher, especially for juveniles. The Commission has commenced discussions on a possible ban on discarding in European fisheries, it will be a high priority issue in the coming years.

5.2.2 Biological Sensitive Areas

In 2003 the EU Commission established (Council Regulation (EC) No 1954/2003) a Biologically Sensitive Area (BSA) off the south west of Ireland and the area is shown on *Figure 5.1* below. The basis for this designation is the high concentration of juvenile fish. The EU also established a specific fishing effort regime inside the BSA and outside the BSA for demersal fishing vessels as well as scallop and crab fisheries (i.e. different fishing effort regulations apply inside and outside of the box). Such a specific fishing effort regime is intended to protect juvenile fish, thus conserving fish species within the BSA.

(1)http://www.marine.ie/home/publicationsdata/publications/The+Stock+Book/

Figure 5.1 Biologically Sensitive Area



Source: *www.ec.europa.eu*

5.2.3 Natura 2000 sites

Ireland's biodiversity and flora & fauna resources are of national and international significance. The importance of biodiversity is well established at an international level through the United National Conference on Environment and Development in Rio (Brazil) in 1992. Ireland ratified the Convention on Biological Diversity in 1996 and in signing up, Ireland committed to conserve and maintain biological diversity in the State.

Of central importance is the number of Natura 2000 conservation sites in the State. There are two classes of sites which are European-protected:

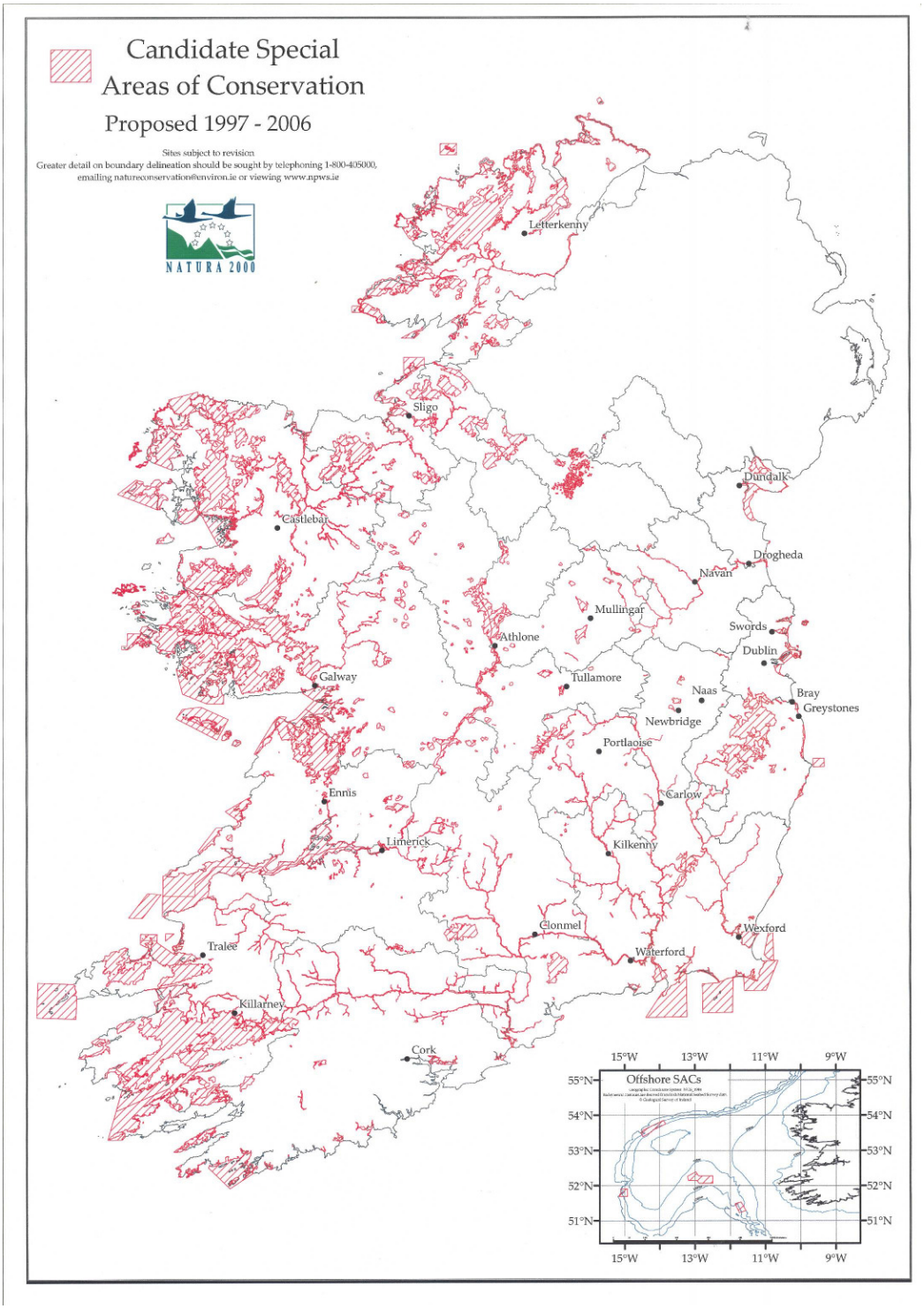
- *Special Areas of Conservation (SACs)*: these are prime wildlife conservation areas in the country, considered to be important on a European as well as Irish level. Such sites are protected under the EU Habitats Directive(92/43/EEC), transposed into Irish law in the European Union (Natural Habitats) Regulations, 1997.

- *Special Protection Areas (SPAs)*: these are conservation sites with a purpose for the protection of bird species under the EU Birds Directive (79/449/EEC).

Ireland has formally advertised 424 such conservation sites as proposed candidate SACs (pcSACs), of which 410 have been transmitted and formally adopted by the EU as candidate SACs (cSACs). The remaining 14 pcSACs are either only recently advertised (marine offshore sites) or under appeal (as part of the site designation process) (EPA 2006). Currently, cSAC and pcSACs cover an area of approximately 1,349,945 hectares. These are shown in *Figure 5.2* below.

Further details regarding SAC and SPAs and their link to existing aquaculture and fishing activities can be found in *Annex A*.

Figure 5.2 SAC (& cSAC) distribution in Ireland



Source: NPWS (2006)

Ireland has designated 128 sites as SPAs. An additional seven advertised sites are awaiting formal designation.

Of particular relevance to the Irish National Seafood Plan (especially in relation to marine fishing activities) are the four offshore pcSACs: NW

Porcupine Bank, SW Porcupine Bank, Belgica Mound and the Hovland Mound. These are shown in *Figure 5.2* above.

Annex IV also protects certain species, such as all cetaceans, while Annex V species are permitted to be carefully exploited.

NPWS completed a summary conservation status report (1) in 2007. This summary considered the conservation status of all the Annex 1 habitats in Ireland. A three-point rating system was used: good, inadequate and bad, under a range of indices, such as range, population, future prospects. Additionally, an overall assessment was made. Of the 59 habitat types, 28 (47.5%) have been designated as being poor on an overall basis, with 27 (45.7%) being classified as inadequate and 4 (6.7%) classified as good.

This report also assessed the future prospects of these habitats. The assessment concluded that 24 (40.6%) habitat types had a poor future, 31 (52.5%) habitats had an inadequate future and 4 (6.7%) had a good future. Further details on the habitats of relevance to the Irish National Seafood Plan can be found in *Annex A*.

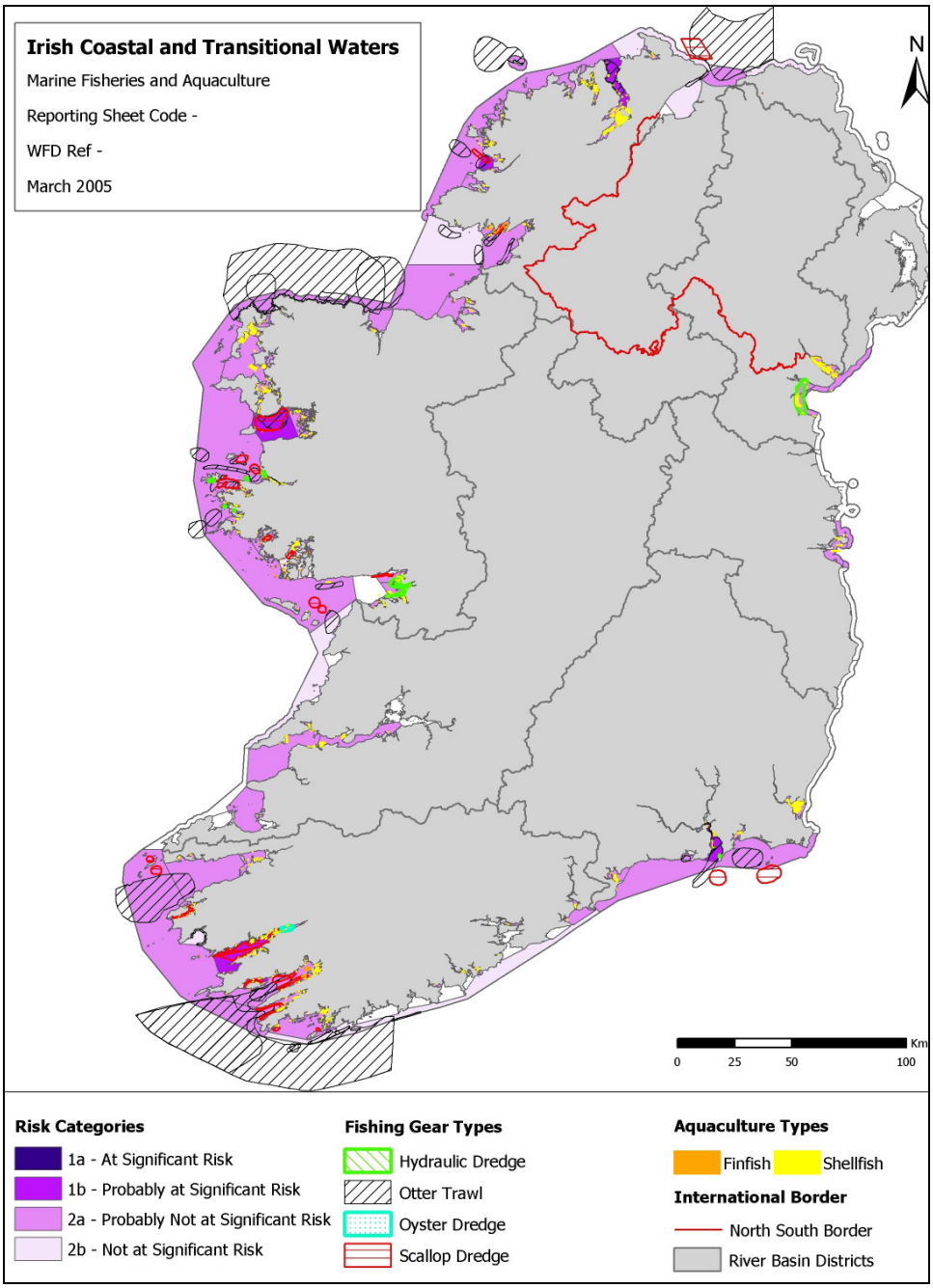
NPWS are also required to prepare Conservation Management Plans for all of the cSACs in Ireland. To date, 47 Conservation Management Plans have been published but these are for terrestrial sites only (2), representing 10.6% of Ireland cSAC network. NPWS are working towards completing Conservation Management Plans for the remainder of the cSAC network. The future development of these Management Plans, coupled with the future requirements of the various RBMPs, is likely to result in a long-term improvement of the conditions and health of Ireland's network of designated sites. However, in the short-term, the current trend of general poor conditions of the majority of the sites is likely to continue.

5.2.4 Water Framework Directive Characterisation Report

Figure 5.3 below is an extract from Ireland's Characterisation Report, as required under Article 5 of the Directive. It also shows locations where particular fishing gear types are used.

(1)http://www.npws.ie/en/CurrentResearchProjects/Cross-cutting/
(2)http://www.npws.ie/en/PublicationsLiterature/ConservationManagementPlans/

Figure 5.3 Irish Coastal & Transitional Waters Risk Assessment



Source: Figure 3.6 of Ireland Article 5 Characterisation Report (*www.wfd.ie*)

The Characterisation Report notes (3.3.1, p 3-6 and Table 3-3) the majority of coastal and transitional water bodies are not classed as being 'at risk' of meeting future Water Framework Directive requirements. *Table 5.1* presents a summary of this data.

Table 5.1 Marine water bodies risk assessment (WFD Directive)

RBD	Reporting Category	Number of Water Bodies at risk (1a + 1b)	% by nbr of water bodies	% by water body area
E-RBD	Transitional	0	0	0
	Coastal	0	0	0
SE-RBD	Transitional	1	4.6	31.3
	Coastal	1	7.0	3.3
SW-RBD	Transitional	0	0	0
	Coastal	2	7.4	5.7
Shannon-IRBD	Transitional	0	0	0
	Coastal	0	0	0
W-RBD	Transitional	0	0	0
	Coastal	1	3.3	4.3
NW-RBD	Transitional	0	0	0
	Coastal	2	4.4	5.9
Neagh/Bann RBD	Transitional	0	0	0
	Coastal	0	0	0

Source: Table 3-3 of Ireland's Characterisation Report (www.wfd.ie)

However, there are coastal areas which are classed as being at risk and these are:

- Lough Swilly;
- Gweebarra Bay;
- Clew Bay;
- Kenmare River;
- Bear Haven; and
- Waterford Harbour.

However, note that the above risk assessment only refers to marine and coastal activities. Those areas designated as being at risk are so for a range of reasons (such as anthropogenic pollution and physical/geomorphological changes). Furthermore, ongoing monitoring, as part of the WFD, and the development of RBMPs may highlight further coastal and transitional water bodies which may be at risk of not attaining WFD requirements.

In the medium to long-term, the implementation of then various requirements of RBMPs are likely to result in improvements in future water and aquatic quality. Additionally, RBMP requirements and recommendations may also impact and restrict potential future locations of aquaculture activities, but also result in new/additional locations, which are currently not suitable, for future aquaculture activities. Draft RBMPs and PoMs are expected in early 2009 and are anticipated to be adopted by January 2010.

5.2.5 National Biodiversity Plan

Ireland's National Biodiversity Plan 2002 - 2006 was prepared by the Irish Government in April 2002. It is the main vehicle by which Ireland is meeting its commitments under the Convention on Biological Diversity and the EC Biodiversity Strategy. The focus of the National Biodiversity Plan is, therefore, to integrate biodiversity concerns into all sectoral activities over time. The National Biodiversity Plan consists of 91 Actions across 15 specific areas, one of which is Marine & Coastal, which has seven Actions (nos. 85 to 91). These are as follows:

85 Prepare and adopt a National Integrated Coastal Zone Management Strategy making specific provision for the conservation of biodiversity.

86 The Marine Institute and the Central and Regional Fisheries Boards will advance the conservation, as well as the sustainable use, of biodiversity, through the establishment of biodiversity units, the provision of appropriate legislative responsibilities and other measures.

87 Develop a National Marine Biodiversity Resources Database as part of the National Biological Data Management System.

88 Enhance surveys and research on marine biodiversity, through the implementation of a prioritised programme of surveys and mapping of marine benthic species and communities.

89 Introduce national measures to research and reduce adverse effects of marine fisheries on biodiversity, and within the EU, continue seeking to ensure the Common Fisheries Policy and marine fisheries provide for the conservation of fish species and marine biodiversity generally.

90 Draw up Guidelines and a Code of Best Practice on Aquaculture and Biodiversity.

91 Continue, and where necessary, enhance, in line with relevant EU and international instruments (e.g. the OSPAR Convention), existing programmes and measures to control and monitor pollution of coastal and marine ecosystems.

One of the actions of the National Biodiversity Plan is for each Local Authority to prepare a Local Area Biodiversity Plan in consultation with relevant stakeholders. Under the Convention, Ireland has committed to halting the loss of biodiversity by 2010.

5.2.6 *Seabed habitats*

The use of mobile fishing gear that contacts the seabed, in particular bottom trawls, dredges can have a significant impact on the commercial fish stocks, marine biodiversity and the habitats present.

Commercial trawling and dredging along the seabed is well known to affect the structure and composition of bottom-dwelling communities. In general, it appears that small, short-lived species are favoured, while longer-lived, larger species suffer the greatest damage and disturbance.

Table 5.2 below is a matrix which summarises the impacts of mobile fishing gear fisheries. This matrix (1) was developed in the context of a Water Framework Directive workshop.

Table 5.2 Matrix of potential gear interactions with habitat types

	Box Dredge	**Scallop Dredge**	**Otter Trawl**	**Beam Trawl**	**Hydraulic Dredge[2]**
Mearl[1]	High	High	High*	High*	High*
Coarse Sand	Moderate	Moderate	Low	Moderate	High
Fine sand	Moderate	High	Moderate*	Moderate	High
Muddy Sand	Moderate	High	Moderate	High	High
Mud	High*	High*	High	High	High*
Mixed Sediment	Moderate	Moderate	Low*	Moderate	High
Zostera[1]	High	High	High*	High*	High*

Notes:

***** Applicability in question.

[1] Given the highly sensitive nature of mearl and *Zostera* sp. beds any physical disturbance in the form of fishing activity could be highly destructive (reducing the maerl to rubble and uprooting the eel grass) and greatly disturbing the species that rely on them for habitat and refuge.

[2] The activity of the hydraulic dredges is to fluidise the seabed to the depth of the target species, in the case of razor clams this could be > 20cm. Effectively, much of the substrate and its constituents is entirely removed or relocated. Mortality of associated (soft bodied) organisms is very high and the impact is considered high in all instances.

Source: www.wfdireland.ie

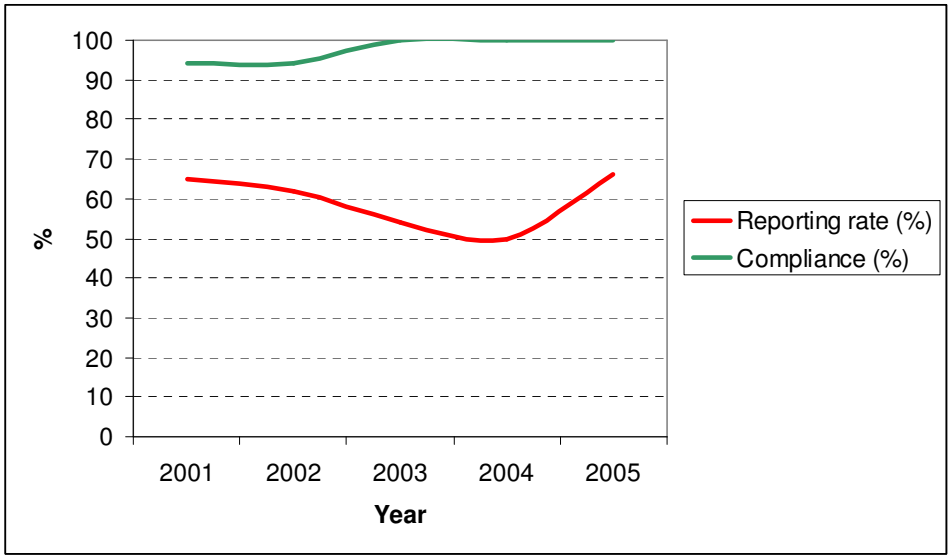
5.2.7 *Benthic monitoring of aquaculture production*

The Marine Institute collates annual benthic monitoring data from finfish aquaculture sites, based on reports submitted by license holders to the former DCMNR (now the Department of Agriculture Fisheries and Food DAFF). Although the level of reporting covers only 66% of the active aquaculture sites

(1) www.efdireland.ie/documents/Characterisation%20Report/Background%20Information/Review%20of%20Env%20Impacts/surface%20Water%20Risk%20Ass/Fishing_Risk_Assessment_Guidance.pdf

in Ireland (an improvement on previous years), all the sites which reported were fully compliant. The Marine Institute carried out audits at two sites to verify the findings, which the audit confirmed. Historic reporting and compliance data is illustrated in *Figure 5.4* below.

Figure 5.4 Benthic monitoring reporting and compliance data for finfish aquaculture sites in Ireland



Source: BIM (2006)

The data shows an excellent rate of compliance, albeit for an incomplete reporting data set. Non-reporting is due to the fact that some older licenses do not have a monitoring requirement as a licensing condition. In addition when sites are in fallow, the operators often choose not to incur the expense of monitoring as there are no fish present. In both cases, such non-reporting contributes to the published statistics. It should be noted that the Marine Institute does not consider unreported sites in the compliance rate.

Finfish production also requires the use of fish medicines, which can have adverse impacts on the aquatic environment if poorly or incorrectly used. However, therapeutants obtained must be prescribed by veterinary surgeons, and used under their care and control.

5.2.8 Invasive species

BIM is closely involved with the Invasive Species Ireland project and holds a seat on it Marine Technical Working group. The Invasive Species Ireland Project is an all island initiative and is a joint venture between the Northern Ireland Environment Agency (NIEA) and the National Parks and Wildlife Service (NPWS) to implement the recommendations of the 2004 Invasive Species Ireland Report. It is recognised that fishing vessel movements and aquaculture activities can act as a vector to the transport of alien species but these seafood sector can also be impacted negatively by invasions. Through its involvement in the Invasive Species Ireland project, BIM is able to provide

up to date information and advice on this subject directly to the aquaculture sector. To date, as part of the project, BIM has been involved in a national risk assessment, participated in the collation of codes of practice, distributed information leaflets to the sector and organised an invasive species awareness presentation at a national shellfish conference.

5.3 POPULATION

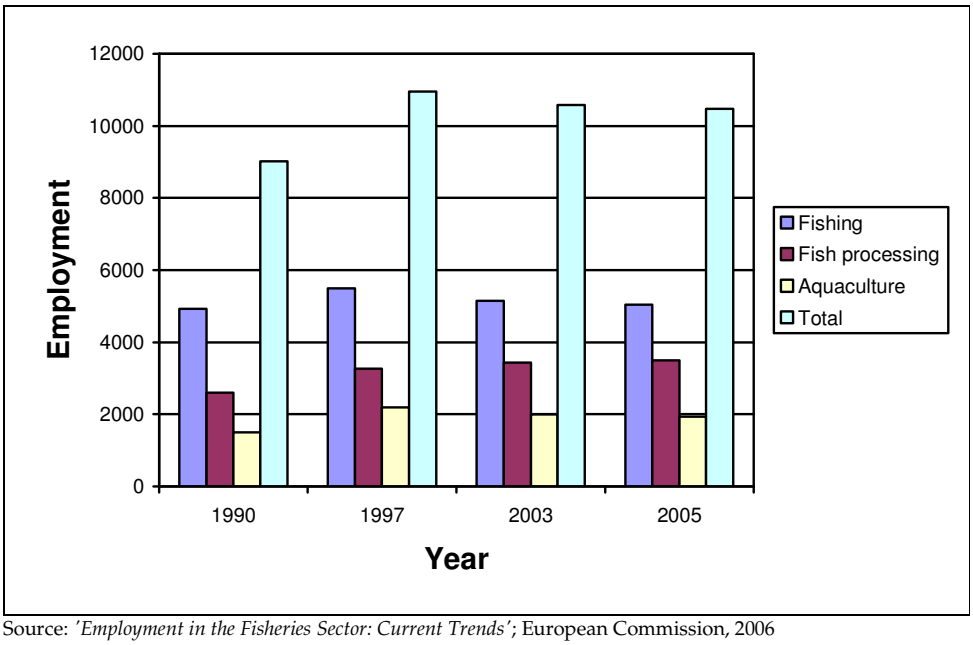
Fishing, aquaculture and seafood process activities are primarily based in rural and coastal communities. Thus, the sector provides a vital source of employment in these communities. Fishing activities and seafood processing is concentrated in coastal Counties such as Donegal, Galway, Cork, Kerry, Waterford, Wexford, and Dublin. Ports such as Killybegs (Donegal), Castletownbere (Cork), Dunmore East (Waterford), Rosseveal (Galway), Dingle (Kerry) and their hinterlands are heavily dependent on the seafood processing and services industries. Aquaculture activities are concentrated at coastal locations in Kerry, Cork, Clare, Galway, Mayo, Sligo, Donegal, Louth, Wexford and Waterford.

Due to the poor state of most commercial fish stocks landings of the Irish Fleet have been declining in most areas for many years, consequently employment in fishing and related industries has declined. This is illustrated by the fact that in 1996, there were 2,892 people in Ireland employed in fishing and related works (this does not include aquaculture and seafood processing employment). This fell by almost 26% to 2,142 in 2002 (employment data from Census 2006 was not available at the time of writing). The fall off the fishing and related employment has been somewhat off-set by the increase in the aquaculture industry.

However, the Co-funded Irish seafood OP (BIM, 2007) notes that there are over 11,600 fishing or aquaculture related jobs in the coastal regions, providing a key employment source to these isolated communities. The difference in data between the Census and BIM data is likely to be related to the classification of employment in both data sets. In addition, BIM's data includes secondary and indirect employment in the seafood sector.

An EU report into employment in the fisheries sector (European Commission, 2006) presented employment data from 1990 to 2005, which is shown in *Figure 5.5* below.

Figure 5.5 Employment data for Ireland's fisheries sector



Source: *'Employment in the Fisheries Sector: Current Trends'*; European Commission, 2006

The data shows that, since 1997, there has been a slight decline in employment in the fishing (- 1.1%) and aquaculture (- 1.6%) and a small increase in fish processing (+ 0.9%).

In terms of income from employment in the fisheries sector, it is evident that fisheries-related employment pays considerable less than the national average income. This is illustrated using earning levels data from the above EU report, which notes that the national earnings average in Ireland in 2003 was €35,411 (index level = 100), whereas the average income from fisheries was €21,163 (index level = 60), 40% lower than the national income average (EU, 2006). Income from fishing was an average of €9,500 (index level = 27). While income from the fisheries sector is considerably lower than Ireland's average income, the sector still provides valuable employment for remote and isolated populations where there is limited alternative employment available.

Regarding future population trends, it is likely that the current trend of decreasing seafood-based working population will continue, as will the trend of decreasing income from the sector, as evidenced by the recent (2008) nationwide protests by various members of the fishing community.

5.4 HUMAN HEALTH

5.4.1 Shellfish quality

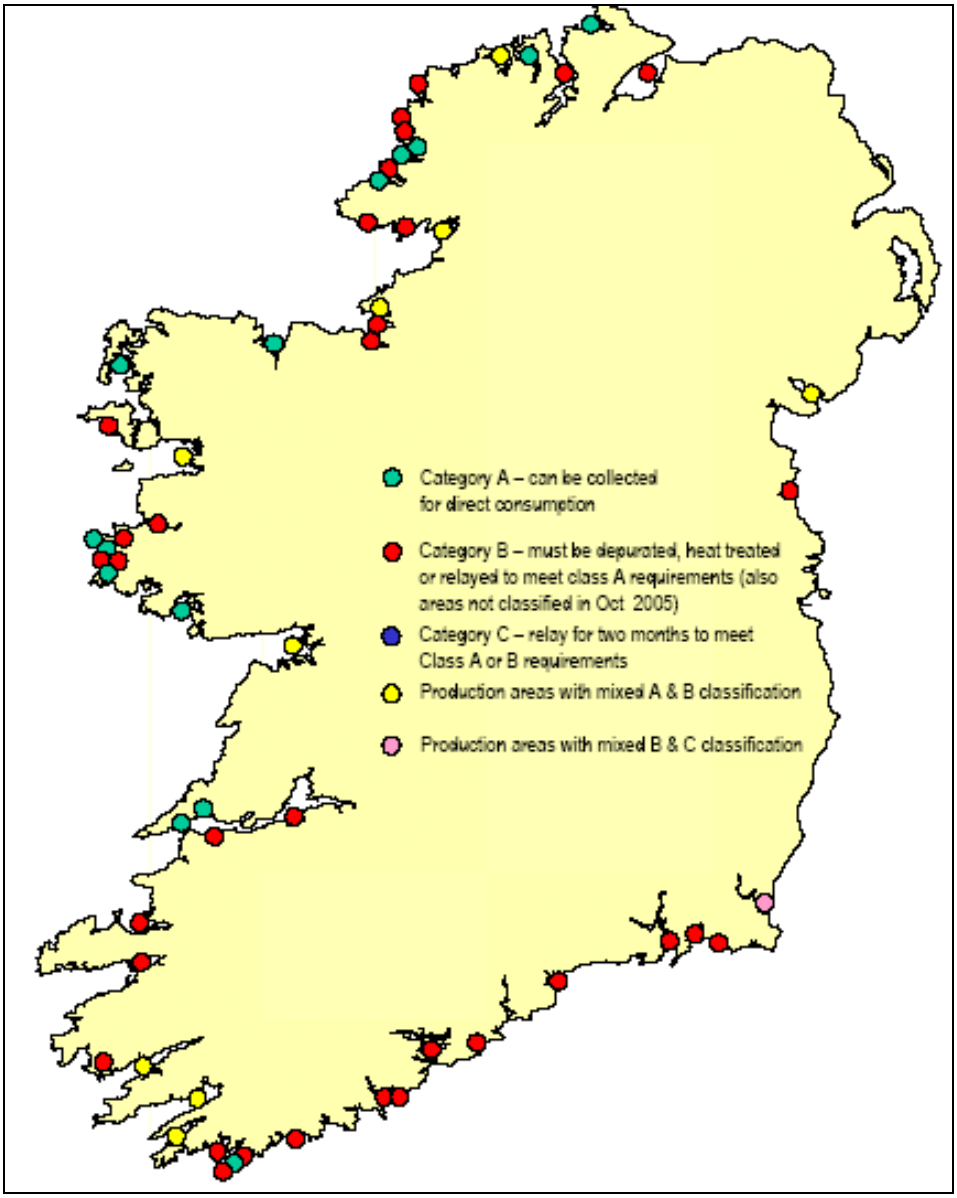
EC Directive 91/492/EEC (health conditions for the production and the placing on the market of live bivalve molluscs) contains information and requirements for selling shellfish in relation to human health. This Directive has recently been superseded by the Food Hygiene Regulations (Regulations (EC) No. 852/ 2004, (EC) No. 853/2004 and (EC) No. 854/2004).

The former DCMNR has been undertaking monitoring of the quality of shellfish since 1985. In order to protect human health, licensed shellfish growing areas are routinely monitored and classified as below:

- A - can be consumed directly;
- B - can be consumed directly after 48 hours purification; and
- C - can be consumed following relaying for at least two months.

In 2005, 30% of sites were Class A, compared to 23% the previous year. However, in 1991 - 1994, 55% of sites were Class A. No class C sites were reported in 2005. The EPA notes (2006) that "overall, Ireland has a proactive approach to the protection of health through monitoring of shellfish waters, but the general decline in class A stocks since 1994 is a cause for concern". This data is illustrated in *Figure 5.6* below. Causes of the decline in shellfish quality can usually be attributed to pollution of waters from anthropogenic sources, such as inadequate treatment of wastewater effluent.

Figure 5.6 Microbiological classification of shellfish Production Areas (Oct. '05)



Source: Status of Irish Aquaculture 2005 (BIM *et al*, 2006)

5.4.2 Shellfish monitoring

Annual monitoring data for contaminants in shellfish is undertaken annually by the Marine Institute. During 2005, shellfish samples were taken at 36 locations and analysis was undertaken for metals. Results show that all shellfish samples tested for mercury and lead were well within the standard value limit, set by the European Commission. All samples were within the cadmium limit. No specific area growing shellfish stood out with regards to having elevated levels of zinc, chromium, silver or nickel. Generally, it can be said that shellfish produced in Ireland are clean and unpolluted (BIM, 2006).

5.4.3 Designated shellfish areas

Directive 79/932/EC identifies a total of 14 designated shellfish areas. For each of these areas, an action programme is established to ensure good water qualify with a view to ensuing good quality production of shellfish food. The 14 areas are:

- Aughinish Bay, Co. Galway;
- Bannow Bay, Co. Wexford;
- Bantry Bay Inner, Co. Cork;
- Carlingford Lough, Co. Louth;
- Clarinbridge-Kinvara, Co. Galway;
- Clew Bay, Co. Mayo;
- Cromane, Co. Kerry;
- Glengarriff, Co. Cork;
- Kilkieran, Co. Galway;
- Killary, Co. Galway;
- Kilmakilloge, Co. Kerry;
- Maharees, Co. Kerry;
- Mulroy Bay, Co. Donegal; and
- Roaringwater Bay, Co. Cork.

An additional 54 Shellfish waters across all the major bays in Ireland are currently undergoing designation. Such designations require that minimum water quality standards are achieved and maintained.

5.5 SOIL

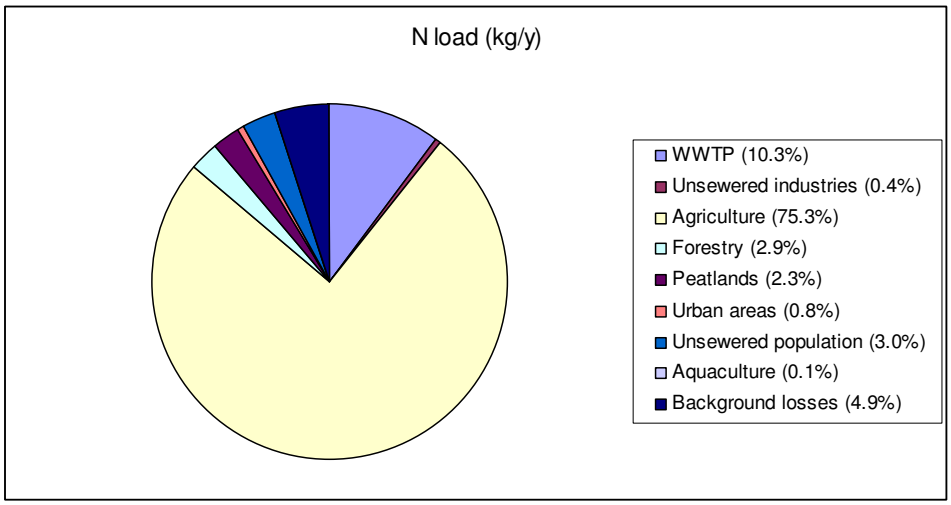
This terrestrial element of this environmental topic was partially scoped out of the Environmental Report as the issues associated with soils are not significant with regards to the National Seafood Plan. The relevant aspect of Soils relates to benthic substrates. Potential benthic impacts are considered at various stages in the Environmental Report as appropriate under the Biodiversity, Flora and Fauna section.

5.6 WATER

5.6.1 Nutrient loads from aquaculture

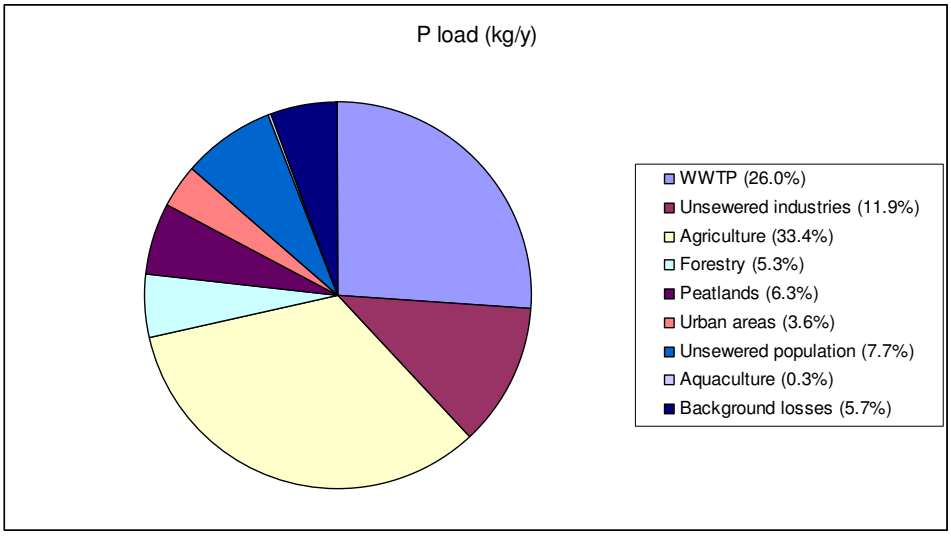
The Characterisation and Analysis of Ireland's River Basin Districts (2005) is Ireland's submissions to the EU and is required under Article 5 of the Water Framework Directive. The Report contains information on the nutrient contribution of aquaculture to water bodies. National-level data is presented for nitrogen (N) and phosphate (P) in *Figures 5.7* and *5.8* below while *Figure 5.9* presents nitrogen and phosphate data breakdown per RBD.

Figure 5.7 National-level nitrogen data



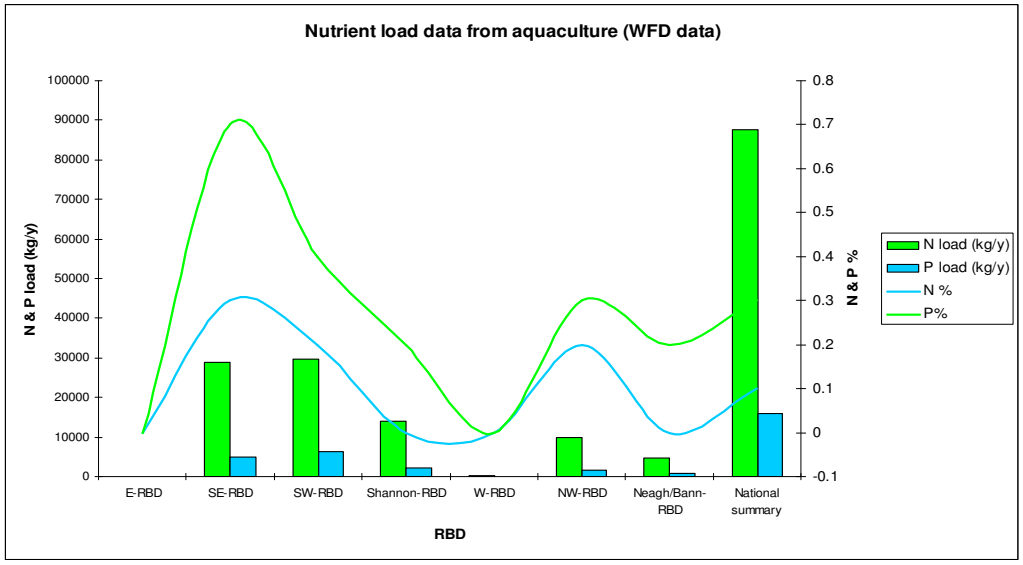
Source: www.wfdireland.ie

Figure 5.8 National-level phosphate data



Source: www.wfdireland.ie

Figure 5.9 N & P data per RBD



Source: www.wfdireland.ie

Figure 5.7 and *5.8* show that aquaculture makes up a relatively small contribution to the national nitrogen and phosphate levels. On a regional basis, *Figure 5.9* shows that the South East and South West RBDs are the main RBD areas which contribute to the national nitrogen and phosphate loads.

It can be seen that, on a national basis, aquaculture is not a significant contributor of N and P levels.

The implementation of the RBMP and PoMs are likely to result in improvements to water quality in Ireland, due to the requirement to attain good status in relation to ecology and water quality by 2015.

5.6.2 Sea lice

Sea lice levels are also monitored in Ireland. Sea lice are regarded as having a commercially damaging effect on cultured salmon in the world with major economic losses to the fish farming community resulting per annum. They affect salmon in a variety of ways: mainly by reducing fish growth, loss of scales which leaves the fish open to secondary infections and damaging of fish which reduces marketability (1).

In relation to sea lice, the Government has taken a precautionary approach in terms of possible adverse effects on migratory salmonids. There is a national inspection scheme (established in 2000 by the then DMNR and carried out by the MI) monitoring the average number of ovigerous female sealice per fish. When lice loading per fish exceed a pre set 'trigger' level the advice is given to undertake lice treatment of the caged fish. The trigger levels are set at the

(1) O'Donohoe et al, 2003.

lowest possible level possible under the terms of veterinary good treatment practice.

The trigger levels are very challenging to achieve as they are set at an extremely low level, which puts strong adaptive pressure on the louse, which has shown the ability to rapidly develop tolerance to particular treatment types. In 2007 the overall level of inspections for which results were below the trigger levels was 70.03%. This rate of meeting the trigger standard has progressively fallen ('04: 79.5%, '03: 80.7%, '02: 87%, '01: 91%) and the reasons for this are thought to be a combination of increasing infestation pressure because of the higher seawater winter temperatures allowing a greater number of lice to overwinter and increasing difficulty in carrying out effective treatments due to other issues, such as resistance and problems with fish health.

5.7 AIR

No data on odour complaints from seafood processing facilities was available. The processing facilities are generally located in areas which have been historically associated with the fisheries sector. In addition, odour from existing facilities is monitored by the relevant Local Authority and addressed should a complaint be received by them. Any proposed facilities will have the issue of potential odours considered as part of the planning applications process.

5.8 CLIMATIC FACTORS

No data is available on the contribution of the fisheries sector to Ireland's greenhouse gas emissions. However, the Irish fishing fleet is fuelled by diesel engines and aquaculture activities and seafood processing facilities do consume electricity, the majority of which is generated through the combustion of fossil fuels.

5.9 MATERIAL ASSETS

5.9.1 Ireland's fishing fleet

A summary of Ireland's fishing fleet is presented in *Table 5.3* below.

Table 5.3 Structure and details of Ireland fishing fleet (September 2007 data)

Class	Type	No. of vessels	GT	kW
Pelagic & Polyvalent	RSW tank-vessels	22	21,810	33,371
	Inshore: < 12 m	1,448	5,075	45,951
Beam trawl	Coastal: 12 - 18 m	110	3,937	16,588
	Near water: 18 - 24 m	105	14,121	39,283
	Offshore: > 24 m	52	13,450	32,028
	Polyvalent tank vessels	4	1,247	2,881
	Viver tank (crab)	6	1,179	2,108
		14	1,920	6,866
Specific	General	122	2,487	12,499
	Scallop	6	793	2,488
Total		***1889***	***66,019***	***194,063***

Source: draft Irish National Seafood operational Programme (BIM, 2007)

The above table also quotes data from a report (*Decommissioning Requirements for Ireland's Demersal and Shellfish Fleets*; 2005) which quotes data from the Irish register of fishing vessels. It can be seen that, in the period 2005 - 2006, there was a 30% increase in the number of vessels; a 3.8% increase in total fishing capacity (gross tonnes); and an 8% increase in total engine power (kW).

5.10 CULTURAL HERITAGE, INCLUDING ARCHITECTURAL AND ARCHAEOLOGICAL HERITAGE

Although an important issue – especially on a site-specific level - baseline data on a site-by-site basis for cultural heritage was not collected as it is not significant with regards to the Irish National Seafood Plan. Archaeology is considered as part of the aquaculture licensing process and associated EIAs where required, through consultation with the Conservation Designation Section of NPWS. Licence applications for aquaculture activities sometimes require an archaeological assessment.

5.11 LANDSCAPE

There is no national landscape data set available. As the Irish National Seafood Plan does not identify sites or locations where landscape effects may arise, it was not possible or relevant to gather site-specific landscape data. It should be noted that there is a requirement on each Local Authority in Ireland to prepare Landscape Management Plans, one of the function of which is to designated and protect sensitive landscapes.

However, any landscape proposals will still be subject to all appropriate regulatory and consent procedures and, thus, landscape effects will be considered at this more appropriate level of decision making.

It is noted that some aquaculture sites are located in highly scenic areas, and thus, may present visual impact to the viewer and/or the landscape character. The former DCMNR has produced a series of visual impact assessment guidelines in May 2001 (DCMNR, 2001) to address these important and sensitive issues.

BIM operates a Barrel Replacement Scheme to replace blue and green floats traditionally used by the rope mussel industry with low visual impact grey floats. Bay scale navigational plans undertaken by CLAMS groups also aim reduce visual impact while meeting safety requirements. Trestle recycling programmes also reduce visual impact by removing old oyster trestles and realigning those still in use to keep sites tidy and ordered.

5.12 INTER-RELATIONSHIP OF THE ABOVE FACTORS

Table 5.4 below summarises the interrelationships and key links/dependency between the environmental topics in relation to the likely significant effects on the environment. The key effect interrelationships and links are between:

- *Biodiversity, flora and fauna and water*: these environmental components are strongly linked and dependent on each other. In this case, the biological aspects of water and addressed under biodiversity, flora and fauna while water covers water quality, pollution and related issues.

- *Biodiversity, flora and fauna and population:* the population (local and rural fishing communities) depends on a robust and successful biodiversity/ecosystem so that the economic exploitation of the marine and aquatic environments is maintained.

- *Biodiversity, flora and fauna and Soils:* The benthic environment is one of the key marine ecosystems. The biological aspects of the benthic environment is addressed under biodiversity, flora and fauna. Soils cover the non-biodiversity aspects of soils (e.g. soils as a resource).

- *Biodiversity, flora and fauna and human health:* there is a clear link between the health and condition of shellfish and related seafood produce and human health. Shellfish can accumulate natural biotoxins and other anthropogenic contaminants and if consumed by human, this can result in illness.

- *Biodiversity and cultural heritage:* As noted in the NIEA's scoping consultation response (*Section 4.3.1*), marine wrecks can provide a niche habitat for aquatic flora and fauna.

- *Population and human health*: promotion of fish-related food produce will improve human health - dietary issues - in the general population.

- *Water and human health*: water pollution can have significant impacts to human health, through pollution of drinking water supplies (from a range of sources, such as inadequate treatment of wastewater and agricultural runoff) to contamination of waters used for recreational purposes (bathing waters etc.).

- *Population and material assets*: the decommissioning of elements of the Irish fishing fleet will benefit (through the payment of compensatory funds for boats being decommissioned) those who work in the Irish fishing sector as the excessive catching capacity will be reduced to better match the available national quota. Those remaining in the fishing industry will be able to obtain a better financial yield from the limited national fishing quota. Additionally, general investment and grant-aided assistance to the wider seafood-related infrastructure (training, facilities etc.) will benefit local and rural fishing communities.

- *Material assets and biodiversity, flora and fauna*: there is a link between the catching capacity (i.e. fishing boats, considered under material assets) and its potential to impact on biodiversity, flora and fauna. As noted in *Section 5.2.1*, fish stocks around Ireland and (on a world-wide basis) are under considerable pressure and are, generally, being fished at unsustainable levels.

Figure 5.4 Effect interactions matrix

	Biodiversity	Population	Human health	Soil	Water	Air & climate	Material assets	Cultural heritage	Landscape
Biodiversity									
Population	●								
Human health	●	●							
Soil	●								
Water	●		●						
Air & climate									
Material assets	●	●							
Cultural heritage	●								
Landscape									

Source: ERM (2008)

5.13 *DATA GAPS & STUDY LIMITATIONS*

The SEA of the National Seafood Plan is desk-based, qualitative assessment of the 13 Measures against the Environmental Objectives. No field studies or additional survey work has been undertaken as it was deemed to not be required, given the strategic nature of the National Seafood Plan and the fact that the Plan does not specify locations for development.

The majority of the assessments have been made on the basis of the correct application of site-specific consent procedures (such as aquaculture licensing (including renewals), planning process) and ongoing good environmental practice and compliance with all existing and future environmental legislation.

Data gaps in the environmental baseline data were uncovered during the preparation of the Environmental Report and these are noted when the data gap arisen in *Section 5*. However, a summary of the data gaps is provided below:

- Conservation Management Plans were not available for all of the Natura 2000 sites. These Plans would enable a greater understanding of the existing environmental problems (although a summary report has been prepared by NPWS and further information on this can be found in *Section 5.2.3*), relating to the draft OP, at individual sites to be

known. Currently, NPWS are working towards preparing and publishing Management Plans for all of Ireland's Natura 2000 sites.

- The lack of data regarding fish discards is noted in *Section 5.2.1*. However, this is a Europe-wide problem and one which attempts are being made to address it.

- *Section 5.2.7* noted that there was a level of non-reporting (33%) in relation to benthic monitoring, the collection of which is the responsibility of the Department of Agriculture, Food and Fisheries. The monitoring recommendations (*Section 8*) propose to monitor this reporting rate during the life of the National Seafood Plan.

6 IDENTIFICATION OF LIKELY SIGNIFICANT EFFECTS

6.1 INTRODUCTION

This section outlines the likely significant effects on the environment as a result of the implementation of the National Seafood Plan. A set of Environmental Objectives (which were presented, and consulted upon, in the SEA Scoping Report: *Section 3.3*) were used to identify and prioritise the likely significant effects.

6.2 SEA METHODOLOGY AND ENVIRONMENTAL OBJECTIVES

The use of environmental objectives to assess the measures of the National Seafood Plan is intended to highlight the likely significant effects on the environment and also to assist in the integration of the environment into the preparation of the National Seafood Plan.

The environmental objectives outlined below in *Table 6.1* are based on an examination of the environmental issues likely to be of relevance to the National Seafood Plan (*Section 5*) and also the issues discussed in the National Seafood Plan itself. Other material used in the development of the environmental objectives includes:

- Environment in Focus 2006 (EPA, 2006);
- Implementation of SEA Directive 2001/42/EC (DoEHLG, 2004); and
- Environmental Status of the European Seas (ICES, 2003).

The assessment methodology to be used will be a five-point, qualitative-based, rating scale:

- Major/significant negative impact;
- Minor negative impact;
- Neutral impact
- Minor positive impact; and
- Major/significant positive impact.

The assessment process will involve assessing each of the 13 Measures against the Environmental Objectives in *Table 6.1*.

The use of a qualitative, five-point rating scale is preferred as it is appropriate, given the strategic-nature of the National Seafood Plan.

Table 6.1 Environmental Objectives for the National Seafood Plan SEA

Environmental topic	Environmental objectives
Biodiversity, flora & fauna	Maintain or restore natural biodiversity of aquatic ecosystems.
	Reverse the declining fish stock and status trends.
	Reduce fish mortality rates caused by discarding
	Reduce by-catching of non-target species.
	Reduce the impacts of fishing activities on marine habitats.
	Protect and maintain the integrity of aquatic Natura 2000 sites.
	Reduce adverse side-effects associated with parasites and other infections in aquaculture.
	Minimise the spread of non-native invasive species
Population	Promote and assist sustainable rural fishing communities and rural employment.
Human health	Promote health and safety across all fishing and aquaculture activities.
	Promote beneficial dietary effects across the national and international population.
Water	Minimise aquatic pollution arising from fishing and aquaculture activities.
	Promote more sustainable forms of water consumption in all fishing and aquaculture activities.
	Minimise conflicts with the overall objectives of the WFD.
Air & climate	Promote clearer and more efficient fuel usage in all fishing activities.
	Promote greater energy conservation for aquaculture activities.
Cultural heritage	Protect and enhance seafood industry-related cultural heritage resources and assets.
Soils	Minimise negative impacts from seafood-related activities on important soil resources.
Material assets	Increase investments in community fishing infrastructure, processing, education and training facilities.
Landscape	Improve the landscape around fishing port areas with a view to promoting aquatic and local tourism.

Source: ERM (2008)

6.3 *BIODIVERSITY, FLORA & FAUNA*

There are seven Environmental Objectives under this environmental topic. The National Seafood Plan's performance will be assessed under each of these objectives. The assessment will be presented under each of the five individual and relevant intervention measures (those nominated with a mark in *Table 6.2* below).

Table 6.2 Biodiversity Screening Matrix

Biodiversity	1. Market research	2. Market development & promotion	3. Innovation support	4. Step-up development	5. Market investment	6. Competitiveness & performance	7. Fleet restructuring	8. Aquaculture industry development	9. Social & economic development	10. Social & economic sustainability	11. Marine environment protection	12. Marine environment protection & QA	13. Seafood industry training
Maintain or restore natural biodiversity of aquatic ecosystems.							●	●		●	●	●	
Reverse the declining fish stock and status trends.							●				●		
Reduce fish mortality rates caused by discarding							●				●		
Reduce by-catching of non-target species.							●				●		
Reduce the impacts of fishing activities on marine habitats.							●	●		●	●	●	
Protect and maintain the integrity of aquatic Natura 2000 sites.								●		●	●	●	
Reduce adverse side-effects associated with parasites and other infections in aquaculture.								●		●		●	
Minimise the spread of non-native invasive species.								●					

Source: ERM (2008)

6.3.1 Maintain or restore natural biodiversity of aquatic ecosystems

Fleet Restructuring Measure

A core aim of this intervention is the removal of 3,660 GT's from Ireland's over 18m whitefish fleet. The Measure is aimed at providing funding to redress the significant imbalance that exists between the available resource of fishing quota and catching capacity of the Irish fishing fleet, through the introduction of a whitefish decommissioning scheme, while at the same time providing grant aid to those vessels remaining to improve safety standards, fish quality and fuel efficiency on board. The proposed decommissioning represents a reduction of approximately 5.5% of the total fishing capacity of the Irish fleet. The vessels to be removed are those which catch fish stocks under threat from overexploitation. However, together with the 3,178 GT's already removed from the whitefish sector during the first phase of decommissioning (under Financial Instrument for Fisheries Guidance (FIFG)) this only represents 24% of the total programme of decommissioning recommended by the *Seafood Industry Strategy Review Group*.

The removal of vessels from the fleet will result in a redistribution of the Irish quota within the remaining vessels. This will allow the remaining fleet to operate more effectively, with fewer vessels able to operate more efficiently. Although, the landings from the fleet are not expected to reduce, it is possible that the economic drivers for 'discard fishing' may be reduced. A reduction in discard fishing may in term have an effect to reduce overall fishing pressure on the marine environment, as well as reducing commercial stock mortality and reducing mortality in non-target species, including cetacean and bird by-catch. However the complex economics of the catching sector make it essentially impossible to make a clear predictive assessment of this effect. Effective monitoring of Catch Per Unit Effort (CPUE) and levels of discarding will be an important step to assessing and demonstrating the outcomes of this measure. A potential minor reduction in overall fishing effort (and, potentially, over fishing effects, fish mortality rates from by-catches, wider physical impacts and other adverse biodiversity effects) is predicted.

Aquaculture Industry Development Measure

It could be argued that the proposed increase of aquaculture output under this Measure by 2013 is unlikely to have significant negative effects on biodiversity and flora and fauna as project-level consent procedures (such as aquaculture licensing and the associated environmental assessment procedures) will ensure that site-specific effects will be addressed. The implementation of this measure is contingent on the potential applicant having obtained all consents prior to their application of aquaculture-related funding under this measure and that the regulatory mechanisms incorporate an appropriate level of environmental scrutiny. Thus, only permitted aquaculture activities will be eligible for funding from BIM.

A key facet of this is ensuring the correct application of the Article 6 assessments as required in the Habitats Directive takes place prior to consent as required. BIM and a number of other relevant stakeholders (including NPWS) are currently working on a methodology for undertaking Appropriate Assessment of aquaculture activities for use at site-specific level in Ireland. Another key assumption is ongoing environmental best practice and a rigorous decision making-process with regard to aquaculture licence applications and renewals.

It is likely that this measure will result in a neutral to some minor negative impact. However, its is considered unlikely that these will be significant, or cause a conflict with the Irish Natura 2000 network, especially as much of the projected increase in production will be achieved by maximising the potential of existing licensed sites without the need to expand operations into new areas.

Socio-economic Sustainability Measure

Under the Socio-economic Sustainability Measure, carrying capacity models will be developed for at least five shellfish aquaculture bays. These models will assist in the future management of these aquaculture operations by predicting the optimal biomass for a defined area and working to that level. Shellfish are filter feeders and their feed supply is dependent on nutrient inputs to a bay. Therefore shellfish culture can mitigate anthropogenic nutrient loading in a bay. This objective therefore could lead to a minor positive impact to biodiversity within these shellfish aquaculture bays at a local level.

Marine Environment Protection Measure – Fisheries

The marine environment protection measure provides €38 million to support five specific objectives which are to:

- Increase awareness and response to environmental policies;
- Promote local area management strategies and the Coastal Zone Management approach;
- Promote the introduction of Environmental Management Systems;
- Develop management strategies that specifically aim to reduce discarding in fisheries; and
- Promote the development and uptake of environmentally friendly and fuel-efficient fishing gear.

These objectives support a range of activities and projects including investments for reducing the impact of fishing on ecosystems and the sea bottom, promoting selective fishing methods or gears and reduction of by-catches. Although the level of impact will ultimately be determined by the level of funding apportioned to each, the outcome is likely to be a minor positive impact on maintaining natural biodiversity of aquatic ecosystems.

Marine Environment Protection and Product Quality Assurance Measure

This measure aims to protect the marine environment by promoting the uptake of internationally accredited product Quality, Eco and Organic assurance schemes, and BIM's certified Environmental Management Systems (EMS) ECOPACT. The adoption of the ECOPACT, ISO 65/EN45011 accredited Quality Eco and Organic assurance schemes and participation in the Co-ordinated Local Aquaculture Management Systems (CLAMS) are all key objectives in delivering this Measure.

ECOPACT is designed to ensure the widespread introduction of EMS throughout the Irish aquaculture industry which it is hoped will, in turn, promote responsible and more sustainable development of fish and shellfish farming.

The ECOPACT EMS is aimed at helping the aquaculture industry to continually work towards the highest possible standard of environmental performance and to produce seafood responsibly. It covers the many aspects of aquaculture, from husbandry, to maintenance, and the interaction of farm related activities with the surrounding environment.

The ECOPACT EMS has been developed to provide a solid basis for Irish fish and shellfish farmers to set up their own EMS. It is proposed as a framework that helps companies to manage their operations with a reduced impact on the environment. As part of ECOPACT, BIM is helping companies to develop a tailored Environmental Management Programme identify the environmental aspects to be covered, together with targets for action, programmes to achieve those targets, and setting out how performance will be monitored and evaluated. Aspects contained within ECOPACT include environmental monitoring, nature conservation, site management and equipment operation together with Key Objectives and Requirements and Actions in order to meet those objectives.

BIM have developed and seek to continue with the management and farm / processing facility based implementation of Quality, Eco and Organic assurance schemes with EN45011/ISO65 accreditation. EN45011 is a European standard and is recognised as the international benchmark for food product certification. It contains provisions relating to the structure of inspection/certification bodies and requires for example that their certification decisions shall are free of influence from commercial considerations.

The targets for the measures are for 75% conformity of the Irish aquaculture industry with the ECOPACT EMS and the Quality, Eco or Organic standards as appropriate by 2013.

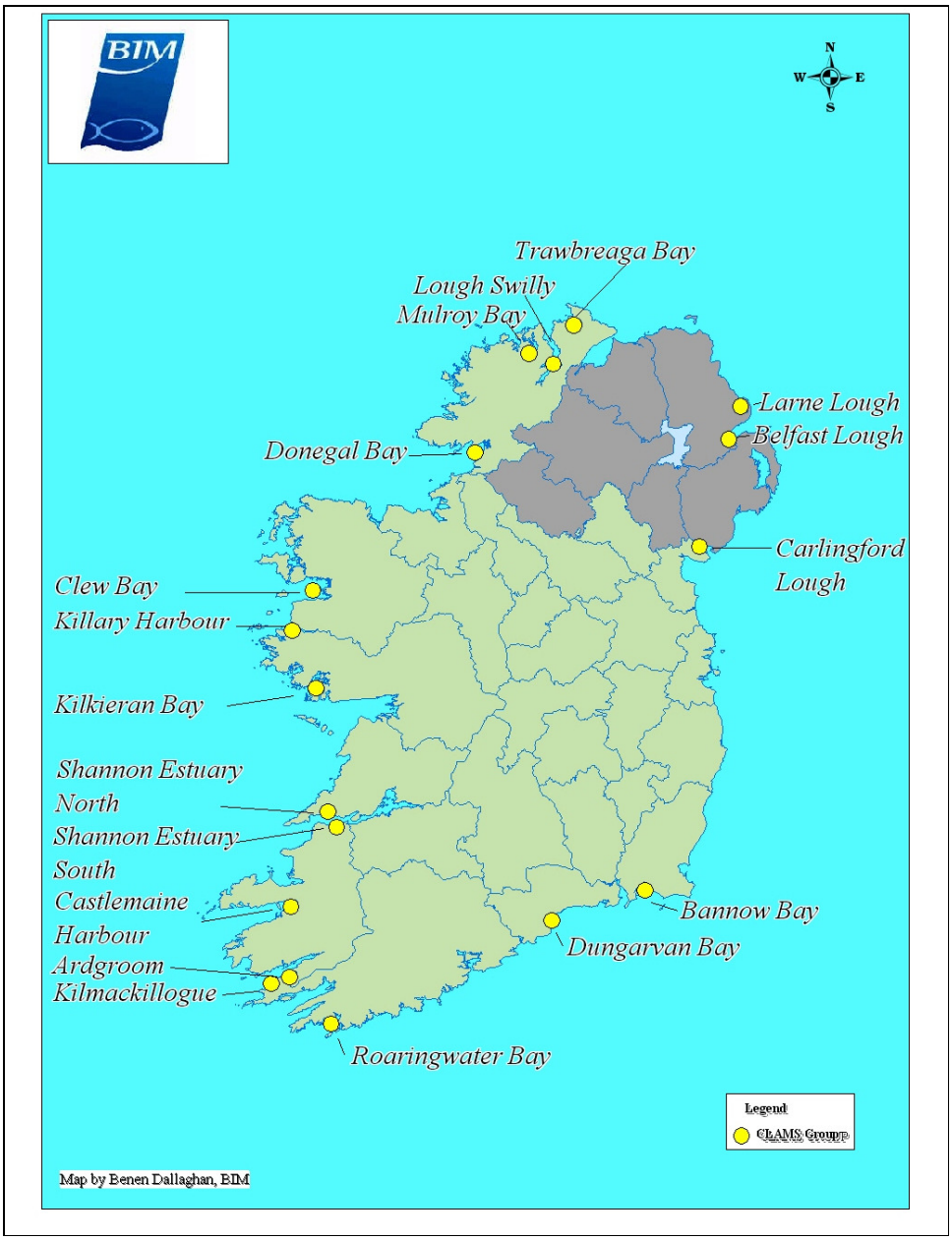
By achieving this level of uptake, environmental improvements (e.g. minimisation of risks of accidental spillage and pollutions; reduction in potential odour nuisances; improved site management and cleanliness; and

minimisation of wastes generated) are likely to result and these are anticipated to be minor positive.

The measure also aims to maintain the existing CLAMS groups (*Figure 6.1*) and to establish a further four groups to achieve full coverage around the coastline. The CLAMS process is a nationwide initiative to manage the development of aquaculture in bays and inshore waters throughout Ireland at a local level. Each CLAMS aims to fully integrate aquaculture interests with relevant national policies, as well as:

- Single Bay Management (S.B.M.) practices, which were initially introduced by salmon farmers to co-operatively tackle a range of issues, and have now been extended to all aquaculture species;
- The interests of other groups using the bays and inshore waters;
- Integrated Coastal Zone Management (I.C.Z.M.) plans; and
- County Development Plans.

Figure 6.1 Locations of CLAMS Groups in Ireland



Source: BIM (2007)

CLAMS aims to successfully integrate aquaculture activities into the coastal zone, and at the same time tries to improve environmental compliance, including making data on aquaculture performance available to the local community. By integrating aquaculture activities into the existing wider coastal environment, and taking into consideration the opinions of local interested parties, the spread and increased membership of CLAMS groups should lead to a minor positive impact in maintaining the natural biodiversity of aquatic ecosystems.

The last target of the measure is to import, test and establish three new key aquaculture techniques and technologies in the sector. Assuming that these new techniques and technologies are subject to the same licensing

requirements as current developments, no significant impacts are predicted to biodiversity.

6.3.2 Reverse the declining fish stock and status trends

Fleet Restructuring Measure

The reduction of the Irish Fishing fleet by 5.5% is unlikely to make a significant impact on reversing declining fish stock trends, especially as the overall quota will not be reduced. This measure will therefore have a neutral or minor positive effect on fish stocks and status trends.

Marine Environment Protection Measure – Fisheries

This Measure contains objectives to promote the development and uptake of environmentally friendly and fuel-efficient fishing gear, and to develop management strategies that specifically aim to reduce discard fishing. This includes investments for reducing the impact of fishing on non-commercial species, reducing the impact of fishing on ecosystems and the sea bottom as well as promoting selective fishing methods or gears and reduction of by catches. The level of impact will ultimately be determined by the level of funding apportioned to the various objectives; however the outcome is likely to have a minor positive impact on reversing declining fish stocks and status trends.

6.3.3 Reduce fish mortality rates caused by discarding

Fleet Restructuring Measure

Due to the proposed decommissioning of 3,660 GT's from Ireland's over 18m whitefish fleet there will be a redistribution of the existing quotas to fewer boats. It is possible that due to the concentration of the quota to fewer vessels there will be a minor reduction in discard fishing, leading to a minor positive impact over the duration of the Measure.

Marine Environment Protection Measure – Fisheries

One of the specific objectives of this Measure is to develop management strategies that specifically aim to reduce discarding in fisheries. This will be achieved through providing funding to make it possible for catches; the discarding of which is no longer authorised, to be kept on board, and to develop and test methods to improve gear selectivity to reduce by-catches, discards or the impact on the environment. It is predicted that the overall impact of this Measure on reducing mortality rates caused by discarding will be minor positive.

6.3.4 *Reduce by-catching of non-target species*

Fleet Restructuring Measure

The redistribution of the Irish quota amongst fewer vessels as a result of decommissioning should lead to a reduction in overall effort, with fewer boats operating in order to land the same catch. This in turn may lead to a reduction in discard fishing and by catch of non-target species. The magnitude of this effect is difficult to predict based on the available data, but it is possible that it will result in a minor positive impact over the duration of the measure.

Marine Environment Protection Measure – Fisheries

Under the Marine and Environment Protection Measure one of the specific objectives is to promote the development and uptake of environmentally friendly and fuel efficient fishing gear. This includes investments to reduce the impact of fishing gear on non-commercial species and to achieve selectivity of fishing gear as well as funding to promote selective fishing methods or gears and reduction of by catches and the removal of lost fishing gear from the seabed in order to combat ghost fishing. These measures should result in a minor positive impact on reducing by-catches of non-target species.

6.3.5 *Reduce the impacts of fishing activities on marine habitats*

Fleet Restructuring Measure

Targeting fleet reduction measures towards the >18m beam trawling fleet may result in a shift in the fleet away from beam trawls to other mobile gear which is potentially less damaging to benthic ecology and biodiversity. If the restructuring results in the up-take of other mobile gear types, this Measure is likely to result in minor positive benefits to marine habitats.

Aquaculture Industry Development Measure

This measure aims to invest €123.755 million in aquaculture by 2013 to assist with achieving the full potential of existing licensed activities and further growing the sector. All new licence applications will be subject to project-level environmental assessment as required. This will ensure that potential site-specific effects on underlying marine habitats are addressed. The effectiveness of these project-level consent procedures (and the associated studies, assessments and mitigation measures) is a key aspect of ensuring environmental protection regarding the future aquaculture activities.

There are some regulatory challenges to integrating the impacts from multiple developments. The implementation of a science based approach to the assessment of cumulative impacts on the receiving environment pose particular challenges. All efforts are being made to address the cumulative effects issue at licensing stage in the development of Appropriate Assessment methodologies. In addition, the development of carrying capacity models and

successful operation of the CLAMS initiative are important for further successfully addressing this issue.

It is likely that this measure will result in a neutral to minor negative impact to marine habitats. Given the existing requirements for environmental assessment at licensing stage together with further consideration of potential environmental impacts when approving applications for grant assistance, it is unlikely that these potential impacts will be significant, or cause a conflict with the Irish Natura 2000 network.

Socio-economic Sustainability Measure

The carrying capacity models which will be developed for at least five shellfish aquaculture bays under this measure will be used as a tool to predict nutrient loads in shellfish bays and determine optimal culture biomass. Knowledge and use of Carrying Capacity modelling data will therefore provide greater protection to marine habitats in these bays. This measure should therefore have a minor positive impact.

Marine Environment Protection Measure – Fisheries

Under this measure, one of the specific objectives is to promote the development and uptake of environmentally friendly and fuel efficient fishing gear. This includes investments to reduce the impact of fishing on ecosystems and the sea bottom and to develop and test methods to improve gear selectivity to reduce by-catches, discards or the impact on the environment, in particular on the sea bottom. Funding these Measures should result in a minor positive impact on reducing the impacts of fishing activities on marine habitats.

Marine Environment Protection and Product Quality Assurance Measure

The key aims of this measure are to ensure that 75% of the Irish aquaculture industry is farmed in conformity with the ECOPACT EMS and that 75% of the output is certified to one of the EN45011/ISO65 standards by 2013. Both of these aims should result in reduction to environmental impacts of aquaculture such as minimisation of risks of accidental spillage and pollution; reduction in potential odour nuisances; improved site management; and waste reduction. This measure should therefore result in a minor positive impact to marine habitats for the duration of the uptake of the EMS and EN45011/ISO65 standards.

6.3.6 Protect and maintain the integrity of aquatic Natura 2000 sites

Aquaculture Industry Development Measure

The Aquaculture Industry Development Measure aims to maximise the potential of existing aquaculture operations, increase salmon and mussel production, encourage the commercial development of new species and open up offshore locations for aquaculture.

There is potential for the expansion of the aquaculture industry in Ireland to impact on aquatic Natura 2000 sites as they expand in size at existing locations within Natura 2000 sites, or move to new sites within the Natura 2000 network where aquaculture has not been practiced before.

Any expansion of existing sites or development of new sites requires an aquaculture and foreshore licence as described earlier. If located within or adjacent to Natura 2000 sites applications are subject to an appropriate assessment under the Habitats Directive to determine if there are potentially significant impacts on the integrity of the Natura 2000 site. The requirement for Article 6 Appropriate Assessments to be undertaken, together with the licensing requirements already in place for establishing aquaculture developments, should ensure that the proposed expansion does not have any significant impact on any Natura 2000 sites. Again this assumes ongoing environmental best practice and a rigorous decision making-process with regarding to licence applications and renewals.

Given the rigorous licensing procedure is likely that this measure will result in a neutral to possibly minor negative impact to marine habitats but that is unlikely that these will be significant, or cause a conflict with the Irish Natura 2000 network.

The Appropriate Assessment Screening document which accompanies this report sets out the potential impacts, based on the information provided in the OP, on the Natura 2000 network. The finding of this assessment was that there are potential impacts on the Natura 2000 network, but that individual, site specific Appropriate Assessments will have to be conducted to ensure that no significant impacts occur.

Socio-economic Sustainability Measure

There is some scope for this measure to impact on the Natura 2000 network, as it aims to create three strategically located depuration/relaying facilities to allow further expansion of aquaculture into previously undeveloped areas. There is potential therefore for this to lead to further development pressure within Natura 2000 sites. The same procedures relating to licensing and undertaking Appropriate Assessment apply as outlined under the *Aquaculture Industry Development Measure* above, so that in theory there should be no impacts to the Natura 2000 network. Thus, this measure will have neutral impacts on the Natura 2000 network.

Marine Environment Protection Measure – Fisheries

Under the five specific objectives of this measure, funding is available to activities intended to protect and develop aquatic fauna and flora while enhancing the aquatic environment with specific reference to the protection and enhancement of the environment in the framework of Natura 2000 where its areas directly concern fishing activities. It is predicted that the results of any projects or activities which aim to protect aquatic flora and fauna within

Natura 2000 sites would have a minor positive impact on the integrity of aquatic Natura 2000 sites. However assessments will be undertaken to review impact of any work, as a result of this measure, planned in or adjacent to Natura 2000 sites.

Marine Environment Protection and Product Quality Assurance Measure

The aims of this measure, to ensure compliance with ECOPACT and the various Quality, Eco and Organic standards will increase the overall environmental performance of the aquaculture industry in Ireland. Compliance with these schemes improves environmental performance of aquaculture operations for example by improving awareness of the Natura 2000 designation features, establishing working relationships with local NPWS rangers and even taking part in surveys such as bird counts and otter identification. Therefore any potential impacts of aquaculture developments within or adjacent to Natura 2000 sites should be reduced, and this is anticipated to be a minor positive impact.

6.3.7 Reduce adverse side-effects associated with parasites and disease in aquaculture

Aquaculture Industry Development Measure

The objective under this measure is to open up new offshore areas for aquaculture and this could have two potential impacts on parasite levels and disease in aquaculture. If properly sited, new developments in offshore areas with more dispersive currents will reduce the potential for parasites and disease. Rigorous licensing procedures and associated environmental assessments where required will help determine potential impacts prior to development and operation. It is likely that this measure will result in neutral to some minor negative impacts on marine habitats but it is unlikely that these will be significant.

Socio-economic Sustainability Measure

By creating Carrying Capacity Models for a minimum of five shellfish bays, it is possible that levels of aquaculture in these bays will be limited to that which an area is able to accommodate without adverse side-effects from parasites and disease. The measure should therefore have a minor positive impact on reducing adverse side-effects associated with parasites and disease.

Marine Environment Protection and Product Quality Assurance Measure

One of the key targets of this measure is that 75% of the Irish aquaculture industry is farmed in conformity with the ECOPACT EMS. Based on the available information, better environmental management is likely to lead to lower levels of parasites and disease. Regular monitoring and control of sea lice is a licence condition for finfish aquaculture, and highlighting this requirement within the EMS should result in a minor positive impact.

An additional aim of this measure is to import, test and establish at least three new key aquaculture techniques and technologies. These techniques and technologies may lead to a reduction in levels of parasites and disease within the aquaculture sector, however again there are insufficient details to be able to assess the likely positive or negative impacts at this stage.

6.3.8 Minimise the spread of non-native invasive species

Aquaculture Industry Development Measure

One of the key targets for this measure is to promote the diversification of the aquaculture industry by encouraging the commercial development of new species and it is plausible that this diversification may involve non-native species. Given the rigorous licensing procedures and associated environmental assessment procedures it is unlikely that a new invasive species would be approved for culture. Aquaculture is recognised as a vector for the transport of alien species but again strict movement procedures for aquaculture products ensure that such risks are minimised. Aquaculture itself can be negatively impacted by invasive species and the sector is very aware of this threat. BIM's involvement in the national marine technical working group for the Invasive Species Ireland project ensures that the sector is kept informed on this matter and can act as appropriate. Farmers, who as a consequence of working in the coastal environment on a daily basis are aware of changes, and through BIM, can alert the Invasive Species Ireland Project of potential invasions. Therefore, there is the potential for this measure to have a minor positive to minor negative impact against this objective.

6.4 POPULATION

There is only one sub-objective under the Population Objective; however it is likely that all of the thirteen measures will affect this objective, and so all will be assessed against it here.

Table 6.3 Population Scoping Matrix

Population	1. Market research	2. Market development & promotion	3. Innovation support	4. Step-up development	5. Market investment	6. Competitiveness & performance	7. Fleet restructuring	8. Aquaculture industry development	9. Social & economic development	10. Social & economic sustainability	11. Marine environment protection	12. Marine environment protection & QA	13. Seafood industry training
Promote and assist sustainable rural fishing communities and rural employment	●	●	●	●	●	●	●	●	●	●	●	●	●

Source: ERM (2008)

6.4.1 Promote and assist sustainable rural fishing communities and rural employment

Market Research Measure

A key method to enable BIM to promote and assist sustainable rural fishing communities and rural employment is to achieve the value generation targets set out for 2015. One of the key support mechanisms to achieving this goal is the market research measure. By ensuring that the understanding of the seafood market is significantly strengthened, it will be possible to achieve the value generation targets set for 2015. It is therefore predicted that this measure will contribute to a minor positive impact against this environmental objective.

Market Development and Promotion Measure

The next stage in achieving the growth targets set out for 2015 is to development the markets identified during the market research carried out through the previous measure. This measure aims to invest in order to assist in meeting theses targets. It is therefore predicted that this measure will contribute to a minor positive impact against this environmental objective.

Innovation support Measure

The Innovation support measure aims to provide funding until 2015, to successfully develop BIM's Seafood Development Centre and develop a concentrated Pelagic Development Scheme with a minimum of two value-added pelagic processing operations by 2015. All of these objectives aim to help to achieve the growth targets set out for 2015. It is therefore predicted

that this measure will contribute to a minor positive impact against this environmental objective.

Step-up Development Measure

The step up development measure is predicted to have a mixed impact against this environmental objective. It will provide public funding to the processing sector up to 2015 and contribute to the achievement of the growth targets set out for 2015 which is predicted to contribute to a major positive impact. However it also aims to restructure the seafood processing sector by achieving a 50% reduction in the current total number of companies operating. It is likely that this restructuring will result in job losses which will have a negative impact in the short to medium term. The size of the impact will depend on the number of redundancies. It should be noted that the overall aim of the measure is to increase the overall competitiveness and security of the industry so that the long term impact is predicted to be a minor positive one. However, negative impacts in the short to medium term are likely to arise due to the re-structuring of the sector and the (likely) job losses.

Market Investment Measure

The Market Investment Measure seeks to provide funding to the seafood industry over the 2009-2015 period. This will then be used to develop and unlock further industry investment over the same period. This funding will be spent on achieving a range of objectives which aim to support an increased industry-led investment to promote greater understanding of the market dynamics and trends, identification of market opportunities, improvement in supply chain practices and strengthening of overall industry marketing capability. The overall targets of the measure are, in common with the other marketing measures, to help to achieve the sector growth targets set out for 2015. It is therefore predicted that this Measure will contribute to a minor positive impact against this Population environmental objective.

Competitiveness &Performance Measure

The key objective of this measure is to undertake a number of specific initiatives and projects to address the key obstacles affecting the future development of the seafood processing sector and to contribute to the sectors long term development. The key targets are to provide public investment regarding studies, training initiatives and projects to overcome these key barriers to the seafood processing sector. This Measure should directly improve the skills and business development of the industry. It is therefore predicted that this measure will have a minor positive impact.

Fleet Restructuring Measure

This measure is predicted to have a mixed impact on the rural fishing communities and rural employment. It will remove up to 3,660 GT's from the over 18 metre whitefish segment, which will result in a loss of jobs in the fishing sector. However it will introduce up to 30 new marine tourism/sea-

angling vessels, assist up to 50 young skippers to purchase their first vessel and assist in the upgrading of safety and quality standards and fuel efficiency systems. The largest impact on rural fishing communities and rural employment is however likely to be the loss of jobs from the decommissioning of vessels and so the overall impact from this measure is predicted to be a minor negative one. However, there will be a minor positive impact for those fisherman remaining in the sector as they will (post-decommissioning) be able to benefit from greater economic and catch yields due to the lower number of vessels.

Aquaculture Industry Development Measure

The key target of this measure is to provide a total investment of €123.755 million over the 2009-2015 period and to increase the capacity and output of the industry in line with the 2015 targets. This will be achieved through the six priority objectives which include promoting the introduction of new technology to open up offshore locations for aquaculture, promoting the diversification of the aquaculture industry by encouraging the commercial development of new species and creating additional income and employment in peripheral coastal regions. In achieving these targets and objectives, it is predicted that this measure will have a minor positive impact.

Social & Economic Development Measure

This measure focuses on three key areas:

- improving operational efficiency/reducing costs;
- product quality; and
- first-point-of-sale for whitefish species.

Overall the target is to invest €20 million in these three areas in the period 2009-2015.

It is predicted that success in the first area may result in less employment in the industry per unit of output in the long-term, potentially having a negative impact on rural fishing communities and employment. The other two areas however seek to improve quality standards in the industry, in terms of product and in terms of improved operating standards. By improving quality standards in key areas, it is predicted that the measure will increase the skills of workers involved in the selling whitefish and therefore assist sustainable rural fishing communities and rural employment. Investment in these second two areas is therefore predicted to have a minor positive permanent impact against this environmental objective.

Social & Economic Sustainability Measure

One of the key targets of this measure is to create a minimum of three strategically located depuration/relaying facilities to address the infrastructure deficits currently constraining expansion of some sections of the aquaculture industry.

The construction of these facilities will in itself create job opportunities in rural areas which will have a positive impact against this environmental objective. It will also allow the expansion of the farmed mollusc sector into previously un-developed areas. It is therefore predicted that this measure will have a permanent major positive impact in assisting sustainable rural fishing communities and rural employment.

Marine Environment Protection Measure

The marine environment protection measure contains five objectives. All of these are aimed at improving the environmental performance of the fisheries sector. There is potential for the objectives to benefit coastal communities through pilot projects and through improving the environment within which the industry operates, however any impacts are likely to be very minor and the most likely overall impact will be neutral.

Marine Environment Protection & QA Measure

This measure seeks to ensure that 75% of the capacity of the Irish aquaculture industry is farmed in conformity with the ECOPACT EMS, that 75% of the output is quality assured to an EN45011 standard by 2015, and to test and establish at least three new key aquaculture techniques and technologies in the sector. Establishing new techniques and technologies in the sector is likely to lead to a small number of new employment opportunities and therefore have a minor positive impact on employment. The establishment of an industry wide EMS and Quality, Eco and Organic standards is likely to benefit the aquaculture industry as a whole, leading to increased confidence from consumers and higher revenues. It is predicted that this measure will therefore have a minor positive permanent impact in achieving sustainable rural fishing communities and rural employment.

Seafood Industry Training Measure

The Seafood Industry training measure seeks to increase the overall number of people in training, and also to diversify the training to better equip those in the industry to meet the challenges of the changing markets. The measure seeks to increase the number of people in training by 150 between 2009 and 2015. It also seeks to specifically increase the number of people receiving aquaculture training, shore based sector training and diversification training. This increase in the number of people receiving training and also in the diversity of training should have a major permanent positive impact in and assist sustainable rural fishing communities and rural employment promoting and assisting sustainable rural fishing communities and rural employment.

6.5 *HUMAN HEALTH*

There are two sub-objectives under the Human Health objective. The thirteen measures have been screened against these sub-objectives in *Table 6.4* below.

Table 6.4 Human Health Scoping Matrix

Human health	1. Market research	2. Market development & promotion	3. Innovation support	4. Step-up development	5. Market investment	6. Competitiveness & performance	7. Fleet restructuring	8. Aquaculture industry development	9. Social & economic development	10. Social & economic sustainability	11. Marine environment protection	12. Marine environment protection & QA	13. Seafood industry training
Promote health and safety across all fishing and aquaculture activities							●	●	●				●
Promote beneficial dietary effects across national and international population		●											

Source: ERM (2008)

6.5.1 *Promote health and safety across all fishing and aquaculture activities*

Aquaculture Industry Development Measure

A proportion of the total €123 million investment allocated under this measure will be spent on initiative to improve the efficiency, safety and competitiveness of the sector. The level of funding allocated to improving the safety of the industry, and the way in which this funding is used will determine the success of this measure in promoting health and safety across all fishing and aquaculture activities, however the affect is likely to be one of a major positive impact.

Fleet Restructuring Measure

One of the aims of this measure is to assist in the upgrading of safety and quality standards on up to 600 vessels. This represents approximately 32% of all current fishing vessels. Depending of the level of assistance, this measure should have a major positive impact on promoting health and safety across all fishing and aquaculture activities.

Social & Economic Development Measure

Within this measure there are six Objectives, one of which is to support development of fishing ports, landing sites and shelters. This contains a sub-objective to improve safety and working conditions. Allocating funding to improve the safety and working conditions at ports and landing sites is likely to have a minor positive impact on health and safety. A second objective under this measure is to contribute to the financing of socio-economic measures in order to improve professional skills and safety training which should also have a minor positive impact on promoting health and safety.

Seafood Industry Training Measure

BIM's outline for training needs, Steering a New Course recommends that as part of the training measures safety training will continue to improve safety at sea and reduce the risks associated with either fishing or aquaculture. It also recommends that unqualified skippers and mechanics on inshore vessels should be required to hold formal Department of Transport Certificates or Proficiency or Competency. The provision of safety training should have a major permanent positive impact on promoting health and safety across all fishing and aquaculture activities.

6.5.2 Promote beneficial dietary affects across national and international population

Market Development and Promotion Measure

The Market Development and Promotion Measure contains a number of objectives, a number of which aim to increase the level and range of marketing used by the seafood industry in Ireland. It is likely that a range of these marketing initiatives will promote the beneficial dietary effects of seafood. Of particular significance will be the objective to support initiative to educate both trade and consumers on the health and nutritional benefits of seafood. With a suitable level of funding it is predicted that this measure will have a minor positive impact on promoting beneficial affects.

6.6 SOIL

There is one sub-objective under the Soils objective. The thirteen measures have been screened against these sub-objectives in *Table 6*.5 below.

Table 6.5 Soil Scoping Matrix

Soil	1. Market research	2. Market development & promotion	3. Innovation support	4. Step-up development	5. Market investment	6. Competitiveness & performance	7. Fleet restructuring	8. Aquaculture industry development	9. Social & economic development	10. Social & economic sustainability	11. Marine environment protection	12. Marine environment protection & QA	13. Seafood industry training
Minimise negative impacts from seafood-related activities on important soil resources.								●			●		

Source: ERM (2008)

6.6.1 *Minimise negative impacts from seafood-related activities on important soil resources.*

Aquaculture industry development measures

In this assessment, Soils is taken to mean any benthic substrate. Finfish aquaculture sites have the potential smother valuable benthic habitats such as gravel or maerl therefore impacting on the benthic substrate. However, the EIA required as part of the licence application together with ongoing benthic monitoring for the duration of the operation as a condition of licence will ensure that potential impacts are minimised and mitigated as required. There is therefore a potential for a negligible to minor negative impact on soil resources from this measure.

Marine environment protection measure

In this assessment, Soils is taken to mean any benthic substrate resource i.e. gravel deposits suitable for aggregates extraction. The marine environment protection measure contains the potential for funding measures which have the potential for reducing the impact of fishing on ecosystems and the sea bottom.

Although these measures focus on minimising the impact of fishing on the sea bottom, it is unlikely that they will have an impact on soil resources and the impact is predicted to be neutral.

6.7 *WATER*

There are two sub-objectives under the Water objective. The thirteen measures have been screened against these sub-objectives in *Table 6.6* below.

Table 6.6 Water Scoping Matrix

Water	1. Market research	2. Market development & promotion	3. Innovation support	4. Step-up development	5. Market investment	6. Competitiveness & performance	7. Fleet restructuring	8. Aquaculture industry development	9. Social & economic development	10. Social & economic sustainability	11. Marine environment protection	12. Marine environment protection & QA	13. Seafood industry training
Minimise aquatic pollution arising from fishing and aquaculture activities			●				●	●		●	●	●	
Promote more sustainable forms of water consumption in all fishing and aquaculture activities			●					●		●	●	●	
Minimise conflicts with the overall objectives of the WFD			●					●		●	●	●	

Source: ERM (2008)

6.7.1 *Minimise aquatic pollution arising from fishing and aquaculture activities*

Innovative Support Measure

One of the objectives for this measure is to prioritise initiative and pilot projects that seek to reduce environmental impact and deal with the issues of waste disposal and treatment.

The manner in which this will be achieved, and the areas that will be targeted for funding are unclear however. It is likely that any initiatives and pilot projects that manage to reduce environmental impact will have a minor positive impact.

Fleet Restructuring Measure

By removing 3,660 GT from the >18 m whitefish segment of the fleet, approximately 25 vessels could be expected to be decommissioned. This reduction in the number of vessels will have a minor positive impact on the water environment as with fewer vessels operating there is likely to be a reduction in pollution incidents, effluent discharge and other boat related impacts to the water environment.

Aquaculture Industry Development Measure

One of the priority objectives of this measure is to promote the introduction of technology to open up new areas of offshore water to aquaculture. If properly sited, new developments in offshore locations with more dispersive currents could reduce levels of water pollution. It is likely that this measure will result in a neutral to minor negative impact to minimising aquatic pollution in some areas but that is unlikely that these will be significant.

Social and Economic Sustainability Measure

The development of carrying capacity models for five shellfish bays has the potential to lead to more sustainable stocking levels in the five bays, potentially resulting in improvements to the local water environments in these areas. The measure should therefore have a minor positive impact on reducing aquatic pollution.

Marine Environment Protection Measure

The Marine Environment Protection Measure contains objectives to increase awareness and response to environmental policies and promote the introduction of Environmental Management Systems. The objectives cover investment concerning production in particular infrastructure directed at waste treatment and investments relating to the storage and treatment of waste at fishing ports, landing sites and shelters. It is predicted that funding aimed at theses measures will have a minor positive impact on minimising aquatic pollution arising from fishing and aquaculture activities.

Marine Environment Protection and QA Measure

It is possible that through reaching the target of 75% of the capacity of the Irish aquaculture industry being farmed in conformity with the ECOPACT EMS, substantial improvements will be made in reducing aquatic pollution from aquaculture. The EMS contains Key Objectives relating to control of fuel, cleaning agents, lubricants and oil spills. By promoting the control of these substances, the EMS will likely have a minor positive impact on aquatic pollution.

6.7.2 *Promote more Sustainable Forms of Water Consumption in all Fishing and Aquaculture Activities*

Innovation Support Measure

One of the seven objectives under this measure is to prioritise initiatives and pilot projects that seek to improve energy efficiencies, reduce environmental impact and deal with the issues of waste disposal and treatment. The target to achieve this objective is to provide funding up until 2015 to support the range of initiatives identified under this measure. The scale of the impact will largely depend on the level of funding allocated to tackling environmental issues under this measure; however it is likely that the funding of initiatives to tackle waste disposal and treatment and reduce environmental impact will have a minor positive impact on promoting more sustainable forms of water consumption.

Aquaculture Industry Development Measure

One of the priority objectives under this measure is to support innovation and other initiatives to improve the efficiency, safety and competitiveness of the sector. One area that efficiency could be increased could be the more sustainable use of water. It is possible therefore that investment in this measure will lead to more sustainable use of water. The scale of the impact will largely depend on the level of funding allocated to tackling environmental issues under this measure; however it is likely that the funding of initiatives to tackle waste disposal and treatment and reduce environmental impact will have a neutral to minor positive impact on promoting more sustainable forms of water consumption.

Social and Economic Sustainability Measure

One of the objectives under this measure is to create a minimum of three strategically located depuration/relaying facilities. While such facilities use sea water for the most part, further design considerations with regard to potential environmental impact and any fresh water usage means that this measure could have a minor positive impact on promoting more sustainable forms of water consumption.

Marine Environmental Protection Measure

The Marine Environment Protection Measure contains objectives to increase awareness and response to environmental policies and promote the introduction of Environmental Management Systems. This includes providing funding to contribute to the better, sustainable management and/or conservation of resources. It is predicted that this Measure will have a minor positive to neutral impact.

Marine Environmental Protection and QA Measure

One of the key objectives of this measure is to ensure that 75% of the capacity of the Irish aquaculture industry is farmed in compliance with the ECOPACT EMS. It is likely that the ECOPACT EMS will encourage producers to adopt more sustainable forms of water consumption. Therefore this measure could have minor to major positive impacts against this environmental objective, with the majority of aquaculture developments adopting more sustainable forms of water consumption.

6.7.3 Minimise conflicts with the overall objectives of the WFD

Innovation Support Measure

One of the objectives for this measure is to prioritise initiative and pilot projects that seek to reduce environmental impact and deal with the issues of waste disposal and treatment.

The manner in which this will be achieved, and the areas that will be targeted for funding are unclear however. It is likely that any initiatives and pilot projects that manage to reduce environmental impact on the water environment will have a minor positive impact.

Aquaculture Industry Development Measure

One of the priority objectives of this measure is to promote the introduction of technology to open up new areas of offshore water to aquaculture. If properly sited, and undertaken in-combination with reducing aquaculture activities in more near-shore waters, new developments in offshore areas with more dispersive currents could reduce levels of water pollution. It is likely that this measure will result in a neutral to minor negative impact to minimising conflicts with the overall objectives of the WFD.

Social and Economic Sustainability Measure

The development of carrying capacity models for five shellfish bays has the potential to lead to more sustainable stocking levels in the five bays, potentially resulting in improvements to the local water environments in these areas. The measure should therefore have a minor positive impact on minimising conflicts with the overall objectives of the WFD.

Marine Environmental Protection Measure

Some of the key objectives of this measure cover investment concerning production, in particular infrastructure directed at waste treatment and investments relating to the storage and treatment of waste at fishing ports, landing sites and shelters. It is predicted that funding aimed at theses measures will have a minor positive impact on minimising aquatic pollution arising from fishing and aquaculture activities. This should have a minor

positive impact on minimising conflicts with the overall objectives of the WFD.

Marine Environmental Protection and QA Measure

A key aim of this measure is to ensure that 75% of the capacity of the Irish aquaculture industry is farmed in compliance with the ECOPACT EMS. The EMS contains Key Objectives relating to control of fuel, cleaning agents, lubricants and oil spills. By promoting the management of use of these substances, the EMS may have a minor positive impact on minimising conflicts with the overall objectives of the WFD.

6.8 AIR AND CLIMATE

There are two sub-objectives under the Air and Water objective. The thirteen measures have been screened against these sub-objectives in *Table 6.7* below.

Table 6.7 Air and Climate Scoping Table

Air & Climate	1. Market research	2. Market development & promotion	3. Innovation support	4. Step-up development	5. Market investment	6. Competitiveness & performance	7. Fleet restructuring	8. Aquaculture industry development	9. Social & economic development	10. Social & economic sustainability	11. Marine environment protection	12. Marine environment protection & QA	13. Seafood industry training
Promote clearer and more efficient fuel usage in all fishing activities							●						
Promote greater energy conservation for aquaculture activities												●	

Source: ERM (2008)

6.8.1 *Promote clearer and more efficient fuel usage in all fishing activities*

Fleet Restructuring Measure

One of the objectives under the fleet restructuring measure is to assist in the upgrading of the fuel efficiency systems on up to 100 vessels. This, together with the decommissioning laid out in the measure will lead to a minor

positive impact to promoting clearer and more effective fuel usage in all fishing activities.

6.8.2 *Promote greater energy conservation for aquaculture activities*

Marine Environment Protection & QA Measure

It is possible that through reaching the target of 75% of the capacity of the Irish aquaculture industry being farmed in conformity with the ECOPACT EMS, and accredited Quality, Eco and Organic standards improvements will be made in promoting energy conservation for aquaculture activities. The impact is likely to be neutral to minor positive.

6.9 *MATERIAL ASSETS*

There is a single Objective which relates to Material Assets. The thirteen SEA measures have been screened against these sub-objectives in *Table 6.8* below.

Table 6.8 Material Assets Scoping Matrix

Material assets	1. Market research	2. Market development & promotion	3. Innovation support	4. Step-up development	5. Market investment	6. Competitiveness & performance	7. Fleet restructuring	8. Aquaculture industry development	9. Social & economic development	10. Social & economic sustainability	11. Marine environment protection	12. Marine environment protection & QA	13. Seafood industry training
Increase investments in community fishing infrastructure, processing education and training facilities.							●	●	●				●

Source: ERM (2008)

6.9.1 *Increase investments in community fishing infrastructure, processing education and training facilities.*

Fleet Restructuring Measures

The Fleet Restructuring Measure contains aims to assist up to 50 young skippers to purchase their first vessel, and to introduce up to 30 new Marine Tourism/sea angling vessels. This aim is likely to have a minor positive impact in increasing investments in community fishing infrastructure. Additionally, the decommissioning of vessels will result in remaining vessels in the fleet being more valuable and economically viable. However, it is acknowledged that those vessels being decommissioned with have a negative

impact on their owners (notwithstanding the financial compensation which will be paid in lieu of the decommissioned vessels).

Aquaculture Industry Development measure

There a number of objectives under this measure which should increase investments in community fishing infrastructure, processing, education and training facilities. Building a critical mass in the production of key species, promoting the diversification of the aquaculture industry and promoting the introduction of new technology to open up offshore locations for aquaculture are all likely to involve increased investments in fishing infrastructure and processing facilities. These objectives will be funded through a share of €123M. This measure is likely to result in a minor positive impact.

Social and Economic Development Measure

One of the areas for action under this measure is port and landing infrastructure. Funding will be split between three schemes: improving operational efficiency/reducing costs; Product Quality; and first-point-of-sale for whitefish species. Through the three schemes it is likely this funding will have a positive impact on increasing investments in community fishing infrastructure and processing facilities and this is a minor positive impact.

Seafood Industry Training Measure

The key target of this measure is to increase training attendances. Training will be delivered at a range of locations, including through strategic alliances with other training institutions. Although no direct investment in new training facilities is set out under the measure, it will enable more training to be provided, thereby increasing the knowledge-base of fishermen and this is a major positive impact.

6.10 CULTURAL HERITAGE

There is a single Objective which relates to Cultural Heritage. The thirteen measures have been screened against these sub-objectives in *Table 6.9* below.

Table 6.9 Cultural Heritage Screening Matrix

Cultural heritage	1. Market research	2. Market development & promotion	3. Innovation support	4. Step-up development	5. Market investment	6. Competitiveness & performance	7. Fleet restructuring	8. Aquaculture industry development	9. Social & economic development	10. Social & economic sustainability	11. Marine environment protection	12. Marine environment protection & QA	13. Seafood industry training
Protect and enhance seafood industry-related cultural heritage resources and assets								●					

Source: ERM (2008)

6.10.1 *Protect and enhance seafood industry-related cultural heritage resources and assets*

Aquaculture industry development measure

One of the objectives of this measure is to open up new offshore areas to aquaculture development. Any new developments may potentially impact on cultural heritage resources and the assets. It is possible that developments in new areas may adversely affect the existing cultural heritage. However it is expected that site specific licensing requirements will limit the impacts of any new development. The requirement for site based archaeological studies prior to licensing may contribute to new cultural heritage discoveries. Therefore the impacts are expected to be minor negative to neutral.

Socio-economic Sustainability Measure

The socio-economic sustainability Measure seeks to create three new strategically located depuration/relaying facilities. The impacts of these facilities is unknown, however it is expected that site specific licensing requirements will limit the impacts of any new development. Therefore the impacts are expected to be minor negative to neutral.

6.11 *LANDSCAPE*

There is a single Objective which relates to Landscape. The thirteen measures have been screened against these sub-objectives in *Table 6.10* below.

Table 6.10 Landscape Screening Matrix

Landscape	1. Market research measure	2. Market development & promotion measure	3. Innovation support measure	4. Step-up development measure	5. Market investment measure	6. Competitiveness & performance measure	7. Fleet restructuring measure	8. Aquaculture industry development measure	9. Social & economic development measure	10. Social & economic sustainability measure	11. Marine environment protection measure	12. Marine environment protection & QA measure	13. Seafood industry training measure
Improve the landscape around fishing port areas with a view to promoting aquatic and local tourism								●	●				

Source: ERM (2008)

6.11.1 Improve the landscape around fishing port areas with a view to promoting aquatic and local tourism

Aquaculture Industry Development Measure

By promoting the introduction of new technology to open up offshore locations for aquaculture, this measure may have a negative impact on improving the landscape around fishing port areas by opening up previously un-impacted areas to development. However aquaculture developments often form an important part of the landscape around fishing port areas, and being offshore will have a lesser impact than similar nearshore developments. This measure is therefore predicted to have unknown impacts. Site specific consent procedures will assist with the process of minimising adverse landscape impacts.

Social and Economic Development Measure

One of the key objectives for this measure is to invest funds in ports and infrastructure in relation to improving the seafood supply line. This relates to improving the conditions under which fisheries products are landed, processed and stored. There is some scope under this objective for funding improvements to port and harbour buildings which could have a positive impact on the landscapes around fishing port areas. However as the level of funding is not outlined and will be divided between six separate objectives, and impact is likely to be minor negative to neutral.

6.12 EFFECT INTERRELATIONSHIPS & CUMULATIVE IMPACTS

As noted in *Section 5.12*, the key effect interrelationships and links are between:

- *Biodiversity, flora and fauna and water*: these environmental components are strongly linked and dependent on each other. In this case, the biological aspects of water and addressed under biodiversity, flora and fauna while water covers water quality, pollution and related issues.

- *Biodiversity, flora and fauna and population:* the population (local and rural fishing communities) depends on a robust and successful biodiversity/ecosystem so that the economic exploitation of the marine and aquatic environments is maintained.

- *Biodiversity, flora and fauna and Soils:* The benthic environment is one of the key marine ecosystems. The biological aspects of the benthic environment is addressed under biodiversity, flora and fauna. Soils cover the non-biodiversity aspects of soils (e.g. soils as a resource).

- *Biodiversity, flora and fauna and human health:* there is a clear link between the health and condition of shellfish and related seafood produce and human health. Shellfish can accumulate natural biotoxins and other anthropogenic contaminants and if consumed by human, this can result in illness.

- *Biodiversity and cultural heritage:* As noted in the NIEA's scoping consultation response (*Section 4.3.1*), marine wrecks can provide a niche habitat for aquatic flora and fauna.

- *Population and human health*: promotion of fish-related food produce will improve human health - dietary issues - in the general population.

- *Water and human health*: water pollution can have significant impacts to human health, through pollution of drinking water supplies (from a range of sources, such as inadequate treatment of wastewater and agricultural runoff) to contamination of waters used for recreational purposes (bathing waters etc.).

- *Population and material assets*: the decommissioning of elements of the Irish fishing fleet will benefit (through the payment of compensatory funds for boats being decommissioned) those who work in the Irish fishing sector as the excessive catching capacity will be reduced to better match the available national quota. Those remaining in the fishing industry will be able to obtain a better financial yield from the limited national fishing quota. Additionally, general investment and grant-aided assistance to the wider seafood-related infrastructure (training, facilities etc.) will benefit local and rural fishing communities.

- *Material assets and biodiversity, flora and fauna*: there is a link between the catching capacity (i.e. fishing boats, considered under material assets) and its potential to impact on biodiversity, flora and fauna. As noted in *Section 5.2.1*, fish stocks around Ireland and (on a world-wide basis) are under considerable pressure and are, generally, being fished at unsustainable levels.

There is also the potential for cumulative impacts of the National Seafood Plan with other plans and programmes. The likely plans and programmes with which cumulative impacts may arise are:

1. Co-funded Seafood OP (*Section 2.2.5*);
2. River Basin Management Plans (and PoMs) (*Section 2.2.7*);
3. Natura 2000 Conservation Management Plans (*Section 2.2.7*);
4. County Development Plans; and
5. Landscape Management Plans.

BIM is aware of the other plans and programmes mentioned above and is currently working with various agencies to ensure that the implementation of the National Seafood Plan will not conflict with other environmental objectives. Initiatives such as CLAMS also help consider wider issues and potential impacts both arising from and affecting Aquaculture operations and other activities in the area (*Figure 6.1*). There is the potential for cumulative impacts to arise with the individual funding applications under the Aquaculture Measure (and the subsequent scheme). However, as mentioned previously, aquaculture activities are subject to a rigorous licensing process which includes Appropriate Assessment and Environmental Impact Assessment, as applicable. These assessments include a cumulative assessment component. Funding under the aquaculture measure will only be granted to applicants who have already obtained all appropriate consents (such as an aquaculture license).

6.13 SUMMARY

Table 6.11 below presents a pre-mitigation summary table of the likely significant effects on the environment as a result of the implementation of the National Seafood Plan. As noted previously, many of the Environmental Objectives had multiple sub-objectives. The summary presented below is an overall assessment under the respective environmental objective.

Table 6.11 Summary table

	Biodiversity	Population	Human health	Soil	Water	Air & climate	Material assets	Cultural heritage	Landscape
1. Market research measure		▲							
2. Market development & promotion measure		▲	▲						
3. Innovation support measure		▲			▲				
4. Step-up development measure		▲/▲							
5. Market investment measure		▲							
6. Competitiveness & performance measure		▲							
7. Fleet restructuring measure	▲	▲	▲		▲	▲	▲/▲		
8. Aquaculture industry development measure	N/▼	▲	▲	N/▼	N/▼		▲	N/▼	N/▼
9. Social & economic development measure		▲	▲						
10. Social & economic sustainability measure	▲	▲			▲			N/▼	N/▼
11. Marine environment protection measure	▲	N		N	▲				
12. Marine environment protection & QA measure	▲	▲			▲	N			
13. Seafood industry training measure		▲	▲				▲		

Source: ERM (2008)

▲ Major/significant positive effects
▲ Minor positive effects
N Neural effects
▼ Minor negative effects
▼ Major/significant negative effects

Table 6.11 shows that the National Seafood Plan is predicted to have predominately minor positive effects under population, which, in the context of the National Seafood Plan, is defined as rural community and coastal-based

populations. Some major positive (significant) are predicted under some Environmental Objectives. Many rural fishing communities have higher than average unemployment and offer limited job and economic opportunities. The National Seafood Plan will greatly increase these population's quality of life and future economic prospects. Short-term/initial minor negative effects are predicted under the Step-up Measure, but these will become positive in the medium and longer-term.

Under biodiversity and flora and fauna, predominately minor positive are predicted. However, regarding the Aquaculture Measure, the majority of the predicted impacts range from neutral to minor negative. The basis for this assessment is that the increase in total production from aquaculture has the potential to have some minor negative effects on the environment; although it is too early in the National Seafood Plan implementation programme to address the risk of this minor negative impact arising.

Regarding human health, major positive effects are predicted for three Measures (Fleet restructuring, Aquaculture and Seafood Training) as these will greatly increase health and safety investment and knowledge in the wider seafisheries community and sector. Minor positive effects are predicted for the other Measures.

Under soil, neutral effects are predicted under the Marine Environmental Protection Measure. It should be noted that the biological aspects of soil (i.e. the benthic environment) is addressed under biodiversity, flora and fauna.

Minor positive impacts are predicted for water under the majority of Measures, similar to that of biodiversity, flora and fauna. Neutral to minor negative effects are predicted under the Aquaculture Measure. A key consideration is future higher water quality requirements as a consequence of the Shellfish Waters Directive and the Water Framework Directive.

Minor positive and neutral effects are predicted under air and climate.

Minor positive effects under material assets are predicted as the reductions in the fishing fleet will reduce the amount of boats, all of whom are trying to operate within catch constraints. Thus, the economic yields and conditions for the remaining boats will be improved. However some short-term negative effects will arise for those vessels which are decommissioned. Major positive effects are predicted under Seafood Training Measure given the large investment in training and knowledge sharing across the seafisheries community.

Neutral to minor negative effects are predicted for landscape and cultural heritage under the Aquaculture and Socio-Economic Sustainability Measure.

The measures assessed in this report do not exist and will not be implemented in isolation. This is an important consideration in the management and mitigation of potentially negative impacts. For example, the aquaculture

industry development measure is intrinsically linked to the Social & Economic sustainability measure and the Marine Environment Protection & QA measure. Therefore it can be concluded that an application for grant assistance under the Aquaculture industry development measure will be considered more favourably if the applicant has participated in initiatives such as CLAMS and ECOPACT which are funded under the other measures. In turn, the positive environmental impacts associated with CLAMS and ECOPACT are actually what helps to minimise the potential negative impacts identified under the Aquaculture industry development measure.

7 MITIGATION MEASURES

7.1 INTRODUCTION

Mitigation measures are proposed below to address any likely negative effects as a result of the implementation of the National Seafood Plan. Even where neutral and positive effects have been predicted for the National Seafood Plan, mitigation measures will still be proposed to ensure that the predicted positive effects will actually arise and also to further enhance the positive environmental effects of the National Seafood Plan.

7.2 MITIGATION MEASURES

7.2.1 General

- The Water Framework Directive requires the preparation of RBMPs and PoMs for all the identified River Basin Districts (RBDs) within the island of Ireland (*Section 2.2.7*) and these RBMP are to be in place by December 2009. It is recommended that any recommendations in these RBMP and PoMs are fully considered by BIM and other interested parties. It is also recommended that the individual CLAMS Groups specifically consider information in the various WFD Catchment Reports, especially the risk assessment information and data. This mitigation measure will enhance the effectiveness and the potential for positive cumulative impacts with other plans and programmes (*Section 6.12*).

- BIM shall put in place a systematic and transparent scheme implementation assessment and monitoring protocol. The objective of this scheme implementation protocol is to ensure that the implementation of the various schemes (through which the various measures are to be implemented) and projects (where relevant) will be assessed for potential significant environmental effects. Where negative effects are thought to arise, BIM will examine the scheme and amend so as to reduce the potential for negative effects. The proposed mechanism for this protocol is summarised in *Table 7.1* below. This protocol is based on the one developed as part of the Co-funded Seafood OP (*Section 2.2.5*) following the conclusion of the public consultation stage of that SEA. A key aspect of this 'lower-tier' assessment is that is will be more focused on environmental effects of implementing the National Seafood Plan at a point in the future when the potential effects can be determined with a greater degree of accuracy and knowledge. The key advantage of this tool is to allow all the schemes developed under the National Seafood Plan to be assessed for environmental impact under a consistent set of criteria.

Table 7.1 Proposed scheme implementation protocol

Stage	Detail
1. Assessment stage	• Applications for grant aid to be received and evaluated by BIM in the normal manner. • An additional protocol whereby the applications would also be assessed to determine the potential for significant environmental impacts not already taken into account in existing processes, would be conducted by both BIM and the M.I. • Where judged to have the potential to have significant environmental impact, additional submission(s) may be required from the applicant, to provide whatever extra information is deemed necessary. • This additional information would be assessed by both BIM and the M.I. The input of other experts may also be brought into the process if necessary. • A report would be then be prepared and submitted to the implementing body to take into consideration when finally assessing the project. • Project approval may be subject to associated conditions.
2. Monitoring and auditing of assessment protocol	• Annual Audit by Implementing Body to cover compliance with environmental protocol for project selection. • Results of Audit to be furnished to Department who will present to the OP Monitoring Committee.
3. Independent auditing	• Independent Assessment of impact of the programme from an environmental perspective to be carried out at 2 yearly intervals. • Any recommendations from that Assessment to inform future support for projects.

Source: BIM (2008)

7.2.2 *Aquaculture Industry Development Measure*

- BIM is also confirming its awareness and commitment to the various site-specific assessment and consent protocols that are in existence. These are wider legislative and legal procedures (e.g. planning permission, aquaculture licensing, EIA, appropriate assessment, IPC licensing etc.) which will apply to the future activities which may arise from the National Seafood Plan, such as additional/new aquaculture activities or new sites for aquaculture processing. Through the application of these procedures (by agencies and authorities outside of BIM, such as a local planning authority or a Government department), the majority of the negative effects predicted for the Aquaculture Measure and the Social and Economic Sustainability Measure will not arise.

- BIM are assisting DAFF in the development of a site-specific Appropriate Assessment protocol for aquaculture licensing. Such a

tool is essential in ensuring that potential site-specific impacts of aquaculture activities are addressed at this appropriate level. An established working group comprising BIM DAFF, MI and NPWS officials are compiling and testing the appropriate assessment protocol and it is anticipated that the group will continue to be convened for ongoing and regular review of the process; if new data becomes available to inform assessments; or new practices are recommended that will improve the overall effectiveness of the assessment procedure. This mitigation measure will assist and enhance the effectiveness of the site-specific AA (required as part of the aquaculture licensing process) in minimising impacts from site-based aquaculture operations (*Section 6.3.6*).

8 MONITORING

8.1 INTRODUCTION

This section outlines a monitoring programme which will monitor the predicted effects of the Irish National Seafood Plan. This monitoring programme will highlight the potential significant effects on the environment due to the ongoing implementation of the National Seafood Plan and also form the basis for amendments to the National Seafood Plan's Measures, if required.

Monitoring of the environmental effects of the implementation of the National Seafood Plan is a requirement under the SEA Regulations. The purpose of monitoring is to determine if unforeseen effects have arisen during the implementation of the National Seafood Plan and to take remedial action, if required.

BIM, as the plan-making authority, is responsible for this monitoring programme (although BIM is not responsible for generating the monitoring data or undertaking specialist studies to supplement the existing data, unless BIM is listed as a source for the data in *Table 8.1* below).

Monitoring also will test the predictions made in the Environmental Report. Monitoring results can then be used to inform any subsequent Environmental Reports and also increase the quality and availability of baseline data.

8.2 PROPOSED MONITORING PROGRAMME

Table 8.1 below outlines the proposed monitoring programme for the Irish National Seafood Plan.

Table 8.1 Irish National Seafood Plan SEA monitoring programme

Environmental topic	Measure	Monitoring requirement	Source
Material assets	Fleet restructuring	Rate of progress of the decommissioning of the Irish demersal and shellfish fleets	DAFF or DTM
Population	Step-up development; Competitiveness performance	Seafood and related employment	BIM and Census data
Biodiversity, flora & fauna, Water	Aquaculture industry development;	Rate of aquaculture monitoring reporting (currently at 66%)	DAFF or DTM
		Aquaculture monitoring results and the rate of compliance with license conditions	DAFF or DTM
		Regional nutrient loading (and other relevant environmental data) from aquaculture and fishing activities	Water Framework Directive Basin District Reports
		Compliance with recommendations in RBMP and PoM	Relevant RBMP
		NPWS Conservation Status Report (required under Article 17 of the Habitats Directive)	NPWS
Human health	Aquaculture industry development;	MSSC - biotoxin and microbiological monitoring and rates of compliance	DAFF or DTM
	Seafood industry training	Uptake and attendance at training courses	BIM

Source: BIM & ERM (2008)

8.3 *REPORTING REGIME*

It is recommended that the SEA-related monitoring be tied-in with the National Seafood Plan monitoring. It is proposed that SEA monitoring results are presented in the Annual Implementation Report. Note that it is the authorities with responsibility for the data sources (such as the DAFF or DTM, Marine Institute, EPA, local authorities etc.) to provide up-to-date data. It is BIM's responsibility is to obtain the latest data from these sources, present the results, and comment on emerging trends, in its Annual Implementation Report.

9 SUMMARY

9.1 INTRODUCTION

This Section presents a short summary of the main findings of the Irish National Seafood Plan SEA. Please note that this section does not represent the NTS, which can be found at the front of this Environmental Report.

9.2 SUMMARY

The overall findings of the SEA process was that the 13 Measures of the National Seafood Plan are predicted to have, broadly, minor positive effects across the various environmental topics.

However, for some Measures, there are neutral to minor negative environmental effects predicted and these are the Aquaculture Industry Development Measure and the Social and Economic sustainability Measure. However, a combination of site-specific consent protocols and the proposed mitigation measures will address these potentially minor negative effects.

It is important to note that the National Seafood Plan only covers a small portion of Ireland's overall seafood sector, as was the case with the Co-funded Seafood OP. This focus is due both to the strategic nature and purpose of the National Seafood Plan; and also due to the fact that the National Seafood Plan is focused on the Priority Axes and Articles of the EFF.

Given the limited focus of the National Seafood Plan; the SEA has also been limited in scope to that being proposed in the National Seafood Plan. While the National Seafood Plan is narrow in focus, what it does propose is, broadly, positive and beneficial for the environment. This is not to ignore the various and significant environmental problems which exist in Ireland marine, inshore and aquatic environments, as summarised in *Section 5*. BIM is aware of these current issues and is working towards resolving those issues which are related to aquaculture and fishing activities. However, much of these problems are equally significant for Ireland's many other industrial and commercial sectors and, indeed, for the wider membership of the European Commission.

10 REFERENCES

10.1 REFERENCES

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Annex A

Habitats Directive Article 6 (Appropriate) Assessment

ANNEX A CONTENTS

1 INTRODUCTION

1.1 NEED FOR APPROPRIATE ASSESSMENT

The National Seafood Plan sets out 13 measures aimed at building a sustainable, profitable, competitive and market-focused seafood industry through investing in areas such as sea fishing, seafood processing, aquaculture, training and education programmes and marketing of seafood produce.

The investment and subsequent expansion of areas such as aquaculture and sea fishing which occur within the coastal, inshore waters and, in the case of aquaculture, freshwaters of Ireland have the potential to have an affect on the Natura 2000 network of Special Protection Areas (SPAs) and Special Conservation Areas (SACs) within these waters.

An SPA is a site designated (or pending designation) under the *European Directive on Conservation of Wild Birds (79/709/EEC)* (known as the Birds Directive) to protect birds that are considered rare or vulnerable within the European Community and all regularly occurring migratory birds. An SAC is a site designated (or pending designation) under the *European Directive on the Conservation of Natural Habitats and Wild Flora and Fauna (79/709/EEC)* (known as the Habitats Directive) to protect sites that are considered rare because of their habitats or the species contained within them.

Under *Article 6* of the *Habitats Directive (Council Directive 92/43/EEC)* the Competent Authority must undertake an Appropriate Assessment (AA) of proposals which may have significant impacts on the integrity of a European Site in view of the conservation objectives for which the SPA or SAC have been designated. Due to the nationwide scale of the National Seafood Plan, there is the potential to impact on a number of European Sites. This AA will assess the implications of the impacts of the measures, and the achievement of the targets set out in the National Seafood Plan.

2 HABITATS DIRECTIVE ASSESSMENT PROCESS

2.1 ASSESSMENT PROCESS

Given the potential to significantly impact on Ireland's network of Natura 2000 sites, this Article 6 (Habitats Directive) Assessment (AA) has been undertaken in parallel with the SEA process.

This AA process has involved the consideration of the potential impacts that each of the measures of the National Seafood Plan may have on the various types of designated habitats. Given the strategic level of the National Seafood Plan, the application of a site-specific appropriate assessment is not fully possible as the National Seafood Plan does not identify sites for the schemes arising from the National Seafood Plan which may have an impact upon European Sites.

European guidance (1) on Appropriate Assessment includes the following staged process of the appropriate assessment process.

1. Define the plan or proposal.

2. Establish that the proposal is not necessary to the management of the site for nature conservation purposes.

3. Determine whether the proposal could result in a 'likely significant effect' (LSE) on the site.

4. The key test for the 'appropriate assessment' is whether the impact the proposed plan or project may have on the integrity of the site (and the conservation status of its designated features) is significant. Essentially the key question is *"can it be demonstrated that the proposal will not adversely affect the integrity of the site?"*

5. If the Appropriate Assessment indicates that no adverse effect will occur the competent authority may proceed to grant consent; if not, further steps are required to demonstrate that specific reasons why the development should be permitted apply, before consent may be granted.

In this case the plan (National Seafood Plan) has been outlined in the Environmental Report, and it is clear that the programme is not necessary to the management of any of the European Sites affected. Therefore it must be determined whether or not there will be a Likely Significant Effect (LSE) on the Natura 2000 sites affected.

(1) European Commission Environment Division 2001; Assessment of plans and projects significantly affecting Natura 2000 sites.

It should be noted that the AA process is typically focused on site-specific activities which may have an impact in or adjacent to defined Natura 2000 sites. Given the strategic and non-site specific nature of the National Seafood Plan, the standard AA methodology has been amended to be more generic/strategic with regards to the various designated Annex 1 habitats (such as coastal lagoons, estuaries, mudflats and sandflats etc.).

The AA methodology set out below does not replace site-specific AA to accompany a site specific application (such as an aquaculture license). In addition, future localised plans and programmes may also require a form of AA.

The assessment below aims to provide a screening assessment of the likelihood of a negative impact upon a European Site arising as a result of the implementation of the National Seafood Plan and its schemes. BIM recognise that, as part of their decision to fund or consent specific schemes under the National Seafood Plan, where it is considered possible that a negative impact is likely then a further, site specific, appropriate assessment will be required in order to fully comply with Article 6 of the Habitats Directive.

2.2 *PROCESS OF DETERMINING LIKELY SIGNIFICANT EFFECTS*

To determine if the OP is likely to have significant effects on the designated site the following issues are considered.

- could the proposals affect the qualifying interest and are they sensitive to the effect;
- the probability of the effect happening;
- the likely consequences for integrity of the designated conservation features if the effect occurred; and
- the significance, magnitude, duration and reversibility of the effect.

Table 1 outlines the individual measures of the National Seafood Plan and the likely outcomes relevant to European Sites, and *Table 2* considers the potential for these outcomes to result in a significant effect if they were to within the Natura network of sites. The table also assigns a potential magnitude to the possible ecological impact of these outcomes.

Table 3 and the subsequent tables referred to within it, set out each Habitats Directive Annex I habitat and Annex II species which the plan may affect. The tables then list all of the SACs which support this habitat or species and present all of the National Seafood Plan operations which have been identified in its vicinity. This data is based on the BIM records of aquaculture licenses and from advice from the BIM area staff in relation to the European marine site and its surrounding area. Given the high level nature of the National Seafood Plan this level of assessment is felt to be appropriate.

For individual SPA sites, complete list of species interest features and supporting habitats are unavailable. Therefore the adopted approach has been to identify groups of species with similar habitat and ecological requirements which a site might support. The four categories which have been selected are waders, wildfowl, diving ducks and seabirds. For each group, all SPAs with a marine element which support species in this group have been identified. In addition any inland SPAs which support these species groups and are in the vicinity of a known aquaculture site have been identified.

Table 5a lists the likely significant effects (LSE) of the National Seafood Plan outcomes in relation to the ecological requirements and sensitivities of the designated features of the European Marine Site network. Where there is the potential for a significant effect to occur from the implementation of the measures within the National Seafood Plan then further mitigation measures are considered in *Table 6*.

Table 5b lists the likely significant effects (LSE) of the National Seafood Plan outcomes in relation to the ecological requirements and sensitivities of the designated features of the potentially vulnerable freshwater habitats and species. Where there is potential for a significant effect to occur from the implementation of the measures within the National Seafood Plan then further mitigation measures are considered in *Table 6*.

Table 6 presents the key mitigation measures for the operations. The key mitigation is the existing site-based primary licensing system for both aquaculture and new fisheries conservation measures and the aquaculture license renewal process.

Table 1 Irish Seafood OP Measures and an assessment of likely outcomes relevant to European Sites

OP Measure	OP Intervention/Measure	OP Target	Potential Outcome Relevant to European Sites
1. Market research measure	• Support the achievement of value generation targets for 2015 through the establishment of a comprehensive market research programme of initiatives with particular focus on key species with good growth potential • Concentrate resources on developing research and intelligence capability within key European markets in addition to the domestic market • Support the development of a customer-focused strategy through building a comprehensive understanding and knowledge of key existing and potential customer accounts in these markets • Undertake research to support the shift away from bulk/commodity trading to higher value channels with a key focus on understanding the retail and foodservice channels. • Support the improvement of supply chain management practices and reduction in the number of intermediaries through the identification of new market opportunities • Provide support to the increased level of R&D and NPD activity supported through the Step-Up Development Measure • Support the promotion of fisheries and aquaculture products through providing analysis of trends and market dynamics to feed into the development and evaluation of promotional campaigns and strategies. • – Prioritise a programme of research to be undertaken to study the potential usage of fish and marine bio-diversity in the functional foods and ingredients sectors	• Achieve the projected increase in value of €209 million by 2015. • Achieve the projected increase of 40% in current exports from €354 million in 2005 to €495 million by 2015. • Achieve the projected increase of 22% in domestic sales from €311 million in 2005 to €379 million in 2015	• No likely significant impacts to EUROPEAN SITES

OP Measure	OP Intervention/Measure	OP Target	Potential Outcome Relevant to European Sites
2. Market Development Promotion Measure	• Concentrate the focus of marketing and promotional activity to support the domestic market and Ireland's five premier export markets – France, UK, Spain, Germany and Italy. • Prioritise support to capture retail, foodservice and ingredients customers in these markets to support the shift away from bulk/commodity trading and the development and launch of new products developed under the Step-Up Development Measure. • Develop detailed marketing plans for each key market to support the growth in sales and value of Irish seafood amongst key existing and potential customers. • Prioritise the development of marketing and promotional campaigns to support growth targets set out within these marketing plans and ensure that such campaigns are monitored and evaluated in terms of their effectiveness . • Support an enhanced level of trade marketing and promotional activity to position Ireland favourably vis-à-vis competitors and communicate the developments and progress being made by the industry in meeting market requirements. • Prioritise support for initiatives where feasible, to shorten the supply chain and generate higher returns for the industry. • Provide support to assist in the promotion of fisheries and aquaculture products and in particular seafood originating from local landings and aquaculture operations. • Provide support for quality certification, label creation and the certification of products caught or farmed using environmentally friendly production methods. • Support initiatives to educate both trade and consumers on the health and nutritional benefits of seafood in addition to the ease of preparation and convenience of seafood products.	• Provide a total investment of €X million to the seafood industry over the 2007-2013 period, which equates to an average annual allocation of €X million. • Prioritise projects and initiatives to support investment through the Step-Up Development Measure. • Equally, prioritise support for collective initiatives supported under the Market Investment Measure. • In tandem with the other Measures in Core themes one and two: • Achieve the overall increase in value generation of €209 million by 2015. • Achieve the projected increase of 40% in current export value from €354 million in 2005 to €495 million by 2015. • Achieve the projected increase of 22% in domestic sales from €311 million in 2005 to €379 million in 2015	• No likely significant impact to EUROPEAN SITES

OP Measure	OP Intervention/Measure	OP Target	Potential Outcome Relevant to European Sites
3. Innovation Support Measure	• Establishment of BIM's Seafood Innovation Initiative to facilitate access to services by the relevant national authorities and to best-in-class international service providers. • Prioritise the development of projects directly aimed at overcoming the obstacles currently facing the industry and developing capability, industry specific knowledge, technological advancement, innovation, R&D and NPD within the processing sector. • Prioritise initiatives and pilot projects that seek to improve energy efficiencies, reduce environmental impact and deal with the issues of waste disposal and treatment. • Prioritise support for implementing quality and environmentally friendly projects for fisheries and aquaculture products. • Provide support for quality certification, label creation and the certification of eco-friendly products within the aquaculture and processing sectors. • Support the development of products utilising surplus or under-exploited species. • Adopt a twin-track approach for the pelagic sector to achieve economies of scale and cost efficiencies in the processing of bulk seafood products, in conjunction with a concerted drive to identify alternative market opportunities for pelagic products.	• Provide public investment of €X million over the 2007-2013 period to support the development of initiatives and projects for the benefit of the seafood processing sector in the areas of performance improvement, innovation, R&D, quality & environment and pelagic development. • Successful development of BIM's Seafood Development Centre as a central gateway structure to facilitate industry access to state supported services. • Achieve the successful development of a concentrated Pelagic Development Scheme with at minimum two value-added pelagic processing operations by 2013. • Prioritise projects and initiatives to support investment through the Step-Up Development and Competitiveness & Performance Measures. • In tandem with the other Market Development Measures to achieve: • the overall increase in value generation of €209 million by 2015. • the projected increase of 40% in current export value from €354 million in 2005 to €495 million by 2015. • o the projected increase of 22% in domestic sales from €311 million in 2005 to €379 million in 2015.	• No likely significant impact to EUROPEAN SITES

OP Measure	OP Intervention/Measure	OP Target	Potential Outcome Relevant to European Sites
4. Step up development measure	• Prioritise support for businesses demonstrating strong potential and good market prospects. • Provide assistance to poorly performing businesses in either resolving key obstacles or exiting the sector. • Provide an increased level of support for strategic alliances and partnerships to promote consolidation within the sector. • Prioritise support for investment to improve competitiveness and performance levels within the sector. • Prioritise support for investment in increased R&D, NPD and technology transfer within the sector. • Provide support to initiatives that seek to improve quality and food safety assurance. • Support investment in projects that seek to reduce environmental impact and introduce new environmentally friendly methods.	• Provide a total public investment of €X million within the processing sector over the 2007-2013 period, which corresponds to almost to a X-fold increase in State investment in comparison the 2000-2006 period (€Xm). • Utilise this public investment to unlock a further industry investment of €X million in the sector over the period • Create a restructured seafood processing sector by achieving a 50% reduction in the current total number of companies operating (i.e. 198) by 2013 and supporting the profitable development of the remaining companies. • Achieve the projected increase in value generation of €209 million for 2015 • Achieve at minimum five consolidated operations through a combination of strategic alliances and partnerships. • Achieve a significant uplift in the successful launch and marketing of new products and product extensions arising from the investment made under the Measure.	• No likely significant impact to EUROPEAN SITES

OP Measure	OP Intervention/Measure	OP Target	Potential Outcome Relevant to European Sites
5. Market Investment Measure	• Prioritise support for market research and feasibility studies to promote greater understanding of market dynamics, trends and consumer behaviour • Prioritise support for the identification through research of new opportunities for Irish seafood and to implement test-marketing initiatives • Provide incentives to assist in the promotion of fisheries and aquaculture products and in particular seafood originating from local landings and aquaculture operations • Provide support for quality certification, label creation and the certification of products caught or farmed using environmentally friendly production methods • Prioritise support for investment in improved supply chain management and direct sales to the market • Support the development of new packaging and technological advances to meet customer and consumer requirements • Support the up-skilling of staff in developing marketing capability and related skills (e.g. e-commerce, languages, web development) within the industry	• Provide a total investment of €X million to industry over the 2007-2013 period to support industry-led marketing initiatives and projects. • Utilise this investment to unlock a further industry investment of €X million over the period, which equates to a X-fold increase investment in comparison to industry investment of €X million over the 2000-2006 period. • And in common with the other Marketing Measures to: • Achieve the projected increase in value of €209 million by 2015. • Achieve the projected increase of 40% in current exports from €354 million in 2005 to €495 million by 2015. • Achieve the projected increase of 22% in domestic sales from €311 million in 2005 to €379 million in 2015.	• No likely significant impact predicted

OP Measure	OP Intervention/Measure	OP Target	Potential Outcome Relevant to European Sites
6. Competitiveness Performance Measure	• Prioritise the building of business and financial capability within the sector, which is recognised as a fundamental weakness and an impediment to the sector's future development. • Provide assistance to poorly performing businesses in resolving key development obstacles to ensure their long-term survival and profitability. • Provide increased state support to businesses on developing exit strategies out of the sector and in developing strategic partnerships and alliances. • Prioritise initiatives and pilot projects that seek to develop capability, industry specific knowledge, technological advancement, R& D and innovation for the benefit of the sector. • Prioritise initiatives and pilot projects aimed at improving energy efficiencies, reducing environmental impact and address waste disposal and treatment issues. • Develop projects and initiatives aimed at understanding issues relating to competitiveness in an international context and support the improved competitiveness of the processing sector. • Support the achievement of the value generation targets set out for 2015 with specific focus on the shift away from bulk/commodity processing to the production and sale of high value fresh and prepared seafood products.	• Provide public investment of €X million for the processing sector over the 2007-2013 period, to support the development of collective initiatives and projects for the wider benefit of the processing sector. • Utilise this public investment to undertake a benchmark study of the processing sector to develop optimum levels of performance and establish a baseline benchmark from which progress can be tracked alongside investment support through the Step-Up Development Measure. • Establish a comprehensive business and financial management up-skilling initiative and achieve full mandatory participation for companies supported under the Step-Up Development Measure. • Undertake a minimum of ten key collective projects/initiatives aimed at tackling the spectrum of issues and obstacles confronting the processing sector. • Increase the level of expertise and knowledge of the global seafood-processing sector for the benefit of the Irish seafood industry.	• No likely significant impact on EUROPEAN SITES

OP Measure	OP Intervention/Measure	OP Target	Potential Outcome Relevant to European Sites
7. Fleet Restructuring Measure	• To restructure the national fleet through decommissioning; • To provide entry level assistance to young fishermen under 40 years of age; • To increase the operational efficiency and safety of the fleet; • To maximise the financial return for landings.	• To remove up to (3,660) GT's from the over 18 metre whitefish segment; • To Introduce up to 30 new Marine Tourism/sea-angling vessels; • To assist up to 50 Young Skippers (under 40) to purchase their first vessel; • To assist the upgrading of safety and quality, standards on up to 600 vessels;to assist the upgrading of the fuel efficiency systEuropean Sites on up to 100 vessels	• Change in the pattern of fishing effort from remaining fleet • Potentially more localised inshore fishing from sea-angling vessels. • Less discard fishing reducing overall fishing pressure on the marine environment. • Reduction in commercial stock mortality. • Reduction in non target species mortality including cetacean and bird by catch.
8. Aquaculture Industry Development Measure	• Build a critical mass in the production of key species with higher added value potential, particularly salmon and mussels. • To facilitate the entrance into the sector of new actors initially at a pilot scale • Create additional income and employment in peripheral coastal regions by promoting the production of those species with the potential for added value. • Support innovation and other initiatives to improve the efficiency, safety and competitiveness of the sector. • Promote the diversification of the aquaculture industry by encouraging the commercial development of new species. • Promote the introduction of new technology to open up offshore locations for aquaculture and to improve infrastructural support for the sector.	• That a total investment of €123.755 million is made by industry and state between 2007 and 2013 to increase the capacity of the Irish aquaculture sector to bring about increases in line with the 2013 targets • That the volume and value of output from the shellfish and farmed finfish sectors grows in accordance with the 2013 capacity targets	• Increased area of inshore marine environment under aquaculture. • Local changes in nutrient inputs and aquaculture derived pollutants. • Risk of exceeding environmental carrying capacity at existing sites. • Local changes to sedimentation and plankton populations resulting from shellfish culture. • Changes in patterns of use and aquaculture related human. • Increased risk of release of alien species associated with the culture of new species. • Increased risk of poorly considered cumulative impacts arising from a proliferation of aquaculture activities

OP Measure	OP Intervention/Measure	OP Target	Potential Outcome Relevant to European Sites
9. Social and Economic Development Measures (Fisheries)	• Human Skills Development • Infrastructure Development • Product Development & Innovation	• That €20 million from Exchequer and industry be put forward to support the three schemes within this Measure between 2007 and 2013 ; • That scheme components achieve a subscription rate, which ensures the proportional allocation of grant-aid over the period of the NDP; • That fishers diversifying into other sectors outside the fishing industry are supported; • That the services offered and the conditions, under which fish are landed, processed, stored and auctioned in existing public or private fishing ports achieve a recognised level of improvement, modernisation and environmental responsibility; • That industry requests for assistance in the development of innovative products, technologies and production methods, improving the use of little-used species, particularly species which have been hitherto discarded, by-products and waste and producing or marketing new products constitute 10% of all funding applications. • That competitiveness of coastal fisheries areas is evidenced by an increase in the pre-qualifying baseline of social and economic indicators related to fishing and supporting services	• Changes in patterns of fishing effort to exploit 'new' species • Exploitation of previously un-harvested species may increase potentially impacting on EUROPEAN SITES.

OP Measure	OP Intervention/Measure	OP Target	Potential Outcome Relevant to European Sites
10. Socio-economic Sustainability Measure (Aquaculture)	• To support the ongoing local environmental amelioration projects and local and nationally based shellfish carrying capacity work programmes; • The creation of an improved depuration and relaying infrastructure for the purification of live farmed bivalve molluscs • To promote transnational cooperation between the fisheries/aquaculture communities in Ireland and Northern Ireland with a view to mitigating the effects of the historic conflict	• To create the necessary local structures to integrate, by way of an overarching communications mechanism, a minimum of three CLAMS groups with their mirror local inshore fishing groups. • To create Carrying Capacity Models for a minimum of five shellfish aquaculture bays • To create a minimum of three strategically located depuration/relaying facilities to address the infrastructure deficits currently constraining the expansion of the farmed mollusc sector in a manner consistent with the protection of consumer health . • To promote transnational cooperation between the fisheries/aquaculture communities in Ireland and Northern Ireland with a view to mitigating the effects of the historic conflict.	• New depuration/relaying facilities may facilitate greater expansion of aquaculture into previously un-exploited areas, potentially impacting on European Sites. • Carrying capacity models may result in more sustainable aquaculture development.
11. Marine Environment Protection Measure(Fisheries)	• Increase awareness and response to environmental policies. • Promote local area management strategies and the Coastal Zone Management approach. • Promote the introduction of Environmental Management SystEuropean Sites. • Develop management strategies that specifically aim to reduce discarding in fisheries. • Promote the development and uptake of environmentally friendly and fuel-efficient fishing gear.	• That a total of €38 million is used by industry and State between 2007 and 2013 in support of the five schemes under this Measure; • That the scheme components achieve a subscription rate, which ensures the proportional allocation of grant-aid over the period of the NDP; • That the value of output from the fisheries sector is increased through recognised environmental provenance and accreditation of seafood products and production methods; • That public perception of the fisheries sector as an environmentally responsible industry is achieved.	• There may be an uptake in environmentally friendly fishing gear which leads to fishing methods less harmful to marine habitats. • There may be a reduction in discard fishing

OP Measure	OP Intervention/Measure	OP Target	Potential Outcome Relevant to European Sites
12. Marine Environment Protection and QA Measure	• Successfully promote, from a developmental standpoint, that properly practiced aquaculture is an environmentally sustainable activity. • Continue to support and develop, the existing CLAMS groups and bring new groups into operation until all of the economically significant production areas are included. • Promote the widespread adoption of the ECOPACT EUROPEAN SITES by the members of the industry. • Develop and expand the existing suite of accredited quality assurance schemes to cover the full range of economically significant species. • Create and disseminate accredited 'eco-friendly' and 'organic' standards for the key species to facilitate the niche marketing of Irish aquaculture output. • Support the development and implementation of fish health codes of practice of the highest international standards. • transfer technologies to improve, modernise, promote efficiency and safety of aquaculture operations with a view to engendering best practice and improve efficiency and competitiveness while also reducing environmental impact in the sector. • create a cadre of regionally based aquaculture specialists who will provide an extension service at local level to assist members of the trade in the following areas: • In accessing the suite of BIM services and schemes • To promote and encourage the highest standards of production efficiency, farm husbandry and product quality • To co-ordinate and develop local producer groups and managements schemes i.e the CLAMS process and the Ecopact Initiative.	• That 75 percent of the capacity of the Irish aquaculture industry is farmed in conformity with the ECOPACT EUROPEAN SITES. • That EN45011 accredited quality schemes are created providing assurance in the 'eco-friendly' and 'organic' sectors for the main volume aquaculture species. • That 75 percent of the output from the Irish aquaculture industry is quality assured to an EN45011 standard scheme by 2013. • To import, test and establish at least three new key aquaculture techniques and technologies into the sector. • The existing eleven CLAMS groups to be maintained and a further four CLAMS groups to be established. to achieve full coverage around the coastline.	• Uptake of the ECOPACT may lead to more environmentally friendly aquaculture methods. • No negative impacts upon European Sites anticipated. • Increased awareness of European sites among aquaculture operators with possible positive contribution to the management of European Sites e.g. Bird Surveys, Otter counts etc.

OP Measure	OP Intervention/Measure	OP Target	Potential Outcome Relevant to European Sites
13. Seafood Industry Training Measure	• Improving Professional Skills & Safety Training • Aquaculture Production lifelong learning • Measures of common interest – upgrade professional skills	• Provide 12,000 training places for the period 2007 – 2013 • Total training hours are projected at 700,000	• No likely significant impact predicted

Table 2 Screening the Significance of National Seafood Plan Outcomes

- Significance is judgement made up of the nature of the potential impact arising from the National Seafood Plan outcomes on European Sites *positive, neutral* or *negative* and the magnitude of that impact assessed on a scale of *negligible, minor*, *moderate* or *major*.

	Outcome	Receptor	Magnitude	Potential for Significant Impact on European Sites	Potential for in combination effects
7. Fleet restructuring measure	Less discard fishing reducing overall fishing pressure on the marine environment.	Benthic biota and habitats	Negligible positive impact (1)	No	Yes positive
	Reduction in commercial stock mortality.	Commercial stock	Negligible positive impact	No	Yes positive
	Reduction in non target species mortality including cetacean and bird by catch.	Marine species and SPA species within or adjacent designated sites	Minor positive	No	Yes positive
8. Aquaculture Industry Development Measure	Increased area of inshore marine environment under aquaculture.	Benthic communities Wild fish and shellfish populations	Moderate negative (2)	Yes	Yes
	Local changes in nutrient inputs and aquaculture derived pollutants.	Marine communities and dependant predators (birds, seals etc)	Moderate negative (3)	Yes	Yes
	Risk of exceeding environmental carrying capacity at existing sites.	Marine communities and dependant predators (birds, seals etc)	Moderate negative (4)	Yes	Yes
	Local changes to sedimentation and plankton populations resulting from shellfish culture.	Sessile benthic communities.	Moderate negative (5)	Yes	Yes

(1) Judged as negligible as much of the areas fished by the >18M fleet is outside the European marine sites

(2) Judged as potentially of moderate impact within a sensitive European Marine Site. Impacts have the potential to be significant where sensitive features exist, for example Maerl beds are known to be sensitive to the eutrophication and smothering effects of fish farm effluent (SNH 2006) Report 213, Investigation into the impact of marine fish farms deposition on Maerl beds. Available at www.snh.org.uk

(3) Judged as moderate with respect to potentially sensitive European Marine Site

(4) Judged as moderate with respect to potentially sensitive European Marine Site

(5) Intensive shellfish aquaculture such as mussel ropes in sheltered, enclosed bays can result in a locally increased smothering and potentially a loss of the 'natural' benthic community. Intensive shellfish aquaculture is known to result in plankton depletion

	Outcome	Receptor	Magnitude	Potential for Significant Impact on European Sites	Potential for in combination effects
	Increased risk of release of alien species associated with the culture of new species.	Benthic sessile species which may be sensitive to invasive species.	Moderate negative (1)	Yes	Yes
9. Social and Economic development Measure	Exploitation of previously untargeted species	Wild fin fish, shellfish and algal populations	Moderate negative	Yes	Yes
10. Socio-economic Sustainability Measure	New depuration/relaying facilities may facilitate greater expansion of aquaculture into previously un-exploited areas, potentially impacting on EUROPEAN SITES resulting in:				
	Local changes in nutrient inputs and aquaculture derived pollutants.	Marine communities and dependant predators (birds, seals etc)	Moderate negative (2)	Yes	Yes
	Local changes to sedimentation and plankton populations resulting from shellfish culture.	Sessile benthic communities.	Moderate negative (3)	Yes	Yes
	Carrying capacity models may result in more sustainable aquaculture development.	Marine communities and dependant predators (birds, seals etc)	Moderate positive	Yes	Yes
	There may be an uptake in environmentally friendly fishing gear which leads to fishing methods less harmful to marine habitats.	Sessile benthic communities.	Negligible positive	No	Yes

(1) Whilst there is potential for a moderate impact resulting from new species in practise quarantine and existing licensing processes should be able to manage this risk to a non significant level.

(2) Judged as moderate with respect to potentially sensitive European Marine Site

(3) Intensive shellfish aquaculture such as mussel ropes in sheltered, enclosed bays can result in a locally increased smothering and potentially a loss of the 'natural' benthic community. Intensive shellfish aquaculture is known to result in plankton depletion

11. Marine Environment Protection Measure(Fisheries)	There may be a reduction in discard fishing	Wild fish and commercial stock populations	Negligible positive	No	Yes
	The details of the content and direction of the local EUROPEAN SITES are undefined but will be driven by principles of greater sustainability and reducing impact on the environment.	Marine communities and dependant predators (birds, seals etc).	Negligible positive (1)	No	Yes
12. Marine Environment Protection and QA Measure	Awareness raising may assist in encouraging more environmentally conscious and informed consumer decisions.	Commercial species and those species vulnerable to being by caught	Negligible positive	No	Yes

(1) Likely to be assessed at a local level once more detail of species or site specific EMS measures are available

Table 3 SAC Summary Table

Where no potential for a significant impact on a EUROPEAN SITE is identified (shaded grey above) outcome is not considered further in *Table 5* below. The data used in these tables was obtained from BIM in 2008 and reflects their current information on the status of fisheries and aquaculture activities within the European Sites listed.

Primary European Interest Feature	**Full Table**
Marine Habitats	
Estuaries	See Table 3. 1
Coastal Lagoons	See Table 3. 2
Large shallow inlets and bays	See Table 3. 3
Mudflats and sandflats not covered by seawater at low tide	See Table 3. 4
Reefs and Biogenic Reefs	See Table 3. 5
Sandbanks which are slightly covered by sea water all the time	See Table 3. 6
Submerged or partly submerged sea caves	See Table 3. 7
Freshwater Habitats	
Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*)	See Table 3. 8
Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	See Table 3. 9
Natural euthrophic lakes with Magnopotamion or Hydrocharition-type vegetation	See Table 3. 10
Natural dystrophic lakes and ponds	See Table 3. 11
Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the Isoëto-Nanojuncetea	See Table 3. 12
Species Interest Features	
Halichoerus grypus (grey seal)	See Table 3. 13
Phoca vitulina (harbour seal)	See Table 3. 14
Lutra lutra (otter)	See Table 3. 15
Tursiops truncates (bottlenose dolphin)	See Table 3. 16

Primary European Interest Feature	Full Table
Phocoena phocoena (harbour porpoise)	See Table 3. 17
Freshwater / Transitional Species	
Margaritifera margaritifera (freshwater pearl mussel)	See Table 3. 18
Margaritifera durrovensis (Irish pearl mussel)	See Table 3. 19
Lampetra fluviatilis (river lamprey)	See Table 3. 20
Lampetra planeri (brooke lamprey)	See Table 3. 21
Petromyzon marinus (sea lamprey)	See Table 3. 22
Alosa alosa (Allis shad)	See Table 3. 23
Alosa fallax (Twaite shad)	See Table 3. 24
Austropotamobius pallipes (white clawed crayfish)	See Table 3. 25
Salmo salar (Atlantic salmon)	See Table 3. 26

Table 3.1 Estuary Habitat Table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Ballymacoda (Clonpriest and Pillmore)							X	X		X				
West of Ardara/Maas Road														
Rogerstown Estuary														X
Ballinskelligs Bay and Inny Estuary							X	X	X	X	X			
Castlemaine Harbour	X						X	X	X					
Dundalk Bay							X	X	X	X				
Killala Bay/Moy Estuary		X		X		Inland - ornamentals								
Ballysadare Bay							X	X		X	X			
Cummeen Strand/ Drumcliff Bay (Sligo Bay)							X	X		X	X			
Ballyteige Burrow			X											
Bannow Bay									X	X				
Slaney River Valley														
Great Island Channel						X							X	
Ballyness Bay						X								
Courtmacsherry Estuary														X
Boyne Coast and Estuary									X	X				
Tralee Bay and Magheree Peninsula, West to Cloghane							X	X	X	X	X	X		
River Barrow and River Nore							X	X	X	X	X			
Lower River Shannon														
Blackwater River (Cork/Waterford)														
Lough Swilly									X					

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	Rope mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Habitat status:	The range and area of estuaries within Ireland is considered to be good, however the condition is unknown and the future prospects are considered to be inadequate against the objectives of the Habitats Directive.													

Table 3.2 Coastal Lagoons Habitat Table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	Rope mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Blackwater River (Cork/Waterford)														
Lower River Suir														
River Barrow and River Nore	X						X	X	X	X	X			
Slaney River Valley	X													
Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment														
Lower River Suir														
River Barrow and River Nore	X						X	X	X	X	X			
Slaney River Valley	X													
Blackwater River (Cork/Waterford)														
Glenade Lough														
Kilroosky Lough Cluster														
Lough Bane and Lough Glass														
Lough Corrib														
Lough Gill														
Lough Hoe Bog														
Lough Lene														
Lough Nageage														
Lower River Suir														
River Barrow and River Nore	X						X	X	X	X	X			
River Moy														
White Lough, Ben Loughs and Lough Doo														

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	Rope mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Ballyteige Burrow														
Carrowmore Point to Spanish Point and Islands							X	X						
Clew Bay Complex		X	X	X		Scallop, abalone & lobster	X	X	X	X	X			
Connemara Bog Complex														
Cross Lough (Killadoon)														
Drongawn Lough														
Dunbeacon Shingle	X		X			Urchins & clams								
Durnesh Lough		X	X	X										
Farranamanagh Lough	X		X			Urchins & clams								
Galway Bay Complex	X	X	X			Clam & urchin	X	X	X	X				
Gweedore Bay and Islands	X		X			Clam	X	X	X	X	X			
Inishbofin and Inishshark							X	X	X	X				
Inisheer Island							X	X	X	X	X			
Inishmore Island							X	X	X	X	X			
Kilkeran Lake and Castlefreke Dunes														
Kilkieran Bay and Islands				X		Aspirogopsis	X	X	X	X				
Lady's Island Lake														
Lough Cahasy, Lough Baun and Roonah Lough														
Lough Swilly	X	X	X	X					X					
Lower River Shannon	X		X			Scallop & clams								
Mweelrea/Sheeffry/Erriff Complex							X	X	X	X	X			
Reen Point Shingle	X		X			Urchins & clams								

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Rutland Island and Sound		X	X			Clam	X	X						
Slyne Head Peninsula			X	X		Clam & lobster	X	X						
Tacumshin Lake														
Termon Strand														
Tory Island Coast							X	X	X	X	X			
Tralee Bay and Magheree Peninsula, West to Cloghane						Scallop	X	X	X	X	X			
Habitat Status:	**Coastal lagoons occupy a good overall range within Ireland, however they occupy an inadequate area and the condition of many is bad and the future prospects are also considered to be bad against the objectives of the Habitats Directive.**													

Table 3.3 Large Shallow Inlets and Bays Habitats Table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	Rope mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Achill Head						Urchins	X	X		X	X			
Broadhaven Bay							X	X	X	X	X		X	X
Bunduff Lough and Machair/Trawalua/Mullaghmore							X	X		X	X			
Clew Bay Complex		X	X	X		Scallop, abalone & lobster	X	X	X	X	X	X	X	X
Galway Bay Complex	X	X	X			Clam & urchin	X	X	X	X				
Hook Head	X		X			Clams	X	X	X	X	X			
Kenmare River	X	X	X	X	X	Scallop & clams	X	X	X	X	X			
Kilkee Reefs							X	X						
Kilkieran Bay and Islands				X		Aspirogopsis	X	X	X	X				
Kingstown Bay		X					X	X	X					
Lough Hyne Nature Reserve and Environs														
Lower River Shannon	X		X			Scallop & clams								
Mullet / Blacksod Bay Complex		X	X			Clam & abalone	X	X	X				X	X
Mulroy Bay		X	X	X					X					
Roaringwater Bay and Islands	X	X	X			Scallop & Palmaria/Alaria	X	X		X		X		
Rutland Island and Sound		X	X			Clam	X	X						
Saltee Islands							X		X	X				
Slyne Head Peninsula			X	X		Clam & lobster	X	X	X	X				
St. John's Point		X	X	X			X	X	X	X	X			

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Tralee Bay and Magheree Peninsula, West to Cloghane						Scallop	X	X	X	X	X	X		
Valencia Harbour/Portmagee Channel			X			Scallop & clam	X	X	X	X	X			
West of Ardara/Maas Road			X			Clam								
Habitat Status:	**Large inlets and bays occupy a good overall range and area within Ireland, however condition of many is unknown and the future prospects are considered rated as inadequate against the objectives of the Habitats Directive.**													

Table 3.4 Mudflats and sand flats not covered by seawater at low tide Habitats Table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	Rope mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Achill Head						Urchins	X	X	X	X	X			
Ballinskelligs Bay and Inny Estuary							X	X	X	X	X			
Ballymacoda (Clonpriest and Pillmore)			X				X	X		X				
Ballyness Bay			X											
Ballysadare Bay	X					X	X	X		X				
Ballyteige Burrow														
Bannow Bay	X		X			Clams			Historic	Historic				
Barley Cove to Ballyrisode Point	X	X	X			Scallop & Palmaria/Alaria								
Blackwater River (Cork/Waterford)														
Boyne Coast and Estuary									Y	Y				
Broadhaven Bay							X	X	X	X	X		X	X
Bunduff Lough and Machair/Trawalua/Mullaghmore							X	X		X	X			
Carlingford Shore	X		X				X	X	X	X				
Carnsore Point										X				
Castlemaine Harbour	X	X	X	X	X	Scallop & clam	X	X	X					
Clonakilty Bay														
Courtmacsherry Estuary														X
Cummeen Strand/ Drumcliff Bay (Sligo Bay)			X			X	X	X		X	X			
Donegal Bay (Murvagh)		X	X	X										
Dundalk Bay		X				Cockles	X	X	X	X				
Galway Bay Complex	X	X	X			Clam & urchin	X	X	X	X				
Great Island Channel			X			X							X	X

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	Rope mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Kilkieran Bay and Islands				X		Aspirogopsis	X	X	X	X				
Killala Bay/Moy Estuary			X			Clams								
Lower River Shannon	X		X			Scallop & clams								
Malahide Estuary									X	X		X		
Mullet / Blacksod Bay Complex		X	X			Clam & abalone	X	X	X				X	X
North Dublin Bay							X	X	X	X	X	X		
North Inishowen Coast			X			Clam	X	X	X	X	X			X
Raven Point Nature Reserve	X						X							
River Barrow and River Nore	X						X	X	X	X	X			
Rogerstown Estuary														X
Saltee Islands							X		X	X				
Sheephaven	X		X			X	X	X	X	X	X			
Slaney River Valley	X													
South Dublin Bay														
Streedagh Point Dunes														
Tralee Bay and Magheree Peninsula, West to Cloghane						Scallop	X	X	X	X	X	X		
Tramore Dunes and Backstrand							X							
Tranarossan and Melmore Lough														
Valencia Harbour/Portmagee Channel			X			Scallop & clam	X	X	X	X	X			
West of Ardara/Maas Road			X			Clam								
Habitat Status:	**Mudflats and sandflats not covered by seawater at low tide occupy a good overall range and area within Ireland, however many are in inadequate condition and the future prospects are considered to be inadequate against the objectives of the Habitats Directive.**													

Table 3.5 Reefs and Biogenic Reefs Habitats Table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Achill Head						Urchins	X	X		X	X			
Black Head - Poulsallagh Complex							X							
Blasket Islands							X	X	X	X	X			
Broadhaven Bay							X	X	X	X	X		X	X
Carnsore Point							X			Historic				
Carrowmore Dunes														
Carrowmore Point to Spanish Point and Islands							X	X						
Duvillaun Islands							X	X						
Galway Bay Complex	X	X	X			Clam & urchin	X	X	X	X				
Gweedore Bay and Islands	X		X			Clam	X	X	X	X	X			
Hook Head	X		X			Clams	X	X	X	X	X			
Inisheer Island							X	X	X	X	X			
Inishmaan Island							X	X	X	X	X			
Inishmore Island							X	X	X	X	X			
Kenmare River	X	X	X	X	X	Scallop & clams	X	X	X	X	X			
Kerry Head Shoal							X	X		X	X			
Kilkee Reefs							X	X						
Kilkieran Bay and Islands				X		Aspirogopsis	X	X	X	X				
Lady's Island Lake														
Lough Hyne Nature Reserve and Environs														
Lower River Shannon	X		X			Scallop & clams								
Magharee Islands							X	X	X	X	X			
Mullet / Blacksod Bay Complex		X	X			Clam & abalone	X	X	X					
Mulroy Bay		X	X	X										

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	Rope mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Rathlin O'Birne Island							X	X	X	X	X			
Roaringwater Bay and Islands	X	X	X			Scallop & Palmaria/Alaria	X	X		X		X		
Rutland Island and Sound		X	X			Clam	X	X						
Saltee Islands							X		X	X				
Slieve League		X	X	X										
Slyne Head Islands			X	X		Clam & lobster	X	X	X	X				
Slyne Head Peninsula			X	X		Clam & lobster	X	X						
St. John's Point		X	X	X			X	X	X	X	X			
Tory Island Coast							X	X	X	X	X			
Tralee Bay and Magheree Peninsula, West to Cloghane						Scallop	X	X	X	X	X	X		
Valencia Harbour/ Portmagee Channel			X			Scallop & clam	X	X	X	X	X			
Wicklow Reef							X		X	X				
Belgica Mound Provinve								X		X	X			
Hovland Mound Province								X		X	X			
South West Porcupine Bank								X		X	X			
North West Porcupine Bank								X		X	X			
Habitat Status:	**Reefs have a good range within Ireland however their full area is unknown, and their condition and future prospects are considered inadequate against the objectives of the habitats directive.**													

Table 3.6 Sandbanks which are slightly covered by sea water all the time Habitats Table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Long Bank							X			X				
Lower River Shannon	X		X			Scallop & clams								
Habitat Status:	**Sandbanks which are slightly covered by sea water all the time have a good range and total area and are considered to be in good condition. The future prospects are however considered to be inadequate against the objectives of the habitats directive.**													

Table 3.7 Submerged or partly submerged sea caves Habitats Table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Black Head - Poulsallagh Complex							X							
Blasket Islands							X	X	X	X	X			
Broadhaven Bay							X	X	X	X	X			
Inishmore Island							X	X	X	X	X			
Kenmare River	X	X	X	X	X	Scallop & clams	X	X	X	X	X			
Lough Hyne Nature Reserve and Environs														
Roaringwater Bay and Islands	X	X	X			Scallop & Palmaria/Alaria	X	X		X				
Saltee Islands							X		X	X				
St. John's Point		X	X	X			X	X	X	X	X			
Habitat Status:	**Submerged or partly submerged sea caves are considered to have a good range in Ireland, however their total area is unknown. Their condition and future prospects are however considered to be good.**													

Freshwater Habitats

Table 3.8 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) Habitats Table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	Rope mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Gannivegil Bog														
Lough Akibbon and Gartan Lough														
Lough Eske and Ardnamona Wood														
Lough Nillan Bog (Carrickatlieve)														
Sessiagh Lough														
West of Ardara/Maas Road														
Lough Corrib				X		Inland – Arctic Char								
Tully Mountain														
Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment														
Lough Yganavan and Lough Nambrackdarrig														
Corraun Plateau														
Owenduff/Nephin Complex														
Lough Hoe Bog														
Screen Hills														
Gweedore Bay and Islands							X	X	X	X	X			
Kindrum Lough														
Muckish Mountain														
Aughrusbeg Machair and Lake														
Rusheenduff Lough														

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Cloonee and Inchiquin Loughs, Uragh Wood														
Knockalongy and Knockachree Cliffs														
Lough Carra/Mask Complex														
Glanmore Bog														
Mweelrea/Sheeffry/Erriff Complex														
Croaghaun/Slievemore														
Ballyhoorisky Point to Fanad Head							X	X						
Ox Mountains Bogs														
Maumturk Mountains														
The Twelve Bens/Garraun Complex				X		Inland – Smolts								
Connemara Bog Complex				X		Inland – Hatchery								
Cloghernagore Bog and Glenveagh National Park				X		Inland – Hatchery, Smolts								
Slyne Head Peninsula							X	X						
Barnahallia Lough														
ugh Nageeron														
Tully Lough														
Leannan River														
Lough Dahybaun														
River Finn				X		Inland – Smolt								
Habitat Status:	**Although the range and area within Ireland of these lowland oligotrophic lakes is good, the condition of the sites and future prospects have been recorded as being bad.**													

Table 3.9 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. Habitats Table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Tranarossan and Melmore Lough														
Lough Corrib				X		Inland – Arctic Char								
Lough Rea														
Fin Lough (Offaly)														
Errit Lough														
Templehouse and Cloonacleigha Loughs														
Lough Ennell														
Lough Owel														
Omey Island Machair							X	X	X					
Ross Lake and Woods														
Urlaur Lakes														
Lough Arrow														
Lough Carra/Mask Complex														
Kilroosky Lough Cluster														
White Lough, Ben Loughs and Lough Doo														
East Burren Complex														
Ballyhoorisky Point to Fanad Head														
Slyne Head Peninsula							X	X						
Lough Bane and Lough Glass														
Lough Lene														
Habitat Status:	**Although the range and area within Ireland of hard water lakes is good, the condition of the sites and future prospects have been recorded as being bad.**													

Table 3.10 Natural euthrophic lakes with Magnopotamion or Hydrocharition-type vegetation Habitats Table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Lough Oughter and Associated Loughs														
Ballyallia Lake														
Dromore Woods and Loughs														
Coole-Garryland Complex														
Red Bog, Kildare														
Lough Ree						Inland - Perch								
Mullet / Blacksod Bay Complex							X	X	X				X	X
Lough Forbes Complex														
Cloonakillina Lough														
Glenade Lough														
Lough Gill														
Habitat Status:	**The range, area and condition of naturally eutrophic lakes in Ireland is unknown, and the future prospects are thought to be inadequate against the objectives of the Habitats Directive.**													

Table 3.11 Natural dystrophic lakes and ponds Habitats Table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	Rope mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Caha Mountains														
Glenamoy Bog Complex														
Owenduff/Nephin Complex														
Cuilcagh-Anierin Uplands														
Bellacorick Bog Complex														
Mweelrea/Sheeffry/Erriff Complex														
Ox Mountains Bogs														
Boleybrack Mountain														
Connemara Bog Complex				X		Inland - Hatchery								
Wicklow Mountains														
Habitat Status:	**The range of naturally dystrophic lakes in Ireland is thought to be good, although the area is un-known. The condition and future prospects are thought to be bad when measured against the objectives of the Habitats Directive.**													

Table 3.12 Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea Habitats Table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	Rope mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Caha Mountains														
Comeragh Mountains														
Croaghaun/Slievemore														
Cuilcagh-Anierin Uplands														
Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment														
Lough Melvin														
Mount Brandon														
Mweelrea/ Sheeffry/Erriff Complex														
Owenduff/ Nephin Complex														
Wicklow Mountains														
Habitat Status:	**Although the range and area within Ireland of these upland oligotrophic lakes is good, the condition of the sites and future prospects have been recorded as being bad.**													

Species Interest Features

Table 3.13 Halichoerus grypus (grey seal) species table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Blasket Islands							X	X	X	X	X			
Duvillaun Islands							X	X						
Horn Head and Rinclevan							X							
Inishbofin and Inishshark							X	X	X	X				
Inishkea Islands							X	X	X					
Lambay Island							X	X	X					
Roaringwater Bay and Islands	X	X	X			Scallop & Palmaria/Alaria	X	X		X		X		
Saltee Islands							X		X	X				
Slieve Tooey/ Tormore Island/Loughros Beg Bay							X	X	X	X	X			
Slyne Head Islands			X	X		Clam & lobster	X	X	X	X				
Habitat Status:	**Although the full range of the grey seal is unknown its population, the available habitat and its future prospects are considered to be good.**													

Table 3.14 Phoca vitulina (harbour seal) species table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Blackwater River (Cork/Waterford)														
Ballysadare Bay	X					X	X	X		X	X			
Clew Bay Complex		X	X	X		Scallop, abalone & lobster	X	X	X	X	X	X	X	X
Cummeen Strand/Drumcliff Bay (Sligo Bay)			X			X	X	X		X	X			
Donegal Bay (Murvagh)		X	X	X										
Galway Bay Complex	X	X	X			Clam & urchin	X	X	X	X				
Glengarriff Harbour and Woodland	X	X		X	X	Urchin, Scallop & Palmaria/Alaria	X							
West of Ardara/Maas Road			X			Clam								
Habitat Status:	**Although the full range of the harbour seal is unknown its population, the available habitat and its future prospects are considered to be good.**													

Table 3.15 Lutra lutra (European otter) species table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	Rope mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Ben Bulben, Gleniff and Glenade Complex														
Blackwater River (Cork/Waterford)														
Blackwater River (Kerry)														
Castlemaine Harbour							X	X	X					
Clew Bay Complex		X	X	X		Scallop, abalone & lobster	X	X	X	X	X	X	X	X
Cloghernagore Bog and Glenveagh National Park														
Connemara Bog Complex														
Dromore Woods and Loughs														
East Burren Complex														
Galway Bay Complex	X	X	X			Clam & urchin	X	X	X	X				
Glengarriff Harbour and Woodland	X	X		X	X	Urchin, Scallop & Palmaria/Alaria	X							
Gweedore Bay and Islands	X		X			Clam	X	X	X	X	X			
Kenmare River	X	X	X	X	X	Scallop & clams	X	X	X	X	X			
Kilkieran Bay and Islands				X		Aspirogopsis	X	X	X	X				
Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment														

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	Rope mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Lough Carra/Mask Complex														
Lough Corrib														
Lough Ennell														
Lough Gill														
Lough Melvin														
Lough Oughter and Associated Loughs														
Lough Ree														
Lough Swilly	X	X	X	X										
Lower River Shannon	X		X			Scallop & clams								
Lower River Suir														
Moyree River System														
Mullet / Blacksod Bay Complex		X	X			Clam & abalone	X	X	X				X	X
Mulroy Bay		X	X	X					X					
Mweelrea/Sheeffry/Erriff Complex							X	X	X	X	X			
North Inishowen Coast			X			Clam	X	X	X	X	X	X		X
Owenduff/Nephin Complex														
River Barrow and River Nore	X						X	X	X	X	X			
River Boyne and River Blackwater														
River Finn														
River Moy														
River Shannon Callows														
Roaringwater Bay and Islands	X	X	X			Scallop & Palmaria/Alaria	X	X		X		X		
Ross Lake and Woods														

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Slaney River Valley	X													
Slieve Tooey/Tormore Island/Loughros Beg Bay														
The Gearagh														
The Twelve Bens/Garraun Complex														
Tralee Bay and Magheree Peninsula, West to Cloghane						Scallop	X	X	X	X		X		
Unshin River														
West of Ardara/Maas Road			X			Clam								
Wicklow Mountains														
Habitat Status:	**Otter is considered to have a good range, suitable habitat and future prospects although the population is considered to be inadequate against the objectives of the Habitats Directive.**													

Table 3.16 Tursiops truncates (bottlenose dolphin) species table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Lower River Shannon	X		X			Scallop & clams								
Habitat Status:	**The range, available suitable habitat and future prospects of the bottlenose dolphin are considered to be good however the population is unknown.**													

Table 3.17 Phocoena phocoena (harbour porpoise) species table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Blasket Islands							X	X	X	X	X			
Roaringwater Bay and Islands	X	X	X			Scallop & Palmaria/Alaria	X	X		X		X		
Habitat Status:	**The harbour porpoise within Ireland is considered to have a good range, population, suitable habitat and future prospects**													

Freshwater/Transitional Species

Table 3.18 Margaritifera margaritifera (freshwater pearl mussel) species table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	Rope mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Bandon River														
Blackwater River (Cork/Waterford)														
Blackwater River (Kerry)														
Cloghernagore Bog and Glenveagh National Park				X		Inland - smolts								
Fawnboy Bog/Lough Nacung														
Glanmore Bog														
Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment														
Leannan River														
Lough Corrib				X		Arctic char								
Lough Eske and Ardnamona Wood														
Lower River Shannon	X		X			Scallop & clams								
Lower River Suir						Inland - trout								
Mount Brandon														
Mweelrea/Sheeffry/Erriff Complex							X	X	X	X	X			
Newport River														
River Barrow and River Nore	X			X		Inland – trout	X	X	X	X	X			
Slaney River Valley	X													

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
The Twelve Bens/Garraun Complex				X		Inland - smolts								
West of Ardara/Maas Road			X			Clam								
Habitat Status:	**Against the objectives of the habitats directive the freshwater pearl mussel is considered to have bad population, range, available habitat and future prospects.**													

Table 3.19 Margaritifera durrovensis (Irish freshwater pearl mussel) species table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
River Barrow and River Nore	X			X		Inland – trout	X	X	X	X	X			
Habitat Status:	**Against the objectives of the habitats directive the Irish freshwater pearl mussel is considered to have bad population, range, available habitat and future prospects.**													

Table 3.20 Lampetra fluviatilis (river lamprey) species table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Castlemaine Harbour	X	X	X	X	X	Scallop & clam	X	X	X					
Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment														
Lough Gill														
Lower River Shannon	X		X			Scallop & clams								
Lower River Suir						Inland - trout								
River Barrow and River Nore	X			X		Inland - trout	X	X	X	X	X			
River Boyne and River Blackwater														
Slaney River Valley	X													
Blackwater River (Cork/Waterford)														
Habitat Status:	**The river lamprey in Ireland is considered to occupy a good range, have a good population, good suitable habitat and good future prospects.**													

Table 3.21 Lampetra planeri (brook lamprey) species table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Bandon River														
Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment														
Lough Corrib				X		Arctic char								
Lough Ennell														
Lough Gill														
Lower River Shannon	X		X			Scallop & clams								
Lower River Suir						Inland - trout								
River Barrow and River Nore	X					Inland - trout	X	X	X	X	X			
Slaney River Valley	X													
Blackwater River (Cork/Waterford)														
Habitat Status:	**The brook lamprey in Ireland is considered to occupy a good range, have a good population, good suitable habitat and good future prospects.**													

Table 3.22 Petromyzon marinus (sea lamprey) species table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Blackwater River (Cork/Waterford)														
Castlemaine Harbour	X	X	X	X	X	Scallop & clam	X	X	X					
Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment														
Lough Corrib														
Lough Gill														
Lower River Shannon	X		X			Scallop & clams								
Lower River Suir						Inland – trout								
River Barrow and River Nore	X			X		Inland – trout	X	X	X	X	X			
River Moy						Inland – Arctic char, perch								
Slaney River Valley	X													
Habitat Status:	**Against the objectives of the habitats directive the sea lamprey is considered to have an inadequate range, population, available suitable habitat and future prospects.**													

Table 3.23 Alosa alosa (Allis shad) species table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Blackwater River (Cork/Waterford)														
Lower River Suir						Inland - trout								
River Barrow and River Nore	X			X		Inland - trout	X	X	X	X	X			
Slaney River Valley	X													
Species Status:	**The Aliss shad is considered to occupy a good range in Ireland, however its population, the available suitable habitat and future prospects are unknown.**													

Table 3.24 Alosa fallax (Twaite shad) species table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment														
Lower River Suir						Inland - trout								
River Barrow and River Nore	X			X		Inland - trout	X	X	X	X	X			
Slaney River Valley	X													
Blackwater River (Cork/Waterford)														
Habitat Status:	**The twaite shad is considered to occupy a good range in Ireland, however is population status is considered to be bad, available habitat unknown and future prospects inadequate against the objectives of the Habitats Directive.**													

Table 3.25 Austropotamobius pallipes (white clawed crayfish) species table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
Blackwater River (Cork/Waterford)														
Glenade Lough														
Kilroosky Lough Cluster														
Lough Bane and Lough Glass														
Lough Corrib														
Lough Gill														
Lough Hoe Bog														
Lough Lene														
Lough Nageage														
Lower River Suir						Inland - trout								
River Barrow and River Nore	X			X		Inland – trout	X	X	X	X	X			
River Moy						Inland – perch, arctic char								
White Lough, Ben Loughs and Lough Doo														
Habitat Status:	**When compared against the objectives of the habitats directive the white clawed crayfish is considered to have an inadequate range, population and future prospects. However the available habitat is considered to be good.**													

Table 3.26 Salmo salar (Atlantic salmon) species table

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	Rope mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Blackwater River (Cork/Waterford)														
Blackwater River (Kerry)														
Castlemaine Harbour	X	X	X	X	X	Scallop & clam	X	X	X					
Cloghernagore Bog and Glenveagh National Park														
Connemara Bog Complex														
Glenamoy Bog Complex														
Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment														
Leannan River														
Lough Corrib														
Lough Eske and Ardnamona Wood														
Lough Gill														
Lough Melvin														
Lower River Shannon	X		X			Scallop & clams								
Lower River Suir														
Maumturk Mountains														
Mweelrea/Sheeffry/Erriff Complex							X	X	X	X	X			
Newport River														
Owenduff/Nephin Complex														
River Barrow and River Nore	X						X	X	X	X	X			
River Boyne and River Blackwater														

Site	Aquaculture activity						Fisheries					Other		
	Bottom mussels	**Rope mussels**	**Oysters**	**Salmon**	**Trout**	**Other**	**Fixed Gear - Pot**	**Fixed Gear - Net**	**Mobile Gear – Benthic**	**Mobile Gear – Demersal**	**Mobile Gear – Pelagic**	**Major Marina**	**Major Industrial site**	**Major Outfall**
River Finn														
River Moy														
Slaney River Valley	X													
The Twelve Bens/Garraun Complex														
Unshin River														
West of Ardara/Maas Road			X			Clam								
Habitat Status:	**Although the range of the atlantic salmon in Ireland is considered to be good, the population level is considerd to be bad, with the suitable habitat and future prospects inadequate.**													

Table 4 SPA Summary table

Species types supported by SPA	Key habitat Features	Secondary habitat feature	Full Table
Wader	Intertidal feeding resource - sand/mudflat	Subtidal feeding resource.	Table 4.1
Wildfowl	Intertidal feeding resource – sand/mudflat	Intertidal loafing/roosting area	Table 4.2
Diving Duck	Subtidal feeding resource	Offshore rafting/moult area	Table 4.3
Seabird	Nesting habitat	Subtidal feeding resource	Table 4.4

Table 4.1 SPA Wader Table

Site	Aquaculture Activity						Fisheries					Other		
	Bottom Mussels	Rope Mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Ballyteigue Burrow														
Bannow Bay	X		X			Clams			Historic	Historic				
The Raven	X						X			X				
Dungarvan Harbour			X				X			X				
Tramore Backstrand														
Cumeen Strand			X			X	X	X		X	X			
Drumcliff Bay			X			Clams	X	X		X	X			
Killala Bay/Moy Estuary			X			Clams	X	X		X				
Blacksod/ Broadhaven		X	X			Clams & Abalone	X	X	X				X	X
Iniskea							X	X	X					
Boyne Estuary														
Carlingford Lough	X		X				X	X	X	X	X			
Dundalk Bay			X			Clams			X	X	X			
Akeragh, Banna and Barrow Harbour Spa							X	X	X	X	X			
Tralee Bay							X	X	X	X	X			
Baldoyle														
Broadmeadow/Swords Estuary														
Bull Island includes L.T M.							X	X						
Rogerstown														
Sandymount Strand/Tolka Estuary														
Trawbreaga Bay			X			Clams								
Blackwater Estuary								X						
Ballycotton Bay							X	X		X	X			
Ballymacoda Bay			X				X	X		X				
Cork Harbour			X			X	X	X		X		X	X	X

Site	Aquaculture Activity						Fisheries					Other		
	Bottom Mussels	Rope Mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Shannon/Fergus Estuary	X		X			Scallop & Clam								
Galway Bay Inner	X	X	X			Clams & Urchins	X	X	X	X				
Ballysadare Bay Spa														
Lough Swilly	X	X	X	X										
Lough Foyle														
Lough Corrib				X		Arctic Char								

Table 4.2 SPA Wildfowl Table

Site	Aquaculture Activity						Fisheries					Other		
	Bottom Mussels	Rope Mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Castlemaine Harbour	X	X	X			Clams & Scallop	X	X	X					
Tralee Bay							X	X	X	X	X			
Baldoyle														
Bull Island Includes L.T M.							X	X						
Rogerstown														
Sandymount Strand/Tolka Estuary														
Inishduff							X	X						
Inishkeel							X	X						
Rathlin O'birne Island							X	X	X	X	X			
Roaninish Spa							X	X						
Trawbreaga Bay			X			Clams								
Cork Harbour			X			X	X	X		X				
Shannon/Fergus Estuary	X		X			Clams & Scallop								
Illaunonearaun Spa							X	X						
Ballysadare Bay Spa														
Ardboline Island and Horse Island Spa														
Skerries Islands Spa							X		X	X				
Lough Swilly	X	X	X	X										
Lough Foyle														
Lough Corrib				X		Inland								
Lough Derg (Shannon)				X										

Table 4.3 SPA Diving Ducks Table

Site	Aquaculture Activity						Fisheries					Other		
	Bottom Mussels	Rope Mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
The Raven	X						X							
Killala Bay/Moy Estuary			X			Clams	X	X		X				
Blacksod/ Broadhaven		X	X			Clams & Urchins	X	X	X				X	X
Dundalk Bay			X			Cockles			X	X	X			
Inistrahull							X	X	X	X	X			
Galway Bay Inner	X	X	X			Clams & Urchins	X	X	X	X				
Iniskea							X	X	X					
Lough Swilly	X	X	X	X										
Lough Foyle														
Lough Corrib				X		Inland								
Lough Derg (Shannon)				X										

Table 4.4 SPA Seabirds Table

Site	Aquaculture Activity						Fisheries					Other		
	Bottom Mussels	Rope Mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Kilcoole Marshes														
Wicklow Head Spa							X	X	X	X				
Inish & Sgarbheen								X						
Keeragh Islands Spa							X				X			
Ladys Island								X						
Helvick Head Coast Spa							X	X		X	X			
Inishmurray							X	X		X	X			
Blacksod/ Broadhaven		X	X			Clams & Abalone	X							
Illanmaster														
Inishglora and Inishkeeragh							X	X						
Iniskea							X	X	X					
Boyne Estuary														
Blaskets							X	X	X	X	X			
Castlemaine Harbour	X	X	X			Clams & Scallop	X	X	X					
Magharee Islands Spa							X	X	X	X	X			
Puffin Island							X	X	X	X	X			
Skelligs							X	X		X	X			
High Island							X	X						
Baldoyle														
Howth Head Coast Spa							X		X					
Ireland's Eye Spa							X		X					
Lambay Island							X		X	X				
Sandymount Strand/Tolka Estuary														
Aughris Head Spa							X	X		X	X			
Greer's Island														
Horn Head							X	X	X	X	X			
Inishbofin, Inishdooey, Inishbeg							X	X						

Site	Aquaculture Activity						Fisheries					Other		
	Bottom Mussels	Rope Mussels	Oysters	Salmon	Trout	Other	Fixed Gear - Pot	Fixed Gear - Net	Mobile Gear – Benthic	Mobile Gear – Demersal	Mobile Gear – Pelagic	Major Marina	Major Industrial site	Major Outfall
Inishduff							X	X						
Inishkeel							X	X						
Inishsirrer and Inishmeane Spa							X	X						
Inistrahull							X	X	X	X	X			
Rathlin O'birne Island							X	X	X	X	X			
Roaninish Spa							X	X						
Tory Island							X	X	X	X	X			
Tormore Island							X	X						
Cork Harbour			X			X	X	X		X		X	X	X
Old Head Of Kinsale							X							
Sovereign Islands							X	X		X				
The Bull & The Cow Rocks							X	X		X				
Galway Bay Inner	X	X	X			Clams & Urchns	X	X	X	X				
Ardboline Island and Horse Island Spa														
Slyne Head Islands Spa							X	X						
Lough Derg				X										
Lough Corrib				X		Inland								

Table 5a Scoping the Likely Significant Effect (LSI) (Article 6(3)) of OP Outcomes on European Marine Site Features

Measure	Potential Plan Outcome which Significant Impact on EUROPEAN SITES	Habitats Directive Annexe I Marine Habitats							Habitats Directive Annexe II Marine Species					Classified Relevant Birds Directive Interests			
		Estuary	Large shallow inlet and bay	Sandbanks which are slightly covered by sea water all the time	Mudflats and sandflats not covered by seawater at low tide	Coastal lagoons	Reefs	Submerged or partially submerged sea caves	Grey Seal	Common Seal	Porpoise	Bottle-nose Dolphin	Otter	Waders	Wildfowl	Diving ducks	Seabirds
8 The Aquaculture Industry Development Measure	Increased area of inshore marine environment under aquaculture.	Yes	Yes	Yes	Yes	Yes	Yes	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely
	Local changes in nutrient inputs and aquaculture derived pollutants	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely
	Risk of exceeding environmental carrying capacity at existing sites	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely
	Local changes to sedimentation and plankton populations resulting from shellfish culture	Yes	Yes	Yes	Yes	Yes	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely
	Changes in patterns of use and aquaculture related human disturbance	No	No	No	No	No	No	No	Yes	Yes	Unlikely	Unlikely	Yes	Yes	Yes	Yes	Unlikely
	Increased risk of release of alien species associated with the culture of new species	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	Unlikely	Unlikely	Unlikely	Unlikely
9. Social and Economic development Measure	Exploitation of previously untargeted species	Yes	Yes	Yes	Yes	Unlikely	Yes	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Yes	Yes	Yes	Yes
10. Socio-economic Sustainability Measure	New depuration/relaying facilities may facilitate greater expansion of aquaculture into previously un-																

	exploited areas, potentially impacting on EUROPEAN SITES resulting in:																
	Increased area of inshore marine environment under aquaculture.	Yes	Yes	Yes	Yes	Yes	Yes	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely
	Local changes in nutrient inputs and aquaculture derived pollutants.	Yes	Yes	Yes	Yes	Unlikely	Yes	Yes	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely
	Local changes to sedimentation and plankton populations resulting from shellfish culture.	Yes	Yes	Yes	Yes	Yes	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely

Table 5b Scoping the Likely Significant Effect (LSI) (Article 6(3)) of OP Outcomes on Freshwater Natura 2000 Features

Measure	Potential OP Outcome which Significant Impact on EUROPEAN SITES	Habitats Directive Annexe I Lake Habitats					Habitats Directive Annexe II Freshwater /Transitional Species								
		Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*)	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	Natural euthrophic lakes with Magnopotamion or Hydrocharition-type vegetation	Natural dystrophic lakes and ponds	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	Allis shad	Twaite shad	White clawed crayfish	River lamprey	Brook lamprey	Irish freshwater pearl mussel	Freshwater pearl mussel	Sea lamprey	Atlantic salmon
8 The Aquaculture Industry Development Measure	Local changes in nutrient inputs and aquaculture derived pollutants	Yes	Yes	No	Yes	Yes	No	No	Unlikely	Unlikely	Unlikely	Yes	Yes	Unlikely	Unlikely
	Risk of exceeding environmental carrying capacity at existing sites	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Local changes to sedimentation and plankton populations resulting from shellfish culture	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Unlikely	Unlikely
	Changes in patterns of use and aquaculture related human disturbance (may be reduced through greater automation of systEuropean Sites or increased due to increased site capacities)	No	No	No	No	No	Unlikely	Unlikely	Unlikely	Unlikely	Unlikely	No	No	Unlikely	Unlikely
	Increased risk of release of alien species associated with the culture of new species	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10. Socio-economic Sustainability Measure	New depuration/relaying facilities may facilitate greater expansion of aquaculture into previously un-exploited areas, potentially impacting on EUROPEAN SITES														

	resulting in:														
	Increased area of inshore marine environment under aquaculture.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Unlikely	Unlikely
	Local changes in nutrient inputs and aquaculture derived pollutants.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Unlikely	Unlikely
	Local changes to sedimentation and plankton populations resulting from shellfish culture.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Unlikely	Unlikely

Table 6 Summary of key mitigations

OP Measure	Outcome/ theme/ measure *	Mitigation Measure	Competent body	Post mitigation reassessment of article 6 LSI arising from implementation of OP
8 The Aquaculture Industry Development Measure	Increased area of inshore marine environment under aquaculture.	Site based specific license procedure subject to separate Article 6 appropriate assessment process	DCMNR	Unlikely (1)
	Local changes in nutrient inputs and aquaculture derived pollutants	Site based specific license procedure subject to separate Article 6 appropriate assessment process	DCMNR	Unlikely
	Risk of exceeding environmental carrying capacity at existing sites	Site based specific license procedure subject to separate Article 6 appropriate assessment process	DCMNR	Unlikely
	Local changes to sedimentation and plankton populations resulting from shellfish culture	Site based specific license procedure subject to separate Article 6 appropriate assessment process	DCMNR	Unlikely
	Changes in patterns of use and aquaculture related human disturbance (may be reduced through greater automation of systEuropean Sites or increased due to increased site capacities)	Site based specific license procedure subject to separate Article 6 appropriate assessment process	DCMNR	Unlikely
	Increased risk of release of alien species associated with the culture of new species	Site based specific license procedure subject to separate Article 6 appropriate assessment process	DCMNR	Unlikely
9. Social and Economic development Measure	Exploitation of previously untargeted species	Site based specific license procedure subject to separate Article 6 appropriate assessment process	DCMNR	Unlikely
10. Socio-economic Sustainability Measure	New depuration/relaying facilities may facilitate greater expansion of aquaculture into previously un-exploited areas, potentially impacting on EUROPEAN SITES resulting in:			
	Increased area of inshore marine environment under aquaculture.	Site based specific license procedure subject to separate Article 6 appropriate assessment process	DCMNR	Unlikely

(1) Assuming the proper application of the aquaculture licensing process; involving the undertaking of an EIA and site-specific Appropriate Assessment; and compliance with all licensing conditions (e.g. monitoring requirements, specific operational practices).

OP Measure	Outcome/ theme/ measure *	Mitigation Measure	Competent body	Post mitigation reassessment of article 6 LSI arising from implementation of OP
	Local changes in nutrient inputs and aquaculture derived pollutants.	Site based specific license procedure subject to separate Article 6 appropriate assessment process	DCMNR	Unlikely
	Local changes to sedimentation and plankton populations resulting from shellfish culture.	Site based specific license procedure subject to separate Article 6 appropriate assessment process	DCMNR	Unlikely

(*where the potential for likely significant impact is identified)

The majority of the measures outlined in the National Seafood Plan are predicted to have no outcomes relevant to the Natura 2000 network. Measures 1-6 are all focussed on the development of marketing measures which are unlikely to have any direct impact on the Natura 2000 network, and Measure 13 is aimed at improving training opportunities for those working in the seafood industry. The lack of significant impacts resulting from these measures is highlighted in *Table 1* and these measures have subsequently been scoped out of the assessment.

The major impact of Measure 7, the Fleet Restructuring Measure will be to result in a reduction in the >18m fleet. Most of the geographical areas where the positive effects of this OP intervention will be experienced are outside the European Marine Site network so the positive impacts on SACs and SPAs are limited. This intervention is not expected to result in any likely significant effects on any European Sites (see *Table 2*).

The Marine Environment Protection Measure (Fisheries) (Measure 11) may result in the uptake of more environmentally sustainable fishing methods, and in less discard fishing. Again the potential positive impacts of this measure are not expected to result in any likely significant effects on any European Marine Site, as most of the areas where the positive effects of this measure will be experienced are outside the Natura 2000 network (see *Table 2*).

The key environmental focus of Measure 12, the Marine Environment Protection and QA Measure is to encourage the uptake of BIM's Environmental Management System (EMS), ECOPACT. The uptake of the ECOPACT EMS should lead to an increase in the performance of aquaculture developments which currently affect Natura 2000 sites by encouraging greater environmental awareness and stricter practices. The current level of regulation of aquaculture activities within the Natura 2000 network is sufficiently rigorous and together with improvements brought about by adherence to the EMS will result in no significant impacts on the Natura 2000 network. On this basis, the Marine Environment Protection and QA measure is not predicted to have any significant impact on any European Site (see *Table 2*).

For the Aquaculture Industry Development Measure, a number of potential impacts have been identified, namely:

- an increased area of the inshore marine environment under aquaculture;
- local changes in nutrient inputs and aquaculture derived pollutants;
- a risk of exceeding environmental carrying capacity at existing aquaculture sites;
- local changes to sedimentation and plankton populations resulting from shellfish culture;
- changes in patterns of use and aquaculture related human disturbance; and

- an increased risk of release of alien species associated with the culture of new species.

It is however envisaged that the current primary site specific licensing route for individual installations will be sufficient to ensure that the implementation of the OP will not result in a likely significant effect on any SAC or SPA (see *Table 6*). The aquaculture licensing process involves the undertaking of an EIA (for finfish aquaculture) and, a site-specific AA where located in or adjacent to Natura 2000 sites. Assuming the findings of the EIA and AA are acceptable, a license is typically granted by DAFF with various licensing conditions, such as monitoring requirements and specific operational practices.

One of the areas for expansion highlighted in the Social and Economic Development Measures (Fisheries) (Measure 9) is the exploitation of previously untargeted species. Although it is not clear which new species could be targeted, it is possible that exploitation of previously untargeted species may lead to impacts on the qualifying interest features of SACs or SPAs.

The socio-economic sustainability measure aims to fund three strategically sited shellfish depuration/relaying facilities which may facilitate greater expansion of aquaculture into previously un-exploited areas. However, it is more likely to result in improving market options for existing product by enabling it to be sold live and fresh. Any resulting expansion has the potential to impact on the Natura 2000 network by opening up areas which were previously too far from existing facilities to be developed. The potential impacts that this could result in are largely the same as those likely to occur under the Aquaculture Industry Development Measure. It is envisaged that, like the Aquaculture Industry Development Measure, the current primary site specific licensing route for individual installations will be sufficient to ensure that the implementation of the National Seafood Plan will not result in a likely significant effect on the Natura 2000 network (see *Table 6*).

The overall assessment of the impacts of the National Seafood Plan is that it is unlikely that there will be any significant impact on the Natura 2000 network as a result of the National Seafood Plan.

However, the National Seafood Plan deals with measures at a national level and the level of detail included is not sufficient to allow scheme by scheme assessment or site by site assessments of individual SACs and SPAs to be made. This does not fully satisfy the requirements of Article 6 which requires it to be proven beyond reasonable scientific doubt that there will not be a significant impact on individual Natura 2000 sites. This level of assessment will be undertaken through site-specific AA which will accompany site specific applications (such as an aquaculture licenses) which will be undertaken when specific licences are applied for.

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ERM Ireland

Suite 508, The Capel Building
Marys Abbey, Dublin 7
T: +353 (0) 1 814 7700
F: +353 (0) 1 814 7700

NSC Campus, Loughmahon Technology Park
Mahon, Cork
T: +353 (0)21 230 9323
F: +353 (0)21 230 9362

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