Strategic Environmental Assessment

SEA Statement

National Strategic Plan for Sustainable Aquaculture Development

Ireland

December 2015

Contents

1 Introduction

This SEA Statement has been prepared as part of the Strategic Environmental Assessment (SEA) of Ireland's National Strategic Plan for Sustainable Aquaculture Development (NSPA). Having considered the findings and conclusions of the complete body of work developing and assessing the NSPA, the Minister for Agriculture Food and the Marine agreed to the final adoption of the NSPA on 23rd October 2015 together with its associated SEA Statement and Appropriate Assessment.

This document provides information on how the SEA process influenced the development of the National Strategic Plan for Sustainable Aquaculture Development. The SEA Statement has been prepared having regard to Article 8 (Decision making) of the SEA Directive (2001/42/EC) and in accordance with Schedule 2, Section 16(2) of the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations (S.I. No. 435 of 2004) as amended. The Structure of the SEA Statement is as follows:

- Summary of Key Facts
- Summary of the SEA Process Consultation
- Key Issues Raised in the Submissions
- Influence of the SEA during preparation of the NSPA
- Preferred Scenario and Reasons for Choosing the NSPA as Adopted
- Measures to Monitor Potential Significant Environmental Effects of the Implementation of the NSPA
- Addendum to the Environmental Report
- Conclusion

2 Summary of Key Facts

Title of Plan	National Strategic Plan for Sustainable Aquaculture Development
Purpose of Plan	Article 34 of the Common Fisheries Policy Regulation requires Member States to prepare multi-annual national strategic plans for aquaculture. In accordance with article 34, the European Commission published non-binding Strategic Guidelines for the Sustainable Development of EU Aquaculture in 2013, which are intended to guide the preparation of national plans. The national plans are intended to inform investment priorities for aquaculture under Member States' operational programmes under the European Maritime and Fisheries Fund, although the scope of the national plans is broader than investment needs.
Competent Authority	Department of Agriculture, Food and the Marine
Period covered	The NSPA covers the period 2014 – 2020.
Geographical coverage of Plan	The NSPA is a national plan covering aquaculture production in coastal areas for marine based facilities as well as inland areas for freshwater culture or closed recirculation facilities.
Nature/content of Plan	The primary aim of the NSPA is to sustainably grow the production of the aquaculture industry in Ireland by 45,000 tonnes across all species. It explores opportunities to grow production, key challenges for each species and how financial supports will be deployed through the EMFF Seafood Development Operational Programme to support the industry in achieving this target. It identifies the importance to aquaculture of fostering knowledge, innovation and technology transfer and focuses on the importance of environmental sustainability to the continuation and growth of the aquaculture industry whilst taking into account the importance of coordinated marine spatial planning to future planning of aquaculture and addressing the main challenges relating to the regulatory framework and procedures to deliver a streamlined system to support the sustainable development of the industry.
Date NSPA Adopted	23 October 2015
Main contact	Department of Agriculture Food and Marine National Seafood Centre Clonakility Co Cork

3 Summary of SEA process

3.1 Introduction

The NSPA has been subject to a process of Strategic Environmental Assessment (SEA) as required under the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations S.I. No 435 of 20014 as amended by S.I. No 200 of 2011. This has included the key steps described in the following sections.

3.2 Screening

Screening was carried out by Bord Iascaigh Mhara in July 2013 concluding that an SEA was required. Following the SEA Screening decision, RPS Group Ireland was appointed as the independent advisor to assist with the SEA process.

3.3 Scoping and statutory consultation

Following the screening, scoping was carried out and a scoping report was published in November 2013. The report was circulated to statutory authorities for a 6 week consultation period. An additional consultation opportunity was offered by a workshop held in Dublin on 10th December 2013 and was attended by representatives from DAFM, EPA, and DCENR (IFI). A teleconference and meeting were later held with NPWS focussing on Appropriate Assessment requirements. A meeting was also held with the Archaeological Section of DAHG. Overall the scoping process was positive. Some challenging issues were raised and this led to a general re-working of the NSPA format and content to better reflect the Irish situation and place a greater emphasis on sustainable operation and future development of the Aquaculture sector in Ireland. In addition, many of the scoping issues raised were beyond the scope of the Plan and therefore could not be addressed within the SEA.

3.4 Environmental Assessment and Environmental Report

The preparation of an Environmental Report included consideration of the following:

- Baseline data relating to the current state of aquaculture in Ireland;
- Baseline data relating to the current state of the environment in Ireland;
- A review of existing controls and management measures for the prevention of environmental impacts of aquaculture activities;
- A review of current projects and initiatives adopted by the aquaculture sector in Ireland;
- Links between the NSPA and other relevant strategies, policies, plans and programmes and environmental protection objectives;
- Key environmental issues related to aquaculture;
- Assessment of the potential significant effects;
- Habitats Directive Article 12 assessment;
- Measures envisaged for the prevention, reduction and mitigation of any significant adverse effects;

- An outline of alternatives and reasons for selecting the alternative chosen; and
- Monitoring measures to ensure adequate implementation of the NSPA.

3.5 SEA Statement

The main purpose of the SEA Statement is to provide information on the decision-making process for the Plan in order to illustrate how decisions were taken, making the process more transparent. In doing so, the SEA statement documents how the recommendations of the Environmental Report and the Appropriate Assessment, as well as the views of the statutory consultees and other submissions received during the scoping and environmental report consultation, have influenced the preparation of the final NSPA. The SEA Statement also provides information on the arrangements for monitoring and mitigation. The SEA Statement is available to the public, along with the Environmental Report, the Appropriate Assessment and the actual NSPA itself.

In accordance with Article 16 of the European Communities Environmental Assessment of Certain Plans and Programmes Regulations, (S.I. No. 435 of 2004), as amended, the Competent Authority is required to prepare a statement summarising the following: -

> a) How environmental considerations have been integrated into the plan or programmes, or modification to a plan or programme;
> b) How (i) the environmental report, prepared pursuant to article 12, (ii) submissions and observations made to the planning authority in response to a notice under article 13 and (iii) any consultations under article 14, have been taken into account during the preparation of the plan or programme;
> c) The reasons for choosing the plan or programme, in light of other reasonable alternatives dealt with, and
> d) The measures decided upon to monitor, in accordance with article 17, the significant environmental effects of implementation of the plan or programme".

3.6 Habitats Directive Article 6 (3) Assessment

In addition to the SEA, the EU Habitats Directive (92.43.EEC) requires an assessment whether the NSPA had the potential to impact significantly on a European Protected Site, i.e. Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/EEC) as codified by Directive 2009/147/EC. These European Protected Sites make up a network of ecologically important sites collectively known as the Natura 2000 network.

Screening for Appropriate Assessment was carried out in parallel to the SEA process to determine whether or not an Appropriate Assessment of the NSPA was required in accordance with Article 6 (3) of the Habitats Directive and to record reasons for the decision taken as a result of the exercise. This process involves the consideration of the plan or project and its likely effects on European Sites and their ecological sensitivities, and the interaction between these. Potential impacts that may arise from the NSPA on its own and in combination with other plans and programmes were examined in the context of a number of factors that could potentially affect the integrity of European Protected Sites. As the NSPA is a national plan covering all of Ireland, site scale assessment is not possible. In its place, an assessment of the qualifying features most commonly linked with aquaculture operations in Ireland was carried out with the focus on qualifying features, identifying the types of

habitats and species most likely to be impacted by aquaculture operations in Ireland, rather than individual European Sites.

All SACs and SPAs in Ireland were considered in the screening. Though the NSPA has no spatial component and proposed development is not species specific, it was recognised that aquaculture operations may have the potential to negatively impact on European Protected Sites, thus all designated SACs and SPAs in Ireland were considered in the screening. The NSPA was screened in and underwent full Stage 2 Appropriate Assessment.

3.7 Approval of NSPA

Following public consultation on the NSPA, the Plan was approved by the Minister for Agriculture Food and the Marine on 23 October 2015.

4.0 Consultation

4.1 Introduction

In the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations (S.I. No 435 of 2004), consultation is specifically required at the Scoping stage with the nominated Environmental Authorities and then with the wider public when the Environmental Report and NSPA are put on public display. This section describes the statutory and non-statutory consultation that has taken place over the course of the SEA process. The SEA Statement together with the NSPA, adopted by DAFM, will be made available at the end of the plan making process.

4.2 Consultation Process

Scoping was undertaken in October and November 2013 with formal statutory consultation running for six weeks from 22nd November 2013 until 10th January 2014. At this time the NSPA strictly conformed to the blueprint format for the plan published by the European Commission in Com (2013)229 (final). The objective of the scoping exercise was to identify key issues of concern that should be addressed in the environmental assessment of the NSPA so that they could be considered in appropriate detail. Scoping at this stage included a workshop with statutory consultees on 10th December 2013 and additional meetings with DAHG (NPWS) regarding Natural and Cultural Heritage and in particular the Appropriate Assessment. The scoping consultation was fundamental in shaping and guiding the NSPA which was prepared and underwent Environmental Assessment. The draft NSPA, SEA Environmental Report and Appropriate Assessment were issued to the designated environmental authorities on 8 June 2015 for statutory consultation until to 24 July 2015. The draft NSPA, SEA Environmental Report and Appropriate Assessment were then displayed for public consultation on 12th June for a period of 6 weeks with a deadline for submissions set at 24th July 2015.

A large number of stakeholders and organisations made submissions including government departments, aquaculture operators and NGOs. The full list of respondents is provided below.

List of Respondents to statutory consultation

- Department of Arts, Heritage and the Gaeltacht
- Environmental Protection Agency
- Department of Communications, Energy and Natural Resources (Geological Survey of

Ireland)

List of Respondents to public consultation

- Aquafresh Fish
- Baronscourt Estate
- Celtic Kerber Ltd
- Coastwatch
- Commissioners of Irish Lights
- Costello and Fermoyle Fishery
- Environmental Pillar
- FISSTA
- Friends of the Irish Environment
- Galway Bay Against Salmon Cages
- IFA Aquaculture
- Inland Fisheries Ireland
- Irish Registered Mussel Fishing Vessel Alliance
- Irish Seal Sanctuary
- Irish Water
- Joint Committee on Agriculture, Food and the Marine
- Oidhreacht Iorras Aintheach
- Salmon Watch Ireland
- Save Bantry Bay
- Save Linsfort Beach
- Save the Swilly
- SWAN
- Údarás na Gaeltachta
- Utterly Oysters Ltd
- Six private individuals

5.0 Key Issues Raised in the Submissions

5.1 Introduction

The following sections provide details of the issues raised in the submissions. The submissions relate to the NSPA, the SEA Environmental Report, the Appropriate Assessment and Article 12 Assessment. To respond to the submissions they have been grouped into a number of topics. For each topic, a summary of the issues raised is provided, followed by a response. Where relevant the associated NSPA policy areas are highlighted together with any changes. Where changes are made or text added to the NSPA, SEA Environmental Report, AA or Article 12 assessment, this is shown in **BLUE TEXT.** The chapter number of the relevant document is stated and where appropriate for ease of reading, the original text from the documents is also included.

The consultation responses have been grouped into the following topics and will be addressed in the order listed:

- General NSPA Comments
- SWOT Analysis
- Guiding Principles
- General Comments on NSPA Environmental Report
- General Comments on NSPA Appropriate Assessment
- General Environmental Issues
- General Policy Issues
- Stakeholder Involvement
- Licensing
- Enforcement
- Funding
- Jobs
- Growth Targets
- Marine Spatial Planning
- Invasive and non-native Species
- Organic Aquaculture
- Recirculating Aquaculture Systems
- Salmon Farming
- Sealice
- Tourism
- Fishing

General comments relating to the NSPA, Environmental Report and Appropriate Assessment are addressed first before moving on to deal with key topics which were raised in the submissions. The purpose of this approach is to deal separately with submissions relating to perceived omissions and procedural details, which are not related to the other topics considered.

5.2 General NSPA Comments

5.2.1 Issues Raised

There were a number of helpful suggestions relating to the structure and content of the NSPA in order to improve the structure and provide clarification on some of the content. A clear timescale, better referencing of policy actions to assist with monitoring and mid-term reporting, mechanisms for implementation of the plan and reiteration of the role of the NSPA as a plan focused on sustainable development.

5.2.2 Response

The format of the NSPA was established in accordance with Com 229 (2013) final. The NSPA is for the period 2014 – 2020. Com (229)2013 encourages member states to make a mid-term assessment of their plan by the end of 2017. Following scoping consultation it was somewhat expanded to better address the Irish situation.

5.3 SWOT analysis

5.3.1 Issues raised

The issues raised in relation to the SWOT analysis related to specific details of its content and suggestions for additional points to be included.

5.3.2 Response

The comments made are outside of the scope of the NSPA consultation and more proper to the EMFF Seafood Development Operational Programme, which was the subject of separate public consultation.

There are no changes to the NSPA

5.4 Guiding Principles

5.4.1 Issues raised

Mixed opinions were expressed about the inclusion of the "Guiding Principles for the Sustainable Development of Aquaculture" as part of the "Ensuring Sustainability" policy area of the NSPA.

5.4.2 Response

The Guiding Principles were recommended to the Minister by the Marine Institute. The Principles are intended to "provide a broad direction to guide the ongoing development of sustainable aquaculture in Ireland and instil confidence in all stakeholders in the commitment to appropriate development of the industry" They are an additional reference point included within the NSPA to help to ensure that Sustainable Development is at the forefront of all decision making and working towards the 2020 Vision of "An aquaculture industry that develops in harmony with nature and with the confidence of stakeholders." The inclusion of the principles is over and above the requirements of European Communication Com 229(2013) final.

The principles are recommended on the basis that:

- They are general governance principles, consistent with the requirements under various policies and legislation at both a national and EU level.
- They are intended as a framework for future development; rather than a set of criteria against which to assess individual applications/licences, either retrospectively or in the future.
- Individual licence applications/renewals will continue to be subject to rigorous assessment, taking into consideration all of the appropriate national and European legislative requirements.
- They apply equally to all farming methods and species.
- They are not intended to replace the vigorous process of site assessment and consideration of appropriate scale by potential developers, and subsequent assessment via the EIA requirements during the licensing process.

Consideration of licence applications takes into account the requirements of all of the relevant national and European legislation, including the maintenance of WFD high water quality status. Compliance with WFD water quality status is implicit in Guiding Principle 4.

Consideration could be given to the development of appropriate guidance/best-practice. For example, best practice in relation to the preparation of Environmental Impact Statements. As noted in Principle 1, responsible planning shall be considered within the wider Marine Spatial Planning context. This can be progressed further once the MSP directive is transposed into Irish law and a marine spatial planning framework is in place; allowing marine spatial plans to be developed.

In relation to Industry Best Practice, there are a number of such schemes in existence—including independently operated certification schemes—which have been adopted by the Irish aquaculture industry. Additionally, the industry, through the Federation of European Aquaculture Producers, has adopted a set of principles (*Streaming Sustainability-European Aquaculture for the Next Generation*), which focus on the protection of water resources; striking a balance between a healthy business and a healthy environment; the application of science of the highest standard; sustainability in all aspects of the aquaculture value-chain; and respect for the consumer.

The NSPA sufficiently addresses the issues raised at strategic level. The Marine Institute reviewed all submissions relating to the Guiding Principles and advised that it made no changes to its recommendations to the Minister. No changes have been made to the NSPA.

5.5 General Comments on NSPA Environmental Report

A number of stakeholders raised issues regarding the content of the SEA of the NSPA. These issues have been grouped to avoid repetitiveness of responses. Due to the large number of comments directly related to the NSPA Environmental Report these have been further broken down by topic (in italics) and a response provided for each of these

Content of SEA and stakeholder involvement

Concern was expressed as to the content of the SEA regarding the level of analysis and the level of consultation with stakeholders.

Response

As the NSPA has no spatial focus but sets out a plan for the sustainable development of aquaculture nationalwide, the assessment must focus on strategically assessing the overall potential impact as site specific concerns cannot be evaluated in this context. As part of the SEA process the NSPA went out on public display and newspaper notice was published inviting all stakeholders to participate in the consultation process.

Addendum to the NSPA Environmental Report

None added.

Missing information from Baseline Environment

It was submitted that attention be drawn to the ObSERVE project, and suggested that information contained in the current national oil and gas exploration related plan (IOSEA 5) and associated SEA especially with regards to marine mammals be reviewed.

Response

Information on the ObSERVE project and more detailed information regarding marine mammals is included in the addendum to table 15c in Appendix B of the Environmental Report.

The details in the Baseline Environment of the SEA are based on best available information at the time of preparation of the document, specifically the 2013 Article 17 assessment (NPWS), the IWDG species records and details available from the National Biodiversity Data Centre. The NSPA and supporting documents and the IOSEA 5 plan and supporting documents were being prepared at the same time, thus any information contained within the IOSEA 5 and supporting documents had not been available for inclusion in the SEA of the NSPA. This has since been reviewed. Additional information is now included in Section 7.0 in the introduction to the Baseline Environment.

Addendum to the NSPA Environmental Report

Appendix B Table 15c

Topic	*Title*	*Summary of Objectives*
Biodiversity	*ObSERVE project*	The ObSERVE aerial project, funded by DCENR in partnership with of the Department of Arts, Heritage and the Gaeltacht (DAHG). This is a three-year programme to undertake extensive aerial surveys and collect data on the distribution and abundance of cetaceans, seabirds and other marine megafauna in Irish offshore waters. Four complete surveys will be conducted in summer and winter 2015 and 2016. The project will provide information on seabird and cetacean abundance and distribution in Irish waters. Surveys will run from Donegal, down the west coast and out to the continental shelf edge, and across the Celtic sea. The first survey recorded sightings of minke whales, porpoise, common dolphins and numerous seabird species including storm petrels, gannets and shearwaters. The project is being led by University College Cork with partners Aerosotravia, IMARES, and ALNILAM. (http://www.observe-aerial.ie/)

7.0 Baseline Environment

Current research to extend the knowledge of our environment include the ObSERVE aerial project, funded by the Department of Communications, Energy and Natural Resources (DCENR) in partnership with of the Department of Arts, Heritage and the Gaeltacht (DAHG) This is a three-year programme to undertake extensive aerial surveys and collect data on the distribution and abundance of cetaceans, seabirds and other marine megafauna in Irish offshore waters. Four complete surveys will be conducted in summer and winter 2015 and 2016. The project will provide information on seabird and cetacean abundance and distribution in Irish waters. Surveys will run from Donegal, down the west coast and out to the continental shelf edge, and across the Celtic sea. The first survey recorded sightings of minke whales, porpoise, common dolphins and numerous

seabird species including storm petrels, gannets and shearwaters. The project is being led by University College Cork with partners Aerosotravia, IMARES, and ALNILAM. (http://www.observe-aerial.ie/)

To date 24 cetacean species have been recorded in Irish waters (Berrow, 2001) with some of these breeding, including Common Dolphin *(Delphinus delphis),* Harbour Porpoise *(Phocoena phocoena)* and Bottlenose Dolphin *(Tursiops truncatus)* among others. Under the Habitats Directive these two last species, Bottlenose Dolphin and Harbour Porpoise are Annex II species whose conservation requires the designation of Special Areas of Conservation (SACs).

Key factors in cetacean distribution are availability and distribution of prey, while water temperature and the North Atlantic drift also play an important role. Cetacean species that have been confirmed to breed in Irish waters include:

- Bottlenose dolphin *(Tursiops truncatus),* found in all coastal waters around Ireland with semi-resident group at the mouth of Cork harbour;
- Common dolphin *(Delphinus delphis),* present in all Irish coastal waters with greatest abundance off the south and southwest coasts;
- Harbour porpoise *(Phocoena phocoena)*, present in all Irish coastal wasters but most abundant in the Irish Sea and off the south and southwest coast of Ireland;
- Risso's dolphin *(Grampus griseus)*, present in all Irish coastal waters and can be regularly observed inshore and in bays along the southwest and southeast coasts;
- White-beaked dolphin *(Lagenorhynchus albirostris)*, offshore species rarely foud in shallow water close to the coast;
- White sided dolphin *(Lagenorhynchus acutus)*, can be seen inshore off the northwest coast in late summer and autumn, also occurs occasionally in the Irish Sea, highest abundance along the edge of the continental shelf, and also in deeper waters; and
- Pilot whale *(Globicephala melas)*, mainly found in deep water off the continental shelf.

Other species may also breed here, e.g.:

- Cuvier's beaked whale *(Ziphius cavirostris),* deep water species occurring off the Atlantic continental shelf; and
- Killer whale *(Orcinus orca),* can be observed off all Irish coasts mainly from offshore island with inshore sightings more frequent during late summer and autumn.

Species that migrate annually along the western seaboard or feed year-round in waters along the south coast and shelf slopes and are not known to breed in Irish waters include:

- Fin whale *(Balaenoptera physalus)*, can be observed inshore mainly off the south and southwest coast;
- Humpback whale *(Megaptera novaeangliae)*, can be found mainly off the south and southeast coast of Ireland;
- Minke whale (*Balaenoptera acutorostrata),* most commonly found off the south and southwest coast of Ireland ; and
- Sperm whale *(Physeter macrocephalus)*, occurs in deep water off the continental shelf.

Other species such as the blue whale *(Balaenoptera musculus)* may over-winter in waters south of Ireland. (DCENR 2015)

The following maps were taken from the Irish Offshore Strategic Environmental Assessment (IOSEA) 5, DCENR 2015 and present information on toothed whale sightings, baleen whale sightings, grey seal breeding sites, harbour seal sites and marine turtle records for Ireland and the UK.

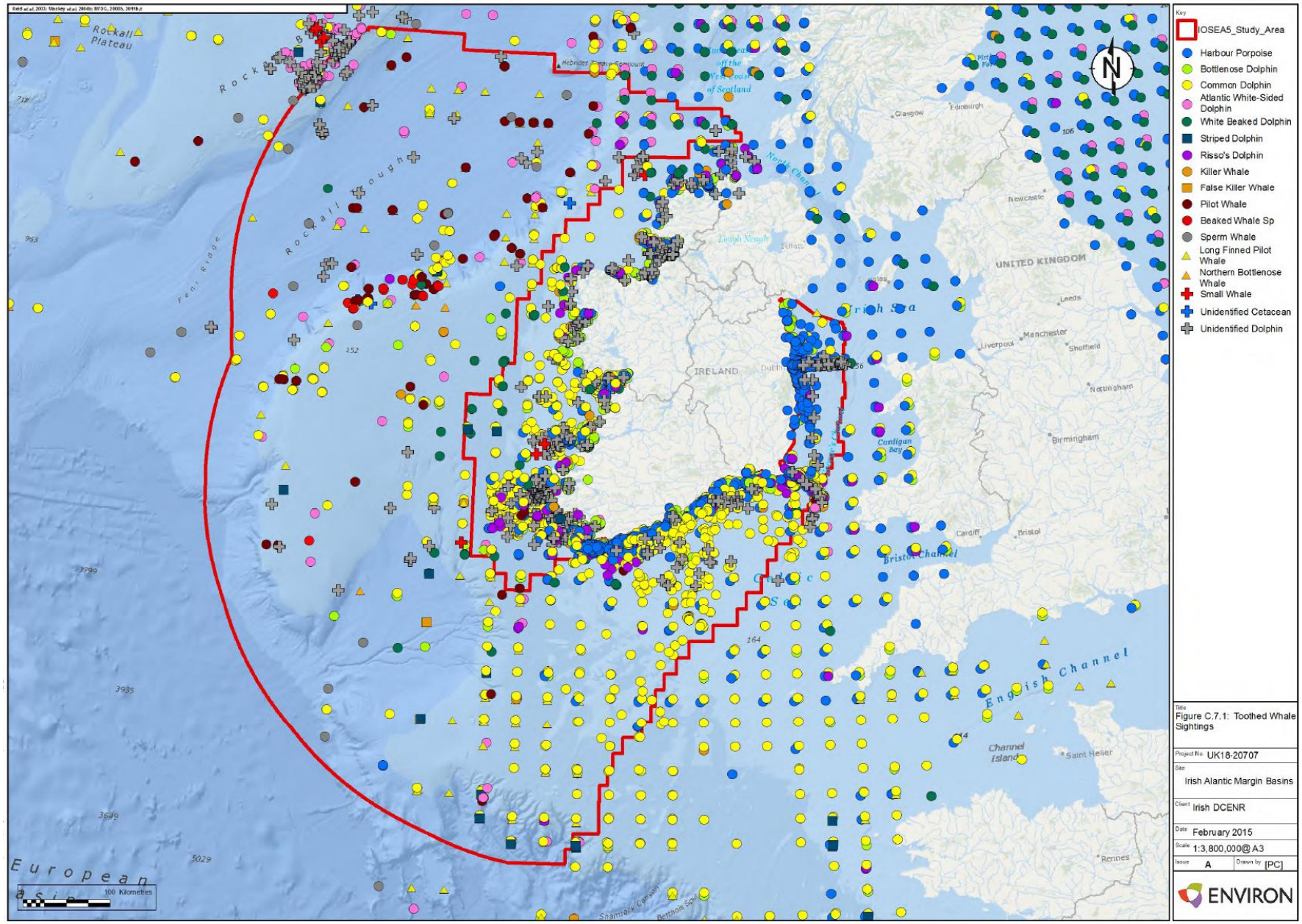


Figure 7.0a: Toothed whale sightings

Figure 7.0b: Baleen whale sightings

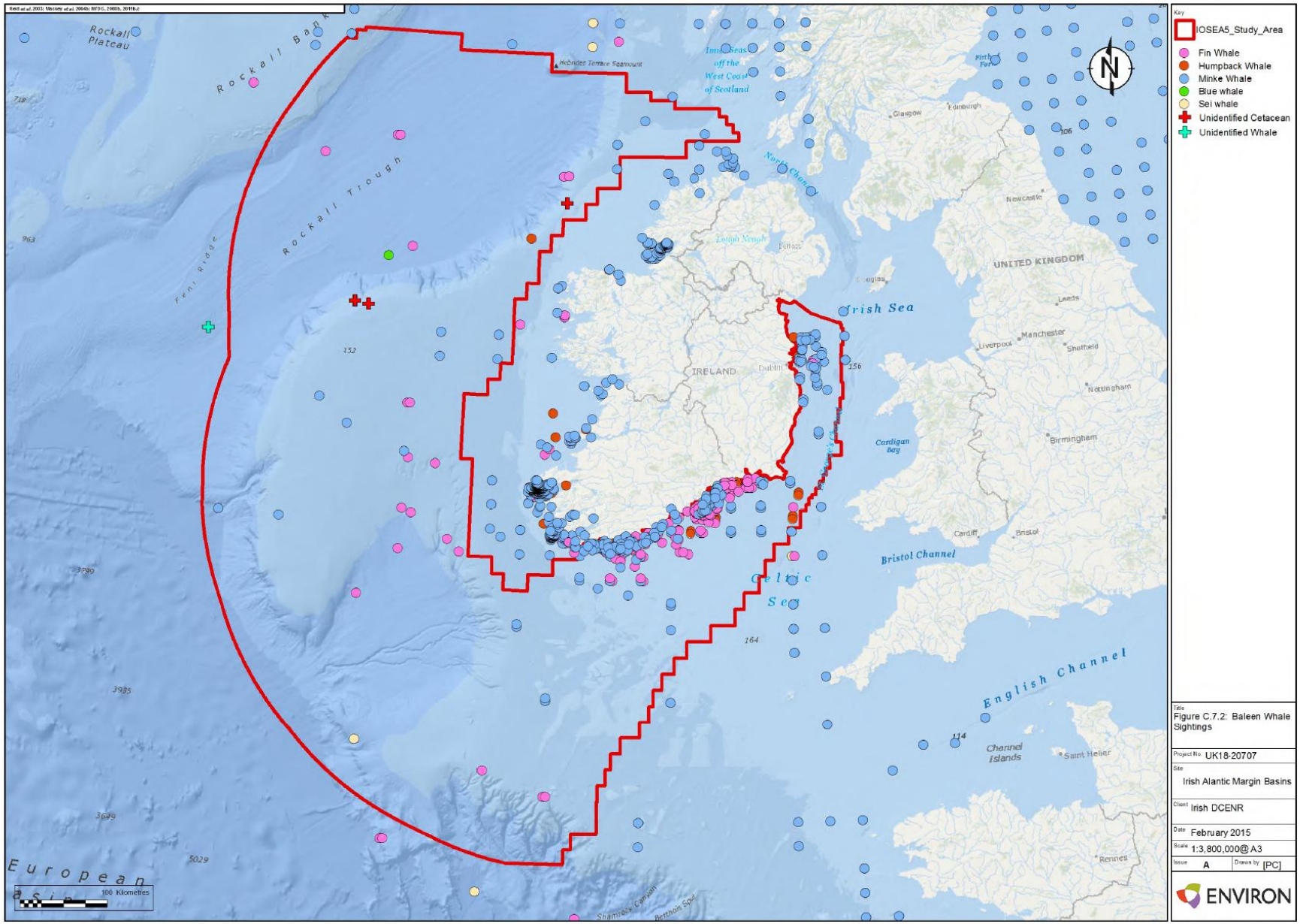


Figure 7.0c: Grey seal breeding sites

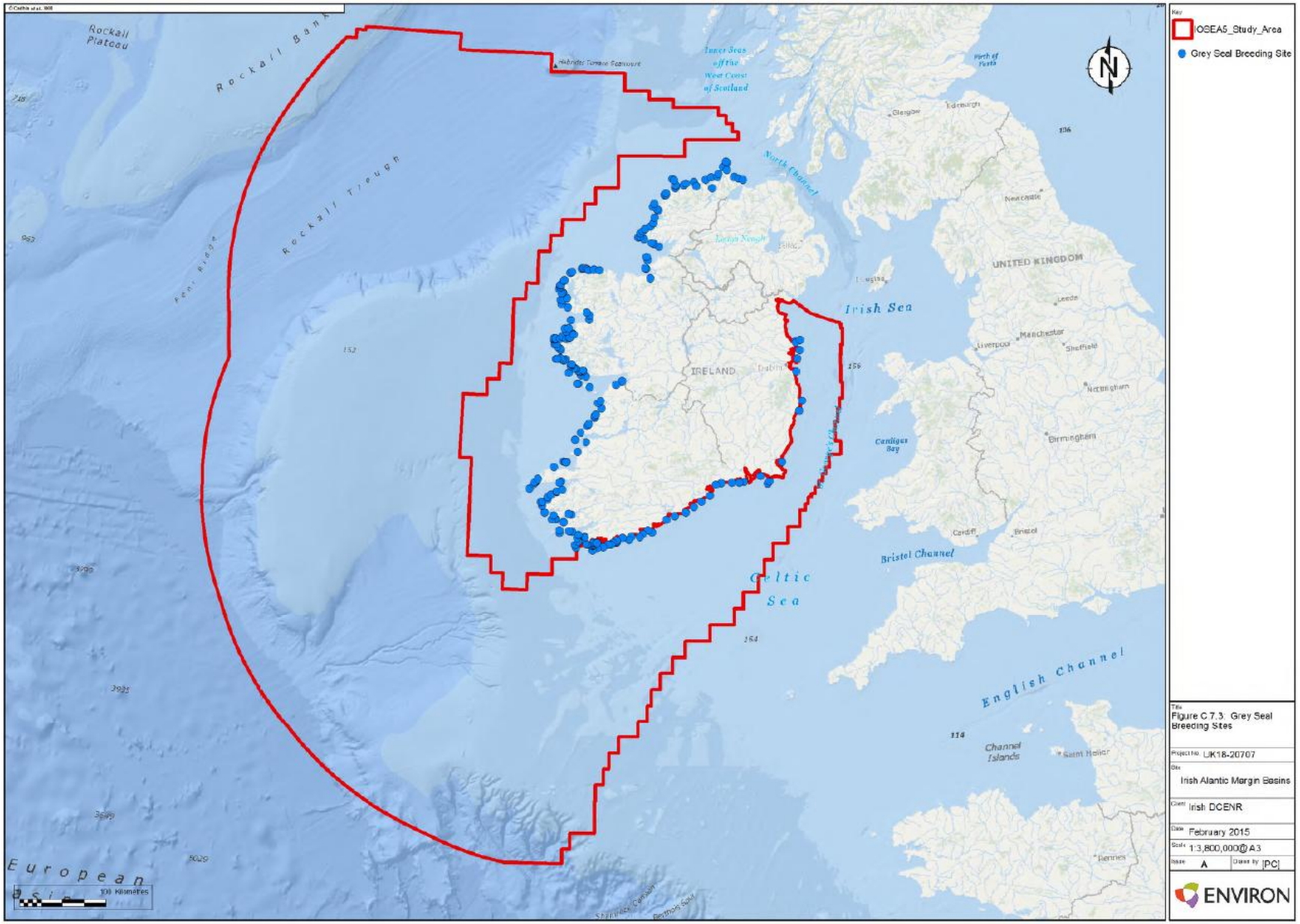


Figure 7.0d: Harbour seal sites

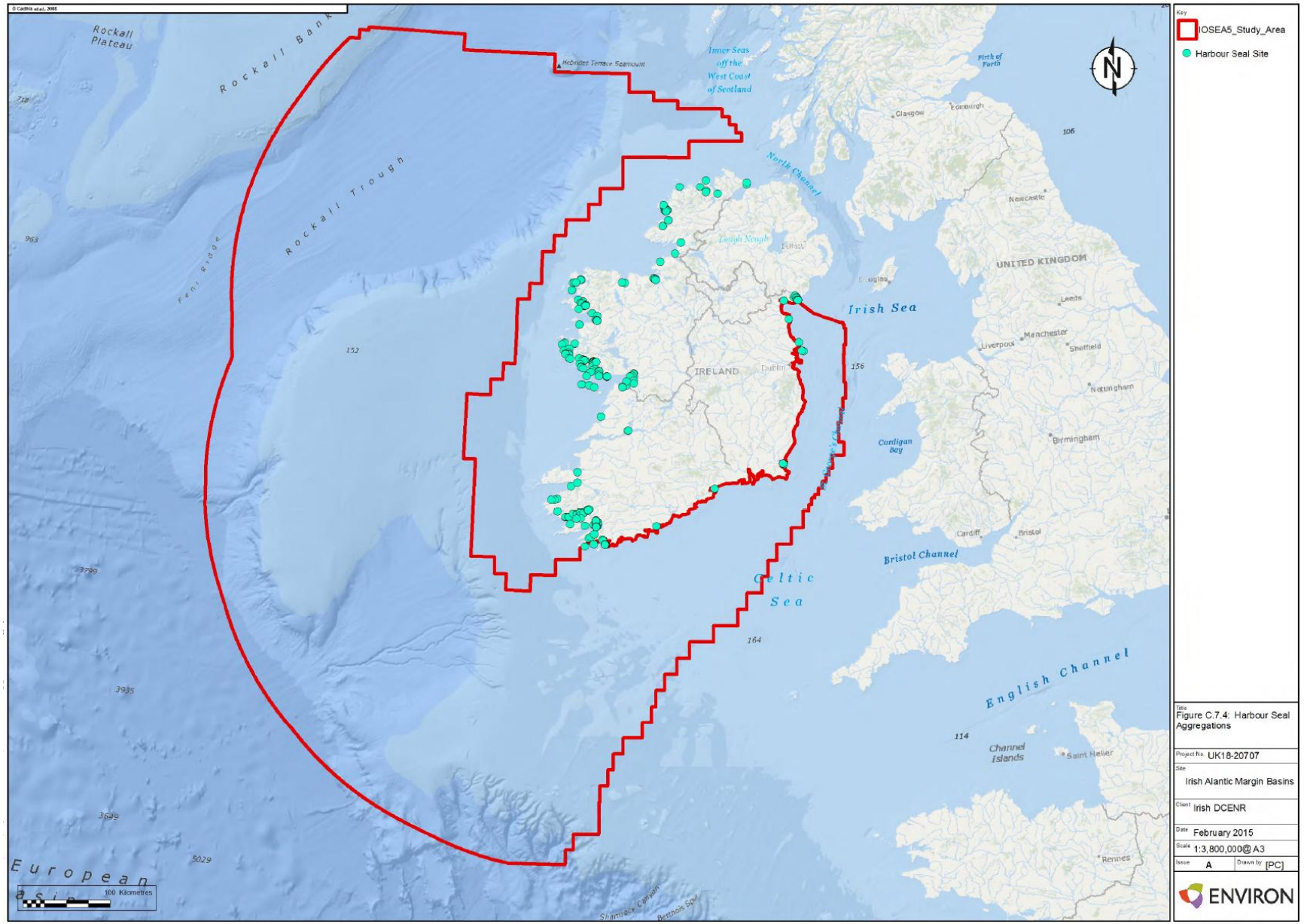
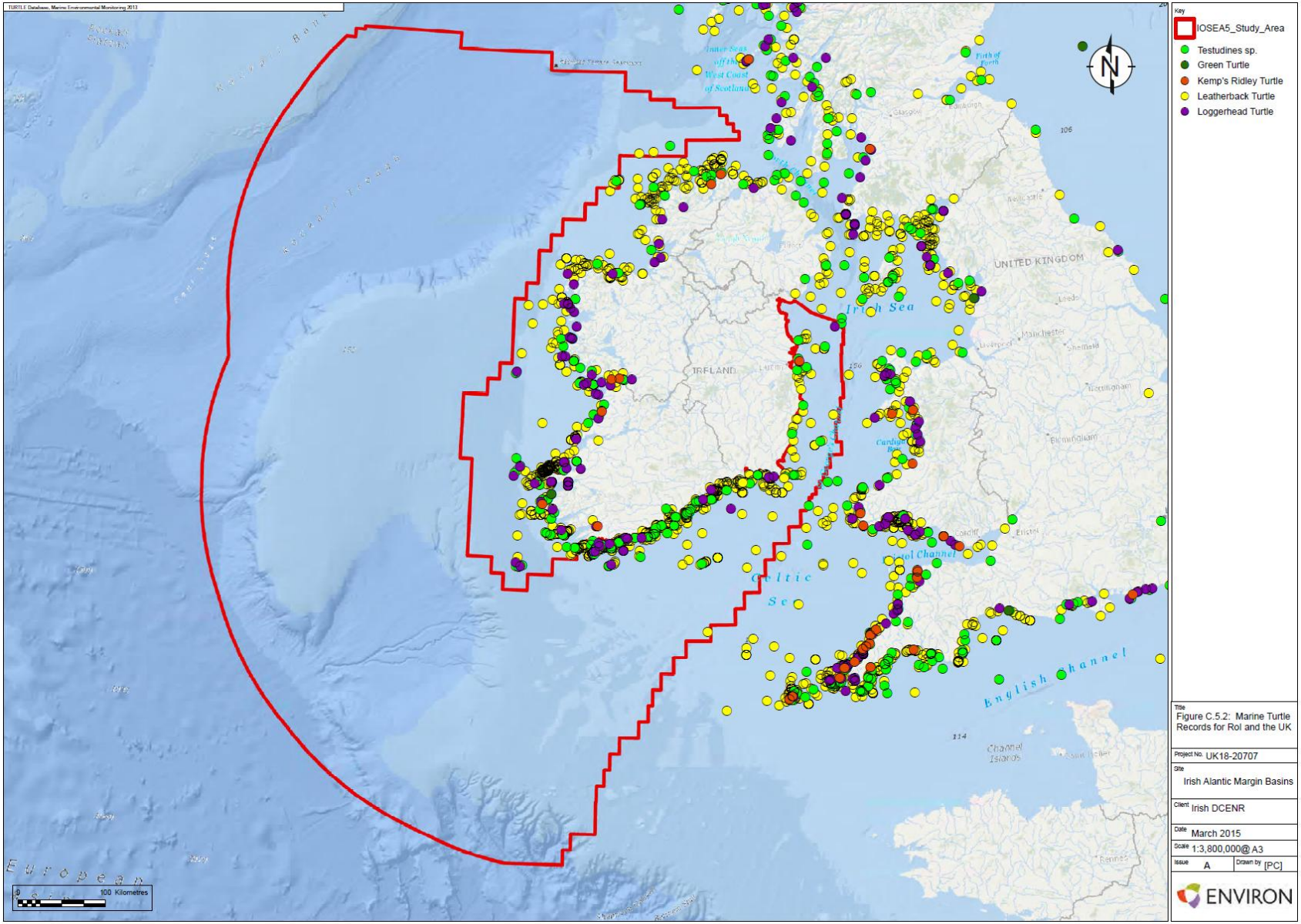


Figure 7.0e: Marine turtle records for Ireland and the UK



Reference: Department of Communications, Energy & Natural Resources (2015). Irish Offshore Strategic Environmental Assessment (IOSEA) 5

Missing information from Links to other Plans and Programmes

It was suggested to reference and consider Food Wise 2025.

Response

Information is included in the addendum to Chapter 6.2.3.2 of the Environmental Report

Addendum to the NSPA Environmental Report

6.2.3.2

Food Harvest 2020

Food Harvest 2020[1] provides a vision for Irish Agri-food and fisheries with the overall aim of achieving Smart, Green Growth and specific targets of reaching €1 billion seafood value (€650 million in exports, €350 in domestic sales) and €1.5 billion revenue from marine & coastal tourism and leisure by 2020. Food Harvest anticipated a 78% increase in aquaculture production and a 43% increase in value by 2020. However, there was no base year given in the plan to gauge this increase against. The value of aquaculture increased by over 27.5 % (€104.2m to €113m) but by 2012 the volume of production actually fell by 26%. By end 2013, the situation had disimproved further due to a combination of an outbreak of amoebic gill disease in salmon, issues with licences and poor weather conditions affecting seed mussel development.

Foodwise 2025

Food Wise 2025 sets out a cohesive, strategic plan for the development of agri-food sector over the next decade. The Agri Food Strategy Committee has identified opportunities arising as a result of significant population growth and greater access to international markets. In addition, the Committee recognises that the increased pressure on global agricultural resources and the environment will offer potential further growth opportunity for the Irish agri-food and fisheries sector. The long-term vision as set out in the Report is of 'Local Roots Global Reach' based on the continued development of the sector where efficient and environmentally-friendly production delivers sustainable export growth on global markets.

On the basis of available data and by taking the actions identified in the Report, the Committee has set the following growth projections, which it believes are achievable by 2025:

- Increasing the value of agri-food exports by 85% to €19 billion.
- Increasing value added in the agri-food, fisheries and wood products sector by 70% to in excess of €13 billion.
- Increasing the value of Primary Production by 65% to almost €10 billion
- The creation of an additional 23,000 direct jobs in the agri-food sector all along the supply chain from primary production to high valued added product development.

To achieve the projections set out above, Food Wise 2025 identifies over 350 recommendations to achieve sustainable growth and these will require a concerted and coordinated approach by primary producers, industry, Departments and State agencies.

http://www.agriculture.gov.ie/foodwise2025/

[1] http://www.agriculture.gov.ie/agri-foodindustry/foodharvest2020/

Irish Water

It was pointed out that Irish Water's responsibilities have been left out of the SEA.

Response

Information on Irish Water is now included in the addendum to Chapter 10.3.3.1 and Appendix B table 15.0c Section Water.

Addendum to the NSPA Environmental Report

10.3.3.1 Designated Waters

Because of the protection status afforded to designated Shellfish Waters in relation to water quality standards, monitoring and pollution reduction programmes, it is desirable that all areas licensed for shellfish aquaculture become designated Shellfish Waters. This did present a challenge for local authorities in the past as maintenance and improvement of shellfish classifications can require significant investment by local authorities to improve the performance of wastewater treatment plants. These challenges have yet to be resolved. Since the enactment of the Water Services Act 2013 responsibility for the management of the national water and wastewater asset lies with Irish Water (see Appendix B table 15.0c).

Appendix B table 15.0c

Water	Water Services Act 2013	Irish Water was incorporated in July 2013 as a company under the Water Services Act 2013. It has combined the public water and wastewater services of the 31 Local Authorities together under one national service provider. Irish Water took over responsibility for public water and wastewater services from the Local Authorities with effect from 1st January 2014. Irish Water is now responsible for the operation of public water and wastewater services, including: • Management of national water and wastewater assets; • Maintenance of the water and wastewater system; • Investment and planning; • Managing capital projects; and • Customer care and billing.

Article 12 Assessment

Concerns were expressed regarding the rationale underpinning the Article 12 assessment.

Response

The SEA used a list published by NPWS of species under Annex IV that need to be considered in an Article 12 assessment. This list was screened to identify which species may interact with aquaculture. For the species screened in, the same assessment approach used for the Appropriate Assessment was adopted.

The conservation status of each species was extracted from Ireland's most recent Article 17 report. Aquaculture was not identified as a direct pressure or threat to any of the species within the Article

17 report. However, using the aquaculture pressures tables and taking account of the habitat occupied by the species some possible interactions were identified and measures which could assist with licence considerations were included. A final exercise was conducted to identify if there are any possible linkages between aquaculture and the Article 12 (1) requirements. In all cases where possible linkages were established, these were also identified in the individual species assessment sheet as discussed previously and mitigation included to reduce potential impacts.

The SEA assesses a strategic development document with no spatial focus. Every new licence application is subject to all assessments as required under the licensing regime including site suitability, AA and EIA where necessary. This includes Article 12 assessment where required.

Addendum to the NSPA Environmental Report

No addendum is made.

Assessment of cumulative impacts

It was suggested that the SEA needed further development in addressing current and future key human activities that may act together to increase pressure on the coastal/marine environment.

Response

The SEA assesses a strategic development document covering the sustainable development of aquaculture on a nationwide basis and has assessed cumulative issues through the assessment of other relevant plans and programmes along with the assessment of the NSPA actions. Human activities vary around the coast of Ireland and any cumulative impacts that have not been addressed within the SEA/AA are outside the scope of these assessments and need to be addressed in site specific assessments. A system is already established to address and evaluate potential cumulative impacts at site specific level through the bay-by-bay Article 6 assessments.

Addendum to the NSPA Environmental Report

No addendum is made.

Water Framework Directive

Concerns were expressed regarding the reliance on the WFD 2005 risk assessment.

Response

Information contained in the SEA regarding the WFD reflects best available information at the time. Annual monitoring of water bodies is in place, updated risk assessments have been carried out by the competent authority and are expected to be published in 2016. Any potential impacts of any future developments will be fully assessed and addressed through the licensing process.

Addendum to the NSPA Environmental Report

No addendum is made.

Mitigation

Concerns were raised as to the lack of a separate chapter summarising the mitigation measures proposed in the SEA.

Response

Chapters 3.3 and 3.4 outline the mitigation measures currently in place for avoiding and/or minimising potential significant effects of aquaculture operations on the environment. Table 10.3.10 identifies the mitigating effects of the various policy actions contained within the NSPA on the assessment topics contained within the SEA. For further clarification mitigation measures have been summarised and are included in the addendum to the SEA.

Addendum to the NSPA Environmental Report

11.0 Recommendations, Mitigation and Monitoring

11.2 Recommendations and Mitigation

Current controls and management measures for the prevention of impacts of aquaculture activities on the environment as outlined in Section 3.2 and 3.3 are existing mitigation measures optimising activities related to aquaculture thus preventing any significant impacts on the environment. In addition, the NSPA introduces further key mitigation measures ensuring that any expansion of aquaculture in new or existing sites will be economically, environmentally and socially sustainable. This is reflected generally in its vision for a streamlined and efficient licensing system that provides greater certainty to administrators, applicants and the general public, and specifically in the action points regarding the application of the six guiding principles for the sustainable development of aquaculture, the provision of expert advice to improve environmental and business performance and enhanced strategic planning by aquaculture enterprises, and the applied research and collaborations between industry, scientific and development bodies.

The six guiding principles for the sustainable development of aquaculture in particular support linkages and integration with existing plans and projects to form a cohesive approach to the development of shared resources and foster a greater understanding of the industry. Measures contained under *Knowledge, Innovation and Technology, Ensuring Sustainability* and *Coordinated Spatial Planning* directly support improved environmental performance. Overall, therefore, the potential expansion of production is not expected to cause a significant impact.

Another key component for the sustainable development of the aquaculture industry in Ireland is the continuation of the Invasive Species Ireland project and the development of an industry Code of Practice for Invasive Alien Species. This is a subject that will affect decisions on what species are cultured and cultivation methods used, and which also has the potential to change farming practices to deal with the impact of invasive species on operations. To mitigate this more research required and administrative processes need to be established on the basis of sound and emerging research so that this topic is dealt with proactively.

A streamlined and efficient licensing system supporting sustainable aquaculture development will ensure solid growth of and support for the development of rural communities through improved security of the sector and will also inform negotiations to maintain, improve and add to the number of designated Shellfish Waters. It also provides an opportunity for the aquaculture sector to address

cultural and archaeological heritage, emissions as well as visual impact ensuring that potential impacts are minimised at project level.

Guidance derived from the principles recommended by the Marine Institute will focus on responsible, sustainable and inclusive development of the aquaculture industry and engaging in responsible planning within the wider marine spatial planning framework which will have a positive effect on a wide range of aspects associated with aquaculture development while facilitating improved understanding of the complex demands on the water resources used by aquaculture and the designations that apply under WFD and MSFD. Opportunities and constraints mapping will support informed decision making and facilitate the operation of aquaculture and other marine activities in harmony with the discovery and appropriate conservation of archaeological and architectural heritage which should be linked in to a national platform for a cross-sectoral coordinated approach. Identifying marine tourism opportunities from aquaculture may positively impact on landscape and seascape appreciation through establishing the direct connection between aquaculture operations and locally produced seafood.

Applying the six principles recommended by the Marine Institute, especially responsible planning, ecosystem protection and a science-based approach, integrating aquaculture into MSFD monitoring systems as well as carrying out opportunities and constraints mapping may facilitate the aquaculture sector to work more closely with other marine sectors at ground level to address local issues and will have a positive effect on biodiversity, flora and fauna as this facilitates a more holistic management approach across all demands on marine and freshwater resources. Focus on Invasive Alien Species will benefit the protection of biodiversity cross-sectorally as well as on a cross-border level while the application of scale limits and phasing in relation to the development of individual offshore salmon farms will ensure that any potential impacts on biodiversity are minimised and mitigated.

The integrated sustainable growth of the aquaculture sector will give added security to long-term rural community development.

Through continuous upgrading of technology, implementation of certification systems (e.g. ECOPACT, quality/ environmental/ organic certification schemes, MSC, ASC), introduction of multi-trophic aquaculture techniques and ongoing research and development the Irish aquaculture industry can ensure use of best practice and most environmentally friendly techniques and technology ensuring that future growth has no significant impact on biodiversity. The provision of expert advice to improve environmental and business performance, applied research and collaboration will further advance improvements of environmental performance within the sector while increased knowledge and enhanced skills within the industry will aid improvements at individual farm level.

The sustainable development of the aquaculture sector will create rural employment opportunities adding improved security through investment in latest technology and ensuring future growth and development is supported by increased knowledge and enhanced skills within the industry and carried out in harmony with the environment, e.g. through schemes such as CLAMS, ECOPACT, MSC, ASC etc. as well as best husbandry and disease management practice. Providing aid to shellfish producers significantly affected by biotoxin closures and supporting risk management by aquaculture enterprises will lend added security to the shellfish sector in particular.

Increased production will increase the availability of Irish quality products on the domestic market. Support for organic certification and eco-label products will further underpin the recognition of sustainable food production and trust in Irish aquaculture products thereby leading to an increase in demand on the domestic as well as the international market. Further support schemes provide continued contribution to programmes that continue to enhance the environmental performance of the sector at individual level, e.g. ECOPACT, quality/ environmental/ organic certification schemes, MSC, ASC.

Consideration of Alternatives

Concerns were voiced that the assessment of alternatives focused only on the implementation of the plan and did not consider alternatives to the overall development of aquaculture in Ireland and that aquaculture production using native local species should be the main alternative.

Response

In accordance with the Article 3(1) of the SEA Directive, alternatives for the implementation of the plan were considered. The alternatives chosen related to the governance and drivers of the plan which could result in different outcomes for its implementation: Government led, Research & Development Led, Market led; or led by a combination of these factors. A combination approach was the most appropriate choice of alternatives given the scope and scale of the NSPA. The assessment of the alternatives concluded that the combination approach would deliver the most effective implementation of the plan with the least environmental impact.

Aside from these alternatives, the NSPA presents a multitude of areas for the potential sustainable development of aquaculture. However, these should not be confused with the assessment of alternatives required by Article 3(1) of the SEA directive. These include new approaches such as multi-trophic cultivation that are on the cutting edge of aquaculture development and can be considered an alternative to conventional one-species farming. It also focuses on the mechanisms and systems of developing sustainable aquaculture without being species specific. Future development is open to all species and technologies as the variety of measures proposed in the NSPA provide a great amount of freedom regarding the development of the sector which in themselves can be deemed alternatives to each other as they cover a multitude of species and cultivation techniques taking into account latest technical developments. These were assessed as such for their potential impacts in both the AA and SEA. Local species are fully considered in the NSPA, e.g. Salmo salar, Mytilus edulis, Perca fluviatilis, Paracentrotus lividus, Palmeria palmata, Alaria esculenta, Saccharina latissima. Further work is envisaged for hatching Ostrea edulis and Pecten maximus. .

Addendum to the NSPA Environmental Report

None added.

5.6 Appropriate Assessment of the NSPA

A number of stakeholders raised issues regarding the content of the AA of the NSPA. These issues have been grouped to avoid repetitiveness of responses. Due to the large number of comments directly related to the NSPA Appropriate Assessment, these have been further broken down by topic and a response provided for each of these.

Content of AA and stakeholder involvement

Concern was expressed as to the content of the AA regarding the level of analysis and the level of consultation with stakeholders.

Response

As the NSPA has no spatial focus but sets out a plan for the sustainable development of aquaculture nationwide, both assessments must focus on strategically assessing the overall potential impact as site specific concerns cannot be evaluated in this context. As part of the SEA process the NSPA and its supporting documents went out on public display and newspaper notice was published inviting all stakeholders to participate in the consultation process.

Changes to the Appropriate Assessment

No changes are made.

Missing SACs from AA

It was pointed out that the AA did not include two SACs, 003000 Rockabill to Dalkey Island and 002998 West Connaught Coast.

Response

The two SACs have been included in the AA in the assessment tables in Chapters 3.9.6, 3.9.28, 3.9.35, and in Appendices 6.1, 6.2, & 6.3. The features of interest of both SACs were covered in the AA assessment.

Changes to the Appropriate Assessment

003000 Rockabill to Dalkey Island, features of interest: Reefs [1170], *Phocoena phocoena* (Harbour Porpoise) [1351]

002998 West Connaught Coast, features of interest: *Tursiops truncatus* (Common Bottlenose Dolphin) [1349]

Missing information from Baseline Environment

It was suggested to call attention to the ObSERVE project, to improve the level of detail considered and to use best available science in relation to marine mammals.

Response

Information on the ObSERVE project is included in in the AA in Chapter 3.1 and References. The details in the Baseline Environment of the SEA are based on best available information at the time of preparation of the document, specifically the 2013 Article 17 assessment (NPWS), the 2013 IWDG.

The NSPA and supporting documents and the IOSEA 5 plan and supporting documents were being prepared at the same time, thus any information contained within the IOSEA 5 and supporting documents had not been available for inclusion in the SEA of the NSPA. This has since been reviewed.

Changes to the Appropriate Assessment

Current research to extend the knowledge of our environment include the ObSERVE aerial project, funded by the Department of Communications, Energy and Natural Resources (DCENR) in partnership with of the Department of Arts, Heritage and the Gaeltacht (DAHG) This is a three-year programme to undertake extensive aerial surveys and collect data on the distribution and abundance of cetaceans, seabirds and other marine megafauna in Irish offshore waters. Four complete surveys will be conducted in summer and winter 2015 and 2016. The project will provide information on seabird and cetacean abundance and distribution in Irish waters. Surveys will run from Donegal, down the west coast and out to the continental shelf edge, and across the Celtic sea. The first survey recorded sightings of minke whales, porpoise, common dolphins and numerous seabird species including storm petrels, gannets and shearwaters. The project is being led by University College Cork with partners Aerosotravia, IMARES, and ALNILAM. (http://www.observe-aerial.ie/)

To date 24 cetacean species have been recorded in Irish waters (Berrow, 2001) with some of these breeding, including Common Dolphin *(Delphinus delphis),* Harbour Porpoise *(Phocoena phocoena)* and Bottlenose Dolphin *(Tursiops truncatus)* among others. Under the Habitats Directive these two last species, Bottlenose Dolphin and Harbour Porpoise are Annex II species whose conservation requires the designation of Special Areas of Conservation (SACs).

Key factors in cetacean distribution are availability and distribution of prey, while water temperature and the North Atlantic drift also play an important role. Cetacean species that have been confirmed to breed in Irish waters include:

- Bottlenose dolphin *(Tursiops truncatus),* found in all coastal waters around Ireland with semi-resident group at the mouth of Cork harbour;
- Common dolphin *(Delphinus delphis),* present in all Irish coastal waters with greatest abundance off the south and southwest coasts;
- Harbour porpoise *(Phocoena phocoena)*, present in all Irish coastal wasters but most abundant in the Irish Sea and off the south and southwest coast of Ireland;
- Risso's dolphin *(Grampus griseus)*, present in all Irish coastal waters and can be regularly observed inshore and in bays along the southwest and southeast coasts;
- White-beaked dolphin *(Lagenorhynchus albirostris)*, offshore species rarely foud in shallow water close to the coast;
- White sided dolphin *(Lagenorhynchus acutus)*, can be seen inshore off the northwest coast in late summer and autumn, also occurs occasionally in the Irish Sea, highest abundance along the edge of the continental shelf, and also in deeper waters; and
- Pilot whale *(Globicephala melas)*, mainly found in deep water off the continental shelf.

Other species may also breed here, e.g.:

- Cuvier's beaked whale *(Ziphius cavirostris),* deep water species occurring off the Atlantic continental shelf; and
- Killer whale *(Orcinus orca),* can be observed off all Irish coasts mainly from offshore island with inshore sightings more frequent during late summer and autumn.

Species that migrate annually along the western seaboard or feed year-round in waters along the south coast and shelf slopes and are not known to breed in Irish waters include:

- Fin whale *(Balaenoptera physalus)*, can be observed inshore mainly off the south and southwest coast;
- Humpback whale *(Megaptera novaeangliae)*, can be found mainly off the south and southeast coast of Ireland;
- Minke whale (*Balaenoptera acutorostrata),* most commonly found off the south and southwest coast of Ireland ; and
- Sperm whale *(Physeter macrocephalus)*, occurs in deep water off the continental shelf.

Other species such as the blue whale *(Balaenoptera musculus)* may over-winter in waters south of Ireland. (DCENR 2015)

The following maps were taken from the Irish Offshore Strategic Environmental Assessment (IOSEA) 5, DCENR 2015 and present information on toothed whale sightings, baleen whale sightings, grey seal breeding sites, harbour seal sites and marine turtle records for Ireland and the UK.

References: Department of Communications, Energy & Natural Resources (2015). Irish Offshore Strategic Environmental Assessment (IOSEA) 5

Missing information from Links to other Plans and Programmes

It was suggested to reference and consider Food Wise 2025.

Response

Information is included in the AA in Chapter 2.2.2.

Changes to the Appropriate Assessment

2.2.2 Links to other National Plans and Programmes

Food Harvest 2020

Food Harvest 2020

Food Harvest 2020[2] provides a vision for Irish Agri-food and fisheries with the overall aim of achieving Smart, Green Growth and specific targets of reaching €1 billion seafood value (€650 million in exports, €350 in domestic sales) and €1.5 billion revenue from marine & coastal tourism and leisure by 2020. Food Harvest anticipated a 78% increase in aquaculture production and a 43% increase in value by 2020. However, there was no base year given in the plan to gauge this increase

[2] http://www.agriculture.gov.ie/agri-foodindustry/foodharvest2020/

against. The value of aquaculture increased by over 27.5 % (€104.2m to €113m) but by 2012 the volume of production actually fell by 26%. By end 2013, the situation had disimproved further due to a combination of an outbreak of amoebic gill disease in salmon, issues with licences and poor weather conditions affecting seed mussel development.

Foodwise 2025

Food Wise 2025 sets out a cohesive, strategic plan for the development of agri-food sector over the next decade. The Agri Food Strategy Committee has identified opportunities arising as a result of significant population growth and greater access to international markets. In addition, the Committee recognises that the increased pressure on global agricultural resources and the environment will offer potential further growth opportunity for the Irish agri-food and fisheries sector.

The long-term vision as set out in the Report is of 'Local Roots Global Reach' based on the continued development of the sector where efficient and environmentally-friendly production delivers sustainable export growth on global markets.

On the basis of available data and by taking the actions identified in the Report, the Committee has set the following growth projections, which it believes are achievable by 2025:

- Increasing the value of agri-food exports by 85% to €19 billion.
- Increasing value added in the agri-food, fisheries and wood products sector by 70% to in excess of €13 billion.
- Increasing the value of Primary Production by 65% to almost €10 billion
- The creation of an additional 23,000 direct jobs in the agri-food sector all along the supply chain from primary production to high valued added product development.

To achieve the projections set out above, Food Wise 2025 identifies over 350 recommendations to achieve sustainable growth and these will require a concerted and coordinated approach by primary producers, industry, Departments and State agencies.

http://www.agriculture.gov.ie/foodwise2025/

Assessment scoring of increased productivity, novel species cultivation and establishment of new aquaculture enterprises

Concerns were raised regarding the scoring of the NSPA policy actions 'increased productivity from existing aquaculture licence portfolio', 'cultivation of novel species' (neutral score in AA table 3.4) and 'establishment of new aquaculture enterprises' (n/a score in AA table 2.6) which would include trestle aquaculture.

Response

All existing aquaculture licences have been subject to full assessment during the licensing process including AA and EIA where required. Thus any potential impacts were assessed prior to existing licences having been issued so that full use of the existing licence portfolio does not change licences or licence conditions justifying a neutral score in table 3.4. Any changes to current licences, e.g.

extensions, as well as any new licence applications will be subject to all required assessments under the licencing regime.

The NSPA identifies the following novel species that are currently being explored for cultivation (p.44): gastropod shellfish abalone, Haliotis discus-hannai, Haliotis tuberculata and the echinoderm or sea urchin, Paracentrotus lividus; the freshwater coarse fish perch, Perca fluviatilis; and various seaweeds including; Alaria esculenta, Saccharina latissimi and Palmaria palmata. None of the animal species is classed as invasive and cultivating methods (i.e. enclosed systems) are not expected to have a negative impact on the environment. Seaweed cultivation may have a positive contribution to climate change adaptation as it can act as a carbon sink. Therefore, a neutral effect was identified.

As laid out in Chapter 6.2.1 on the Use of Alien and Locally Absent Species in Aquaculture Regulations (708/2007/EC & 304/2011/EC) Member States are required to take all appropriate measures to avoid adverse effects to biodiversity, and especially to species, habitats and ecosystem functions which may be expected to arise from the introduction or translocation of aquatic organisms and non-target species in aquaculture and from the spreading of these species into the wild. These Regulations apply to movements of alien species (introductions) or locally absent species (translocations) for their use in aquaculture in the European Union. The Regulations cover all aquatic species including any part that might survive and reproduce. Any novel species that are not mentioned in the NSPA but may be introduced to Ireland for aquaculture purposes in the future are subject to these regulations.

The AA assesses a strategic plan with no spatial focus. Any potential environmental effect of novel species cultivation needs to be assessed at local level as it is not identifiable at strategic level which particular species and which particular cultivation technique needs assessing. This is the same for establishment of new aquaculture enterprises under which trestle aquaculture will fall should new trestle aquaculture sites be established. Table 2.6 identifies at which level potential effects on the environment can be assessed. Any assessment for the establishment of new aquaculture enterprises will be carried out at a site specific level. However, the AA recognises the potential of new aquaculture enterprises to have an effect on the environment, thus, table 3.4 shows that this policy action may have a potential negative effect on favourable conservation status of habitats and species at the local level.

Any future aquaculture licence applications are subject to all stipulations of the licensing process incl. AA and EIA where required.

Changes to the Appropriate Assessment

No changes were made to the AA.

Marine mammals

Concerns were expressed regarding a variety of issues relating to seals and cetaceans, including lack of detail regarding predation at marine cages, risk of entanglement and the potential interaction with acoustic deterrents, the displacement of seals by intertidal oyster farming and that the information contained in the AA does not reflect best available science. It was proposed that the list of potential significant effects should include collision, permanent habitat loss and temporary

habitat exclusion and that the likely effects of aquaculture on breeding and resting sites for seals which fall outside designated areas should also be considered.

Response

To enable a consistent approach to the assessment of potential significant effects, it was decided that the application of pressures and impact tables would be a useful tool. Such tables are widely used to inform Appropriate Assessments. The main source of information to formulate these tables was adapted from:

- Huntington, T., Roberts H., Cousins N., Pitta V., Marchesi N., Sanmamed A., Hunter-Rowe T., Fernandes T., Tett P., McCue J. and Brockie N. 2006. Some Aspects of the Environmental Impact of Aquaculture in Sensitive Areas. Report to the DG Fish and Maritime Affairs of the European Commission; and as re-published in the

- 2012 European Guidance document for Aquaculture in Natura 2000 areas.

However, the tables were also cross checked with the following sources:

- Marine Institute, 2013. Tools for Appropriate Assessment of Fishing and Aquaculture Activities in Marine and Coastal Natura 2000 sites. Report series prepared by ABPmer on behalf of the Marine Institute.

- Crowe, p., Fitch, J.E., Frid, C.L.J., Somerfield, P.J., 2001. A framework for managing sea bed habitats in near shore Special Areas of Conservation. University College Dublin, University of Liverpool & Plymouth Marine Laboratory on behalf of the Department of the Environment, Heritage and Local Government.

These reflect best available information at time of publication. Additional guidance was taken from 'Guidance to manage the risk to marine mammals from man-made sound sources in Irish waters' (DAHG 2014).
Any future applications will be subject to relevant assessments as part of the licensing process, including site suitability assessment, AA and EIA where required.

Specific information regarding the potential impact of salmon farms on bottlenose dolphins, grey and common seals in European Sites is provided in the 2014 Appropriate Assessment Screening for a proposed salmon farm by S. Berrow of the Irish Whale and Dolphin Group and has now been included in the Appropriate Assessment.

An analysis of displacement of seals from haulout or breeding areas by intertidal oyster farming was carried out in an Irish context in the Article 6 Assessment of Aquaculture and Fisheries in Inner Donegal Bay SAC (Murvagh, 0133), SPA (Donegal Bay, 004151), SPA (Durnesh Lough, 004145). This assessment is referenced in the AA of the NSPA and concluded that *'When considering licencing of additional oyster culture activities in the SAC, the maintenance of the favourable conservation status of the Harbour seal status has been considered carefully. It is concluded that, given the likely lack of sensitivity of the locations encountered (in terms of seal sightings and overall abundances), the majority of new applications do not pose any great risk to Harbour seal in terms of habitat occlusion and disturbance. The sandbank north of Inispat is considered an important and sensitive habitat for harbour seal and for this reason the risk of disturbance posed by the single application in the vicinity*

of this area cannot be discounted. Notwithstanding, best practice should be employed by all operators in order to minimise all potential disturbance of Harbour seal.' In addition, it is recommended that oyster trestles should not be placed in potential haul-out sites. This will be addresses e.g. in site suitability assessment for every new licence as the licensing system takes into account sites frequented by seals thus avoiding any conflict to arise.

The AA of the NSPA assesses a strategic development document covering the sustainable development of aquaculture on a nationwide basis. With no spatial focus the evaluation of potential effects of aquaculture on breeding and resting sites for seals outside designated areas is outside the scope of the assessment and needs to be addressed in a site specific context with each licence application. Every new licence application is subject to all assessments as required under the licensing regime including site suitability, AA and EIA where necessary. This includes Article 12 assessment where required.

Changes to the Appropriate Assessment

3.3.1 Marine Cage Culture

Cages can attract predators (wild fish, piscivorous birds, aquatic mammals), which may cause damage to the netting (Holmer 2010). In Scotland, the common seal (*Phoca vitulina*) feeds primarily on fish and can, on occasion, predate on salmon farmed in pens. There are no records in Ireland of bottlenose dolphins becoming trapped in cages although salmon cages are widespread in Ireland and occur at sites where bottlenose dolphins are regularly reported. Modern cage design, ensuring that nets are maintained tensile, predator nets and approved acoustic deterrent devices help manage this issue indeed, *'Carefully engineered design considerations and good day to day operational practices will mitigate any potential negative effects on marine mammals.'* (Berrow 2014) Acoustic deterrent devices can only be used under license from the Minister of Arts, Heritage and the Gaeltacht.

References:

Berrow, S. IWDG (2014) Appropriate Assessment Screening for a proposed Salmon Farm in accordance with the requirements of Article 6(3) of the EU Habitats Directive

Conflicting information on geographical overlap of aquaculture and European sites

It was submitted that in section 2.2.3 Geographical Scope of the NSPA a simple analysis of overlap is provided which concludes that the overall area covered by aquaculture licences represents less than 1% of the total network of European sites, then continues to state that an estimate of 1.5% of European sites is currently covered by aquaculture. It is then suggested an analysis should be included in the AA of the overlap of the current aquaculture licence footprint and the national intertidal resource, the intertidal resources occurring within the 35 SPAs that have been designated for wintering water birds where specific conservation objectives have been produced, and the intertidal habitats favoured by those species of waters that have showed a negative response to trestle cultivation.

Response

It is correct that two different percentage numbers are given in Chapter 2.2.3 of the AA. This analysis tries to illustrate the spatial overlap between licensed aquaculture sites and designated European Sites through calculating area licensed vs area designated.

The 1% overlap refers to total area coverage of **all** aquaculture licences in relation to **total** SAC and SPA coverage. This **does not** differentiate between freshwater or marine sites or sites within or outside designated areas. It is a simple relation between total hectares covered by aquaculture licence and total hectares designated for Natura 2000.

The 1.5% is an attempt at identifying a more accurate overlap of aquaculture licensed area and Natura 2000 designated area. In this second example it is simply **assumed** that the **entire area** licensed for aquaculture is **marine based and in a Natura 2000 designated area** though this is not the case in reality. However, both examples show clearly how small the spatial overlap is overall between licensed aquaculture activities and designated SACs and SPAs.

Any further analysis regarding the overlap of aquaculture and the national intertidal resource, the specific 35 SPAs in which aquaculture occurs and individual bird species in relation to oyster culture is outside the scope of the AA as it assesses a strategic development document covering the sustainable development of aquaculture on a nationwide basis without focusing on any particular species or cultivation technique. Every new licence application is subject to all assessments as required under the licensing regime including site suitability, AA and EIA where necessary

Changes to the Appropriate Assessment

No changes are made.

5.7 General Environmental Issues

5.7.1 Issues Raised

Management approaches to reduce impacts, chemical release and the use of dangerous substances, water quality issues, marine litter and use of local species were all raised as issues during the consultation and have been grouped under general environmental issues. They may be addressed in part in other sections of this document also.

These issues and their potential impact largely relate to appropriate siting and scale of aquaculture given its potential for negative environmental impacts, alone and in combination with other activities. The impacts of other activities on aquaculture were also raised, for example, the impact of poor water quality in shellfish growing areas. Various tools and mechanisms to assist with the appropriate decision making and subsequent development of aquaculture were suggested such as ecosystem approach, carrying capacity, use of the precautionary principle and use of citizen science.

5.7.2 Response

The majority of these general environmental impact issues are addressed already within the NSPA and SEA and AA documents.

Ecosystem-based management is an environmental management approach that recognises the full array of interactions within an ecosystem, including humans, rather than considering single issues, species, or ecosystem services in isolation. This is already at the core of the current system and can only be improved upon in the recommended actions on Marine Spatial Planning and Aquaculture Licencing and as new knowledge becomes available.

Aquaculture operators do not release restricted chemicals into the aquatic environment. It is assumed that the comment about 'use of chemicals' refers to the application of therapeutic treatments which are governed by DAFM's Programme for Implementation of the Dangerous Substances Directive 2006/11/EC in Marine Finfish Aquaculture and established in Irish Law through the EC (Control of Dangerous Substances in Aquaculture) Regulations S.I. 446 of 2008. .

The Dangerous Substances Directive (76/464/EEC) was passed into Irish law as S.I. No. 12 of 2001 and aims to eliminate or reduce pollution of surface waters by certain listed dangerous substances. Two lists of substances are provided. List I substances include Atrazine, Dichlormethane, Simazine, Toulene Tributyltin, and Xylenes and should be eliminated from discharge. List II substances include Arsenic, Chromium, Copper, Cyanide, Fluoride, Lead, Nickel and Zinc and should be reduced. Member States must set emission standards, establish a system of prior authorisation and implement programmes to prevent or reduce pollution through a process of planning, regulation, monitoring, consultation and reporting.

Dangerous substances in aquaculture are further legislated for in the European Communities (Control of Dangerous Substances in Aquaculture) Regulations 2008. The following Environmental Quality Standards apply to substances used in the treatment of marine finfish during the operation of aquaculture facilities on the foreshore in Ireland.

Regulatory limits for dangerous substances in aquaculture (DAFM 2008)

The following standards shall apply 24 hours post treatment at 100m from site

Cybermethrin (Excis)	0.5 ng/l
Teflubenzuron	30 ng/l
Emamectin benzoate (Slice)	0.22 ng/l
Alphamax	2 ng/l
Azamethipos	150 ng/l

These levels are below the documented toxicity level for marine vertebrates and invertebrates and modelling results at standard dosing rates have shown that any treatments proposed will comply with these regulations (BIM 2012).

Treatments will only be carried out when monitoring under the National Integrated Pest Control Strategy has shown them to be necessary. Treatments are further supervised by a veterinary advisor.

From the outset the most important control for preventing impacts of aquaculture activities on the environment lies in the Irish licensing system. Any licence application received by DAFM for a proposed activity in a Natura 2000 area is sent for an Appropriate Assessment that is carried out by the Marine Institute following the setting out of the conservation objectives by NPWS. These conservation objectives are based on Ireland's obligations under the Birds and Habitats Directives. On receipt of the Natura Impact Statement, DAFM in conjunction with its scientific and technical advisors then carry out an Environmental Impact Assessment (EIA) screening to ensure compliance with EU Environmental Directives. Full mandatory EIA is required for "Seawater fish breeding installations with an output which would exceed 100 tonnes per annum; all fish breeding installations consisting of cage rearing in lakes; all fish breeding installations upstream of drinking water intakes; other freshwater fish breeding installations which would exceed 1 million smolts and with less than 1 cubic metre per second per 1 million smolts low flow diluting water." (SI 600 of 2001) All applications and the accompanying AA and EIA screening (or EIS) are sent to Statutory Consultees as per S.I. 236/1998. The same documents are also set out for public consultation in the locality of the application giving members of the general public the opportunity to comment.

Ireland's water quality according to the EPA in 2012 shows that 71% of river channel is of good or high status, and 64% of the area of coastal and transitional waters is at good or high status.

Pressures from aquaculture on freshwater resources have been assessed in the SEA. Maintaining good water quality is essential to fish health. Each finfish farm must have a regular water monitoring programme in place. All freshwater fish farms have to obtain effluent discharge licenses in which details of the required monitoring are stated. Monitoring is carried out at specified intervals by the farms themselves with samples sent to independent labs, as well as by the relevant County Council. For freshwater sites with effluent discharge licences issued under Section 4 of the Local Government (Water Pollution) Act 1977, reviews are being carried out in the context of the Environmental Quality Standards specified in the Surface Water Regulations (S.I. No. 272 of 2009). The impact that the effluent discharge has on the receiving water body depends on the characteristics and magnitude of the pollution loading and on the sensitivity of the receiving water body. This defines the assimilative capacity or the ability of a water body to receive an effluent. The Environmental Quality Standards (EQS) for a particular water body reflect this and must be taken into account when considering an application. These standards have been set so that any discharges do not compromise the ability of a water body to achieve Good Status. All relevant permissions for discharge of effluent must be in place prior to the issue of an aquaculture licence. This will further reduce potential risks to water bodies from aquaculture activities. Measures contained in the NSPA were assessed in relation to water pollution in chapter 10.3.4.3 of the SEA.

Under the *Aquaculture Licensing* policy area the policies to progressively remove the current aquaculture licensing backlog and improve transparency will make tracking easier and therefore contribute to the enforcement procedures should pollution events occur. The strengthening of current licensing procedures will ensure that risks are appropriately assessed at this stage and addressed as necessary through licensing decisions and conditions. The added requirements for effluent discharge licensing and other permissions from local authorities / Irish Water applying to freshwater fish farms in relation to abstraction and flow regulation will further address water pollution risks.

Engagement with MSP initiatives via 'Principle 1 – Responsible Planning' as well as 'Principle 2 – Ecosystem Protection' of the six guiding principles as recommended by the Marine Institute will deliver a more holistic understanding of demands on the marine resources and have the potential to help facilitate sectors to work together to minimise cumulative risks, identify incidents and carry out remediation as necessary.

Through support schemes as proposed under the *Aiming for Growth* and *Knowledge, Innovation and Technology* policy areas, knowledge innovation and technology advancement may contribute to development of new procedures and processes which could minimise water pollution risks. Similarly, the ongoing support of certification schemes will help to educate aquaculture operators about water pollutions risks and encourage them through processes of continual improvement to take steps to minimise risks. Where incidents do occur a well organised sector in the specific geographical area will have the means to react appropriately. In conclusion, the overall impact of the measures contained in the NSPA on the issue of water pollution will be positive.

The issue of Marine Litter has been assessed in Chapter 10.3.9.3 of the SEA:
Support schemes under *Aiming for Growth* and *Knowledge, Innovation and Technology* facilitating ongoing support for CLAMS, ECOPACT and other certification that promote sustainable aquaculture practices will help to reduce impacts of marine litter and further develop the good initiatives already in place across the country. Participation in MSP initiatives may facilitate the aquaculture sector to work more closely with other marine sectors at ground level to further address marine litter problems. The overall impact of the measures contained in the NSPA on the issue of marine litter is expected to be positive.

Integration with other legislation is not within the scope of the NSPA.

The NSPA is a 7 year plan determining policy for the development of aquaculture focusing not simply on growth of the sector but how it is managed and operated as a whole. It is a high level plan without a spatial focus. Therefore the request to consider environmental capacity is beyond the scope of the plan. Studies examining this issue are desirable but as projects such as UISCE have demonstrated, they represent a considerable investment of financial resources, expertise and time, and depending on the model used and parameters assessed and scale of application, the outcomes can be extremely variable.

Local species are considered in the NSPA, e.g. Salmo salar, Mytilus edulis, Perca fluviatilis, Paracentrotus lividus, Palmeria palmata, Alaria esculenta, Saccharina latissima. Further work is envisaged for hatching Ostrea edulis and Pecten maximus. The majority of other native local species cannot be considered for cultivation due to their low or non-existent market potential and thus do not present a viable alternative to be included in sustainable aquaculture development.
The NSPA sufficiently addresses the issues raised at strategic level. No changes have been made to the NSPA.

5.8 General Policy

5.8.1 Issues raised

Many of the general policy issues raised were outside the scope of the NSPA. There were calls for better cross-sectoral and departmental co-ordination and questions raised about the purpose and implementation of the NSPA and how it relates to other current and past plans.

Further respondents aired opinions that there is a conflict of interest in DAFM and BIM as they are both promoter and investor, and licensing body. There were various comments about knowledge gaps and how this affects decision making for the government and industry.

5.8.2 Response

The context for the NSPA in light of other policy and plans is set out in Chapter 1 of the plan and further information on relevant policies, legislation, plans and programmes is detailed in Chapter 6 and in Appendix B of the Environmental Report. Many of the NSPA actions are set in the context of other policy areas and will draw on these in their execution, for example, those actions related to Marine Spatial Planning.

The suggestions that there is a conflict of interest in DAFM and BIM is incorrect. DAFM is the licensing body. The licensing process is described in detail in the NSPA and the Environmental Report and the current system will be further improved upon through the implementation of the NSPA. BIM is the development agency for the Seafood sector. It manages a number of grant aid schemes but in accordance with the rules and selection criteria it can only award grant aid once applicants are fully licensed, , are in compliance with the terms and conditions of that licence and satisfy the criteria of the particular funding measure to which they apply. A further suggestion that there is a bias towards salmon farming development is also incorrect. The NSPA does not set any targets by species. It is true that its implementation will be set in the context of market demands but this is true of any commodity. Therefore, where there is a large demand for farmed salmon and there is interest in establishing farms in Ireland, subject to licence support will be provided for the sustainable development of such aquaculture.

The suggestions that there are general gaps in knowledge will be addressed progressively through the implementation of the plan especially through the actions proposed by the Knowledge, Innovation and Technology priority area. Knowledge gaps will always exist and it is important to recognise and prioritise their address.

The NSPA sufficiently addresses the issues raised at strategic level. No changes have been made to the NSPA.

5.9 Stakeholder Issues

5.9.1 Issues raised

There were various opinions about the level of stakeholder engagement involved in the preparation of the NSPA and the associated SEA process with some indicating that consultation was insufficient

while others welcomed the openness and transparency of the process. There were suggestions that there should be more opportunity for public participation in the aquaculture licensing process. There were differing opinions on the level of Aarhus compliance of the process. Some of the comments were outside of the scope of the NSPA and related more to the Seafood Operational Programme and Marine Spatial Planning in general.

5.9.2 Response

There are two different types of stakeholder participation being raised here. Firstly the issue of stakeholder participation in the NSPA, and secondly, the issue of general stakeholder participation in aquaculture licensing and Marine Spatial Planning as a whole.

Stakeholder participation in the licensing process is determined by the regulatory framework for licensing and is extensive. The NSPA proposes a specific review of the licensing process, including the regulatory framework.

Stakeholder participation in the preparation of the NSPA has been in line with the SEA Directive (2001/42/EC), and taken the form of statutory consultation at SEA Scoping stage and public and statutory consultation following publication of the draft plan and Environmental Report as per the legal requirements of the SEA process. The Appropriate Assessment was compiled in consultation with the MI and NPWS. The AA was published alongside the NSPA and SEA Environmental Report and there was also subject to full public and statutory consultation.

It should be noted that all consultation carried out was in accordance with the legal requirements of the SEA process. The scoping consultation period was longer than required due to the importance of engagement with the designated environmental authorities and stakeholders. This led to a complete reworking of the NSPA proposed at scoping stage which conformed to the format of the European communication and resulted in a draft plan which was much more appropriate to the Irish situation. This is discussed in greater detail in Chapter 7 of this SEA statement. A six week consultation period was allowed for the public and statutory consultation on the NSPA, Environmental Report and Appropriate Assessment.

There are no changes to the NSPA. It is important to note that the draft plan did change considerably post scoping consultation.

5.10 Licensing

5.10.1 Issues Raised

A number of submissions raised concerns about the licensing process for aquaculture, how applications are assessed, the duration of aquaculture licences, licence conditions for operation and consequences of restrictions placed on licences with respect to grant aid eligibility (19A) and transfer of licences. Other submissions requested that provisions to assess the cumulative environmental impacts of aquaculture and other activities be established, and that the licensing process has a clear timeframe.

5.10.2 Response

The NSPA proposes an overall strengthening of the existing licensing process with a 2020 vision of "A streamlined and efficient licensing system that provides greater business certainty to applicants, and transparency to the general public." As a high level strategic plan its intention is not to address many of the specific aspects of the licensing process raised in the submissions. Licensing of aquaculture is undertaken in accordance with statutory requirements and other legislation at European Community and National level including from an environmental perspective, the EIA Directive and Habitats Directive, and this will continue to be the case. The NSPA proposes a specific review of the aquaculture licensing process, including the regulatory framework. The cumulative impacts of aquaculture are taken into account in the approach to EIA Screening of licences which is carried out on a bay by bay basis. The Appropriate Assessment of licences as required by the Habitats Directive is also undertaken on a bay by bay basis and in combination with fisheries assessments, thus taking account of potential cumulative impacts.

The NSPA sufficiently addresses the issues raised at strategic level. The proposed review of the licensing process and its regulatory framework will examine many, if not all, of the issues raised. No changes have been made to the NSPA.

5.11 Enforcement

5.11.1 Issues Raised

A number of respondents made comments regarding enforcement in aquaculture. This is directly related to the licensing process. Several of these proposed that enforcement be transferred to an independent agency. Suggestions included the SFPA and IFI.

5.11.2 Response

Enhanced regulatory monitoring introduced more recently for the aquaculture sector is detailed in section 3.3 of the NSPA. Additional information about enhanced regulatory monitoring is provided below.

The NSPA proposes a review of the aquaculture licensing process, including the regulatory framework. Statutory provisions for enforcement of licence conditions may be examined in that context.

The below text has been added to the NSPA. The NSPA Policy Actions sufficiently address the issues raised at strategic level.

Enhanced regulatory monitoring

A dedicated Monitoring and Compliance Unit has been established within the DAFM to strengthen the adherence to the terms and conditions of all aquaculture licences. The Unit brings greater coherence to the existing monitoring system leading to enhanced monitoring and regulatory standards, practices and procedures. A structure for the systematic audit of licence conditions has been put in place. This is a very substantial enhancement of the existing regulatory procedure and supplements all other inspections of sites.

The Unit avails of services provided by representatives of DAFM, MI, Engineering Division (DAFM), SFPA, MSO and BIM as necessary.
The areas targeted for audit include the following:-
Site:

- Navigational marking
- Location (within licensed boundaries)
- Cleanliness/redundant structures
- Access routes
- Planning permissions (if appropriate)

Structures

- Type of structure
- Alignment
- Moorings (if appropriate)
- Spacing

Stocking and Records

- Species and source
- Stocking density
- Stock movements
- Fish health
- Predator control
- Chemical usage
- Disposal of mortalities
- Fallowing
- Escapes

Environmental Monitoring

- Water quality
- Effluent discharge (if appropriate)
- Chemical discharge
- Benthic monitoring
- Waste management
- Emergency action plan

5.12 Funding

5.12.1 Issues Raised

Overall the comments suggest that there is not enough detail on how the NSPA is linked to the EMFF Seafood OP. There is confusion around the proposed "New Farmers Scheme" in the sense that it appears that new entrants to the sector may only access this scheme and not any of the other schemes such as the Commercial Aquaculture Development Scheme.

5.12.2 Response

Several of the comments deal with specifics of individual schemes and will be dealt with in the selection criteria under the auspices of the Operational Programme Monitoring Committee. This

topic is addressed in detail in the Seafood Operational Programme which has been subject to a parallel SEA process and associated public consultation. Article 34 of the Common Fisheries Policy Regulation requires that Member States prepare multi-annual National Strategic Plans for Aquaculture that are intended to inform investment priorities for aquaculture under the member states' Operational Programmes under the European Maritime Fisheries Fund. The scope of the NSPA is broader than simply investment needs but it does contribute to the establishment of funding arrangements within the Seafood Operational Programme.

The specifics of funding measures are a matter for the Seafood Operational Programme. The development of schemes to provide funding to support the aquaculture sector will be guided by the Policy areas and actions in NSPA but it is not the purpose of the NSPA to develop or detail funding schemes. No changes have been made to the NSPA.

5.13 Jobs

5.13.1 Issues Raised

The submissions focused mainly on the requirement for jobs to be created locally from the aquaculture sector with some questioning the number of jobs that can actually be provided by aquaculture when compared with other coastal activities.

5.13.2 Response

The NSPA will not directly create jobs and as a high level strategic plan, it is not its intention to do so. However, by facilitating the sustainable growth of the sector it will also facilitate the delivery of more employment within the aquaculture sector and in the localities where it is situated. The Irish Aquaculture sector is dominated by small enterprises, which is typical of rural employment in Ireland. Aquaculture directly employs nearly 2000 FTE and indirectly employs many more. It is estimated that for every full time job in aquaculture there is a multiplier effect of 2.27 for additional local jobs.

The NSPA sufficiently addresses the issues raised at strategic level. No changes have been made to the NSPA.

5.14 Growth Targets

5.14.1 Issues Raised

Comments varied from the targets being too ambitious to the detriment of the environment, to not being ambitious enough. It was also suggested that the targets be more specific.

5.14.2 Response

The growth targets were compiled on a sector wide basis rather than for individual species in order to allow for flexibility in market demands over the course of the programme. Because any individual is entitled to make an application for an aquaculture licence in any location the NSPA is unable to set definitive targets by species or area. It does, however, seek to complement and enhance existing

licensing procedures, to ensure that all aquaculture is developed and operated in a sustainable manner.

The rationale for the growth targets included in the NSPA is clearly set out. The targets are appropriate to the strategic level of the plan, the Irish context and the European Commission requirements. There are no changes to the NSPA.

5.15. Marine Spatial Planning

5.15.1 Issues Raised

The comments relating to MSP are all in favour of the process of Marine Spatial Planning and efforts within the plan to link with MSP initiatives are welcomed.

5.15.2 Response

The development of an overall MSP strategy for Ireland is outside the scope of the NSPA and so the plan is able only to make a commitment to participate appropriately within any structures established for Ireland. Indeed the NSPA has an entire policy area dedicated to Co-ordinated Spatial Planning.

Since the publication of the NSPA for consultation, the report from the Enablers Task Force on Marine Spatial Planning has been produced. The actions proposed in the NSPA to integrate aquaculture into the MSP process are consistent with the report. The Task Force in summary recommends a framework for MSP devised as follows:

- A National Marine Spatial Plan should cover Ireland's marine environment at a broad strategic level, with more detailed plans being prepared subsequently at a sub-national level as required.
- In line with EU policy and international best practice MSP should be established in Ireland through primary legislation. This will require the establishment of a lead Department to draft and enact legislation establishing the MSP Body and plan-making framework recommended by the ETF. Pending drafting and enactment of such legislation, a multi-disciplinary MSP Body should be created on a "shadow" basis to start establishing the processes and the plan itself.
- Robust plans require a sound evidence base. A substantial amount of marine-related data and information already exists (such as Ireland's Marine Atlas 2), and this provides a good platform for the preparation of the first marine spatial plan. An expert advisory group should be established to assist in filling any gaps.
- Marine spatial plans should aim for sustainable and efficient use of marine space by maximising multiple uses and where necessary, for the management of conflicts or to highlight specific opportunities for potential investors, the zoning for preferred uses.
- Meaningful and early consultation with all stakeholders, including the general public, is essential. Engagement with regulatory and consenting authorities, sectoral and environmental organisations, coastal local authorities and development bodies will contribute to the management of land-sea interactions, thus enabling the inclusion of marine-related opportunities in local and regional development plans.
- The initial focus should be on forward planning and the preparation of a National Marine Spatial Plan. A plan-led system facilitates greater consistency in decision-making. This

requires that consent authorities are obliged to have regard to relevant spatial policies and objectives set out in the plan.

- The Task Force is aware that as part of the wider reform and efficiency agenda, public bodies are continuing to bring about positive changes to a variety of marine licensing and consent processes, and recommends that further streamlining of such processes should be undertaken by Departments and agencies while the national marine spatial plan is being prepared and adopted. The report sets out suggested criteria to guide this process. Ultimately, consideration can be given to devolving responsibility for some marine consents / licences to a designated MSP body, in order to maximise synergies between marine plan preparation and implementation.
- It is estimated that a National Marine Spatial Plan, including full consultation and environmental assessment in accordance with EU directives, could be adopted by the lead Minister within four years.

There are no changes to the NSPA

5.16 Invasive and Non-native Species

5.16.1 Issues Raised

The issues raised concern mainly the use of non-indigenous species in aquaculture particularly *Crassostrea gigas* and also questioned the risks of alien species transfers.

5.16.2 Response

The use of alien and locally absent species in aquaculture is already legislated for by Council Regulation 2007/708/EC concerning the use of Alien and Locally absent species in Aquaculture.

The NSPA has two policy actions relating to invasive alien species under the heading of 'Ensuring Sustainability': Development of an industry Code of Practice for Invasive Alien Species and; Continuation of Invasive Species Ireland Project in relation to aquaculture. These project actions will help to deliver research into prevention and control of NIS, promoting opportunities for the aquaculture sector to learn about and take appropriate action to reduce the risks of invasive species introduction and spread in line with MSFD targets. Control of invasive species is a major challenge, and involves cross-sectoral and cross-border co-operation by a range of responsible bodies and sectoral interests. In response to this issue a joint approach was undertaken by the relevant Departments in Northern Ireland and the Republic of Ireland to establish the Invasive Species Ireland project.

Cultivation of *Crassostrea gigas* has supported employment in the rural areas since the early 1980s and contributed significantly to the income of the aquaculture sector, e.g. in 2011/12, 27% of income in the sector was derived from oysters.

C. gigas is not included as an invasive alien species in European legislation. However, it is included in aquaculture regulations. Thus, from a regulatory perspective, cultivation *of C. gigas* does not fall into the invasive alien species category. However, since *C. gigas* has the potential to establish in the wild and affect indigenous biodiversity, management steps are being taken to counteract any spread of *C.*

gigas. One of these is the provision of sterile seed stock to oyster farmers in Ireland through an Irish hatchery supported by BIM and the Marine Institute as stated in the NSPA. According to BIM 2014 records, the majority (close to 85%) of the Pacific oyster industry in Ireland is already growing triploid stock.

In addition, as stated in the SEA on the NSPA, BIM in conjunction with the National Biodiversity Data Centre and in consultation with the Marine Institute and NPWS are currently developing a site specific risk assessment for invasive alien species to identify species, pathways and vectors. This risk assessment, while voluntary, is an integral part of the ECOPACT certification system. Invasive Species Risk assessments are also undertaken by members of the Eco and Organic standards as part of their commitment to continual improvement of environmental management practices.

The SEA fully assessed the issue of invasive alien species including *C. gigas* in Chapter 10.3.1.2.

The Alien Species and Aquaculture Regulations require Environmental Risk Assessments and these will also be carried out as part of licence applications as required, but relate only to species being cultured. The potential impacts from invasive alien species for which aquaculture is a vector will be assessed through the AA and EIA screening procedures. However, at present this area is less structured and focused than it could be and there is no formal procedure dedicated to identifying and addressing risks of invasive alien species. This is partially due to knowledge gaps and a loss of momentum in addressing issues arising from the cessation of the Invasive Species Ireland Project. The NSPA proposes a continuation of this project as well as the development of an industry code of practice for Invasive Alien Species to address these current shortcomings. These policies will also help the aquaculture sector to help themselves in relation to education about, prevention and control of invasive species. Also, there is a lack of support for aquaculture businesses impacted by invasive alien species. The environmental baseline identified gaps in knowledge in relation to cultured non-native species, particularly *Crassostrea gigas*. This species, although widely cultured across Europe, has been subject to a campaign for improved management. Once again, while knowledge gaps exist it is difficult to make sound management decisions.

'Principle 1 – Responsible Planning' of the six guiding principles as recommended by the Marine Institute relates to engagement with marine spatial planning initiatives. These may help to address invasive alien species problems cross-sectorally. This is of vital importance in relation to species which impact upon aquaculture but which are transported by other vectors and therefore outside of the control of the sector. *Didemnum vexillum* is a case in point as it was first introduced to Ireland through the movement of recreational sailing boats and is now having a negative impact on aquaculture operations and biodiversity. An identified priority for implementation of MSFD in Ireland is the improvement of knowledge in relation to the presence, distribution, trends and impacts of invasive alien species. (MI, DCELG, 2014)

In conclusion, the overall impact of the measures contained in the NSPA on the issue of invasive species is expected to be long term positive.

The issues relating to invasive and non-native species are adequately addressed in the NSPA. There are no changes to the NSPA

5.17 Organic Production

5.17.1 Issues raised

Several respondents made comments in relation to organic certification. These observations included opinions regarding the overall acceptability of organic certification for salmon farming, e.g. that farmed salmon should not be allowed to be classed as organic, that organic certification in salmon goes against the organic ethos and is purely a marketing idea, that the use of organic labelling as a marketing tool may destroy the authenticity of genuine organic products and is deceptive to the consumer, or that salmon farming does not comply with organic principles as seems proven by the failure of the U.S. and Asian countries to recognise organic standards for salmon.

It was submitted that organic certification is not a "competitive advantage" but rather an offset against competitive disadvantages, that a focus of the plan on “organic non-native salmon and novel species” is wrong and that there appears to be a reliance on organic certification to overcome an unviable industry. Finally, one respondent felt that organic status may hamper the ability to control sea lice due to restrictions on treatments.

5.17.2 Response

The European Union accepts that salmon farming can be subject to organic standards. The rules for organic aquaculture in Europe are laid down in EU Regulation 710 of 2009. Private label organic standards still exist, and may contain requirements above and beyond the scope of the EU regulation, but must include all of the requirements of the regulation. The purpose of the EU regulation was to harmonise standards across the EU and provide consumers with the assurance that organic standards are the same in each Member State.

Specific requirements for organic salmon production include;

1. Exclusion of GMOs: Diet containing organic and natural ingredients free from GMO’s.
2. Protection of fish welfare and promotion of fish health with low stocking densities < 10KG/M^3.
3. The use of feed from sustainable sources: Fishmeal in diet must be derived from by-products of pelagic fish suitable for human consumption, sourced from sustainable fisheries.
4. The use of natural over synthetic products and processes: Pigmentation of flesh must be from natural origin such natural yeast (phaffia).
5. A respect of nature, the environment and a commitment to recycling, reuse and recovery: Nutrient discharge monitoring and reduction; waste management plan identifying waste streams and their reduction.
6. Maintenance of a healthy and sustainable aquatic ecosystem: Environmental impact assessment of farming practices employing single bay management and site fallowing principles, stocking of healthy and naturally selected stock.

Specifically with regard to the comment on the ability of organic salmon farms to control sea lice due to treatment restrictions, Article 25t Veterinary Treatments clause 2 states; “The use of allopathic treatments is limited to two courses of treatment per year, with the exception of vaccinations and compulsory eradication schemes. However, in the cases of a production cycle of less than a year a limit of one allopathic treatment applies. If the mentioned limits for allopathic treatments are exceeded the concerned aquaculture animals cannot be sold as organic products.”

All salmon produced in Ireland is of the native Atlantic variety (Salmo salar). No non-native salmon species are farmed in Ireland.

Please refer to section 5.20 with regards to the sea lice issue.

The focus of the NSPA is on the development of mechanisms for the development of a sustainable aquaculture industry. It covers a large variety of species and growing techniques without focusing on one specific species and/or culturing technique.

The NSPA sufficiently addresses the issues raised at strategic level. No changes have been made to the NSPA.

5.18 RAS

5.18.1 Issues

There is considerable support for the use of Recirculating Aquaculture Systems (RAS) amongst respondents especially for ongrowing of salmon with some suggestion that it should be the only option for salmon farming. There is criticism for the lack of a specific strategy and direct support for the development of RAS.

5.18.2 Response

RAS is referred to in the NSPA sections on perch culture and as part of the opportunities for salmon. It is also included in the knowledge, innovation and technology chapter section on requirements for research and development in the industry in both freshwater and saltwater.

This area of aquaculture is still in its infancy, so further research and investigation of the technical aspects of the technology need to be carried out along with analysis of the market demand for the product and its economic viability. Some work has already been carried out in Ireland on the economics of ongrowing salmon in RAS but this still needs to be validated by a commercial trial under Irish conditions. From other trial sites in Denmark and Canada, there are still some obstacles to be overcome before ongrowing salmon becomes commercially viable in Ireland. One of the main obstacles to development is the initial start-up capital investment required. One study estimated that it would cost €33million to set up a 5000T unit. As any individual can apply for an aquaculture licence for any species and any area, there needs to be interest from potential aquaculture operators and investors to pursue this type of aquaculture. From a business point of view there needs to be further research to inform the decision to develop RAS for salmon farming in Ireland. The NSPA does target a 30% increase in production derived from recirculating aquaculture systems (albeit from a very low base) for both finfish and shellfish production across freshwater and saltwater environments.

The NSPA sufficiently addresses the issues raised at strategic level. There are no changes to the NSPA.

5.19 Salmon farming

5.19.1 Issues raised

There was a wide range of responses relating to salmon farming, its potential for development, its contribution to rural communities, conflicts with the natural environment and tourism, and farming methods. There are concerns about pollution, escapes and impacts with wild stocks, use of chemicals and disease risks. Some respondents made an all-out call for the cessation of salmon farming or identified particular areas where they felt licences should be revoked. In relation to offshore salmon farming various submissions queried the scaling and phasing proposals.

5.19.2 Response

The NSPA and SEA Environmental Report address all the main issues associated with salmon farming in Ireland and internationally. Comments about individual licences are outside of the scope of the NSPA as it is a high level strategic plan.

The sector analysis report on salmon farming in Ireland in Chapter 3 of the NSPA shows how small the sector is here compared to other countries and the high standards achieved by the sector through organic and other accreditations. Ireland is the main organic salmon producer in Europe and first in quantity with over 80% of its total production certified Organic. These high standards will continue to be supported in the implementation of the NSPA.

The licensing process for all aquaculture in Ireland is extremely rigorous as described in Chapter 8 of the NSPA and Chapter 3.2 of the Environmental Report and assessed across the various environmental topics. The licensing process ensures that only the best planned proposals which are suited to the location and environment for which they are proposed are actually licensed. The licensing process requires both an EIA and AA. Once operational there are an array of monitoring and reporting requirements to adhere to.

The NSPA will provide additional opportunities to improve salmon farming planning and operation through the implementation of a range of the Policy areas, particularly Knowledge, Innovation and Technology.

A number of submissions queried the applicability of the limits proposed to *a)* other species and *b)* one-off novel or new technological developments. The Marine Institute was asked to provide advice on appropriate scaling and phasing of the development of individual offshore salmon farms in the period to 2020. The advice provided considered the defined time-frame of the plan and, within this context, the cage technology currently employed by the Irish industry. If developments for other species and/or using significantly new/novel technologies were to be considered during the lifetime of the plan the applicability of the limits may need to be considered. The advice provided makes reference to the need for a review(s) of the thresholds.

The advice provided does not favour offshore salmon farming over more sheltered sites.

The setting of limits of 5,000 tonnes, and a potential for licensing additional tonnage up to a max of 7,000 tonnes, is not intended to provide a “one size fits all” solution. Site assessment and consideration of appropriate scale will continue to be a requirement for potential developers, via the site investigation process and EIS requirements. The suitability and scale of individual sites, subject to the advised limits, will continue to be subject to rigorous assessment during the licence

determination process; taking into consideration all of the appropriate national and European legislative requirements; including Natura legislation, Water Framework Directive and MSFD requirements.

During the EIA and licensing process interactions between sites is taken into consideration. Assessment of whether sites are considered as 'individual' is based on consideration of factors such as potential disease transfer; nutrient and particle loadings, transfer and interrelationships between sites; and the potential for cumulative impacts.

There is no evidence to support the contention of "*considerable environmental impacts*" from existing salmon farms in Ireland. Specifically, there is no evidence, based on current monitoring, that areas in which salmon farming takes place in Irish waters are currently subject to eutrophication. Full consideration of all potential pressures and impacts is undertaken during the EIA process and licensed sites are subject to monitoring conditions and protocols (e.g. benthic, water column and sea lice) as discussed within the NSPA Environmental Report.

One submission suggested that any increase in biomass beyond the initial limit should be treated as a totally separate application with all of the associated statutory consultations and reviews. Within the Ensuring Sustainability Policy Area the Marine Institute has included detailed scale limits and phasing recommendations. In particular:

3. *Following establishment of a farm, permission for additional tonnage beyond the initial licensed peak biomass may be sought, subject to a total maximum of 7,000 tonnes (peak biomass). Such a request could be considered subject to the following:*

   (a) *The EIS accompanying the licence application shall include all of the relevant information to describe the physical characteristics of the project, the production processes, expected residues and emissions and the likely significant effects of the proposed project through the various phases.*

   (b) *The phasing and timing for permission to scale-up beyond the initial allowable biomass should be set at the licensing stage, taking into consideration, for example, site characteristics, stocking strategies and production cycle issues.*

   (c) *Approval to increase the capacity above the initial allowable biomass should only be considered following a rigorous assessment of monitoring outcomes.*

   (d) *Monitoring requirements should be included as a licence condition.*

The existing licensing framework can accommodate such an approach, rather than there being a need to submit a separate application with the attendant consultation and review.

The NSPA sufficiently addresses the issues raised at strategic level. No changes have been made to the NSPA.

5.20 Sea lice

5.20.1 Issues raised

Many of the issues raised were related to concerns about the environmental impacts of sea lice, such as conservation of wild salmon and sea trout stocks and the effect of reduced numbers of migrating salmonids on the life cycle of the Freshwater Pearl Mussel. Suggestions were made for specific farm-scale operational procedures, and requests for further research. There was an opinion that the NSPA did not deal sufficiently with the Sea Lice issues and suggestions of an over-reliance on a study by the Marine Institute.

5.20.2 Response

The issues relating to Sea Lice and Salmon Farming are covered both in the NSPA (Chapter 5 & 8) and in the Environmental Report (Chp 3, 6, 7 and 10, in particular 7.3.2.3 and 10.3.1.5). The study carried out by the Marine Institute concluded that in proximity to aquaculture there exists only a minor and irregular influence on marine mortality for wild salmon indicating that sea lice are unlikely to be a significant factor influencing conservation status of wild salmon in Ireland (Jackson et al 2013). This paper is quoted as it is an up to date study covering several salmon rivers over a nine year period.

The Environmental Report quotes from the EU Pilot Case 764/09/ENV1 which has found that *'Based on the evidence from the peer reviewed studies, the information collected as part of the National Sea Lice Monitoring and Control Programme, the scientific reports published by the Marine Institute, the National Parks and Wildlife and international experts, and in-line with expert advice provided by several Government Departments and agencies the authors concluded that there was a robust and effective management programme in place to control sea lice infestation on farmed fish, and that there was no evidence to support any suggestion that the three named fisheries were being adversely affected by unusual levels of sea lice infestations, whether of farmed origin or from other source…. The studies on the impacts of lice infestations on smolts suggest that* ***while sea lice induced mortality on outwardly migrating smolts can be significant, it is a minor and irregular component of marine mortality in the stocks studied and is unlikely to be a significant factor influencing conservation status of salmon stock****… This conclusion is further supported by the findings of Jackson* et al. *(2013b) which found* ***no correlation between the presence of aquaculture and the performance of adjacent wild salmon stocks.****'* On the 11th of October 2012 the complaint was closed in favour of the State.

Given the high level strategic focus of the NSPA it is not appropriate to address operations at farm level. Licensing for salmon farms requires assessments of site suitability, EIA and AA. Any cumulative impacts that have not been addressed within the SEA/AA of the NSPA are outside the scope of these assessments and need to be addressed in site specific assessments in the consideration of aquaculture licence applications and renewals. It is however important to re-iterate that Ireland has a state-of-the-art sea lice monitoring and management programme in place in the form of the National Integrated Pest Control Plan. This maintains a precautionary approach to managing the sea lice issue. This management approach is considered to be more advanced that those operated in other jurisdictions for a number of reasons including the fact that the inspection regime is totally independent of the industry and that the trigger treatment levels are set at a low level.

The NSPA sufficiently addresses the issues raised at strategic level. No changes have been made to the NSPA.

5.21 Tourism

5.21.1 Issues raised

There are differing views from the respondents regarding the place of aquaculture alongside tourism in Ireland with concerns about potentially negative effects, suggestions for positive synergies between aquaculture and tourism and a potential navigational and safety hazard.

5.21.2 Response

There are differing views from the respondents regarding the place of aquaculture alongside tourism in Ireland. While there is no empirical evidence regarding the detrimental effect of aquaculture on marine tourism and leisure activities, careful planning and site selection is the single biggest factor in ensuring that any potential negative effects are minimised. Examples exist globally of aquaculture taking place adjacent to recreational / tourism activities, and where carefully and responsibly managed the aquaculture activity has no negative impacts. It can even enhance the leisure experience, e.g. providing information about the fish farm or being able to sample local aquaculture produce in a nearby restaurant. This had been the case in the recent collaboration between BIM and Failte Ireland on the "Taste the Atlantic" project. The project will continue in the coming year, extending along the length of the Wild Atlantic Way. The synergies of aquaculture and tourism have been evident in Ireland with the longest running seafood festival The Galway Oyster Festival one example of this point. Further evidence of the vital link between aquaculture and tourism is from local community festivals based around aquaculture products for example The Connemara Mussel Festival, The Carlingford Oyster Festival and The Clarinbridge Oyster Festival to name but a few. The commitment by the NSPA to engage and participate fully in Marine Spatial Planning initiatives as they are developed in Ireland will help to address potential conflicts between aquaculture and tourism and indeed identify opportunities for co-operation and growth.

The following text has been added to the NSPA. The NSPA policy actions sufficiently address the issues raised at strategic level.

The synergies of aquaculture and tourism have been evident in Ireland with the longest running seafood festival The Galway Oyster Festival one example of this point. BIM are delighted to be a sponsor once again for the 2015 Festival. One of the main attractions for visitors has been the experience to taste Irish farmed oysters from numerous bays around the country highlighting the diversity in tastes so much sought after by tourists looking for a unique taste experience.

More recently BIM working in conjunction with the Failte Ireland have further capitalised on the synergy of tourism and aquaculture. The recent success of the Taste of the Atlantic – A Seafood Journey is comprised mainly of experiences with aquaculture producers. http://www.wildatlanticway.com/stories/food/bay-coast-seafood-trail/

This includes a chance to visit mussel and oyster farms. In addition to this tourists can also learn about the production of Irish organic salmon and experience the smoking of this much sought after product. While this initiative began in 2015 already the feedback from both producers and tourists

has been extremely positive and plans to extend the Trail all along the Wild Atlantic Way are already in progress.

Further evidence of the vital link between aquaculture and tourism is from local community festivals based around aquaculture products for example The Connemara Mussel Festival, The Carlingford Oyster Festival and The Clarenbridge Oyster Festival to name but a few. Coupled with this more and more aquaculture producers are providing tours of their facilities coupled with a tasting of the product due to the demand from tourists.

5.22 Fishing

5.22.1 Issues Raised

The issues raised, such as drift net fishing, organisation of producer groups and access to the Irish Lobster fishery, are outside of the scope of the NSPA and associated SEA and AA.

5.23 Conclusion

It is clear from this section that there are a number of concerns about the potential impacts of aquaculture. The response to the submissions received is intended to provide additional clarification and reassurance. For the most part the issues raised in the submissions are dependent on site selection for the culture type and species proposed. Given the fact that these issues are linked to project scale implementation, many of the submissions received are outside of the scope of the NSPA due to it being a high level strategic plan without a spatial focus. However, it is important to reiterate that the aquaculture licensing process and its associated monitoring and enforcement address these issues on a case by case basis also taking into account the cumulative effects and through the implementation of the NSPA this process will be strengthened and better informed.

6.0 Influence of the SEA during preparation of the NSPA

6.1 Introduction

Overall, the Environmental Assessment of the NSPA against the environmental topics identified in this SEA concluded that the policy actions are expected to have a long term positive effect on the environment and on the development of a socially, economically and environmentally sustainable aquaculture sector in Ireland that depends directly on a high quality environment, thus fulfilling both the EU requirements of sustainable growth of the seafood sector and conservation of the environment.

The SEA process had a strong influence on the preparation of the National Strategic Plan for Sustainable Aquaculture Development. At an early stage in the process the establishment of the Environmental Objectives upon which to carry out the assessment helped to bring the key environmental issues to the fore in the development of the plan actions.

6.2 Influence of the SEA: Shaping the NSPA Post Scoping

The NSPA was initially compiled using a structure provided in Com (2013)229 final, having four priority areas upon which to base a range of policy actions and targets. However, following Scoping Consultation and taking into account the unique set of circumstances that shape how the aquaculture sector in Ireland currently operates, it was decided that the NSPA would be structured slightly differently, having five priority areas and a much stronger focus on clearing the licensing backlog and further development of sustainable management structures to improve governance and operations into the future. The five priority areas each have a number of actions as listed below. These five priority areas and corresponding actions still meet with the requirements of the European Guidelines, but are tailored to the Irish context. Furthermore, the inclusion of the Guiding Principles for the Sustainable Development of Aquaculture within the Ensuring Sustainability Priority Area further strengthens the sustainability commitment at a governance level. This is illustrated by Table 6 below showing the original proposed Policy areas and Actions alongside the Policy Areas and Actions that were eventually assessed in the SEA Environmental Report. From this is it clear to see that a much greater emphasis was placed upon improved environmental performance of the sector and mechanisms to achieve this.

Table 6

Original Proposed NSPA (SEA Scoping stage)	Final NSPA (re-worked post-scoping)
Building Capacity: National Growth Objectives The policy basis for the National Growth Objectives is set out in Food Harvest 2020. • An increase of 10,000 tonnes of production in marine finfish at offshore locations • An increase in conventional aquaculture annual production capacity of 10,000 tonnes of finfish, shellfish and seaweed in marine and freshwater sectors o Promote the development and expansion of traditional aquaculture species with particular emphasis on those species with real commercial potential. Current market demand cannot be met by the present production level o Promote the diversification of new species. o Expand the farming of edible seaweed and other seaweeds for use in areas such as functional foods, animal feed supplements, nutraceuticals and horticulture	**Aiming for Growth** 1. Build capacity and scale in the industry 2. Dedicated supports to new entrants to the sector 3. Support organic certification of aquaculture production 4. Aid shellfish producers significantly affected by biotoxin closures

Enhancing Competitiveness • To establish a Capacity Building Scheme to support Growth in Existing Species and Productive Investments in Aquaculture • To establish a Knowledge, Innovation and Technology Scheme to support Research, to acquire new knowledge for Technology Development and Novel Species • Animal Health and Welfare- Development of Best practice with regard to animal health and welfare	**Knowledge, Innovation and Technology** 5. Foster knowledge, innovation and technology transfer. 6. Enhance the skills base to foster a knowledge economy. 7. Provision of expert advice to improve environmental and business performance and enhanced strategic planning by aquaculture enterprises. 8. Support best husbandry and disease management practice. 9. Applied research and collaborations between industry, scientific and development bodies. 10. Development of commercial scale growing systems for novel species.
Sustainable Development and Co-ordinated Spatial Planning • To participate in Marine Spatial Planning initiatives at the appropriate levels of governance and facilitate industry engagement as a key stakeholder. • Develop constraints and opportunities mapping for aquaculture **Exploiting Competitive Advantage** • Aquaculture organic and environmental management programme under articles 53 and 54 of the EMFF - Support for organic farmers and aquaculture providing environmental services • BIM to continue to provide support to aquaculture operators to attain and retain various quality, environmental and organic schemes available for their produce. This includes remaining alert to new and emerging schemes at global down to local scales. • BIM to continue to support and facilitate the CLAMS initiative (as per 2(b)(2)) and use it as a platform for local scale communication on aquaculture related	**Ensuring Sustainability** 11. Application of Guiding Principles for the Sustainable Development of Aquaculture. 12. Application of scale limits and phasing in relation to the development of individual offshore salmon farms. 13. Development of an industry Code of Practice for Invasive Alien Species. 14. Continuation of Invasive Species Ireland Project in relation to aquaculture. 15. Quantify the environmental contribution of aquaculture. 16. Ensure that aquaculture monitoring is consistent with the requirements of the Marine Strategy Framework Directive. **Coordinated Spatial Planning** 17. Develop opportunities and constraints mapping for aquaculture taking specific account of environmental issues, Natura 2000 sites and inshore fisheries. 18. Identify marine tourism opportunities from aquaculture. 19. Study on integrated multi-trophic aquaculture and possible synergies with offshore wind farms or other marine renewable energy.

issues. • BIM supported by DAFM, its agencies (and other departments) to develop a targeted communications campaign on a range of aquaculture related issues with the aim of sustainable aquaculture being widely accepted as part of Irelands Environment.	20. Study on how aquaculture contributes to communities in rural areas.
Aquaculture and Administration • Reduce the administrative burden on aquaculture businesses through the adoption of best practice provisions for complying with environmental legislation • Improved data management and online access to aquaculture licensing information • Development of online aquaculture licence application and tracking system • DAFM will continue to administer and further develop and streamline evidence based licensing regime, which demonstrably achieves compliance with all of the binding national and EU-derived legislation relevant to the sector. • Further develop the CLAMS process to improve stakeholder engagement in aquaculture development and operation • Integration of CLAMS with FLAGS initiatives at national level and at local level to improve awareness and appreciation of the Irish Seafood Sector.	**Aquaculture Licensing** 21. Progressively remove the current aquaculture licensing backlog. 22. Review and revision of the aquaculture licensing process, including the applicable legal framework. 23. In the context of a reviewed process and revised legal framework, consider the phased introduction of appropriate timescales for licence determination. 24. Develop a data management and information system with online aquaculture licence application and tracking functionality and spatial mapping of aquaculture sites and exclusion areas.

Due to the emphasis that was placed on development of the plan post scoping, the NSPA became more focused on environmental performance of the sector at this stage in the SEA process. Building upon existing governance and decision making structures, the Environmental Assessment of the NSPA concluded that the policy actions have a long term positive effect on the development of a socially, economically and environmentally sustainable aquaculture sector in Ireland that depends directly on a high quality environment, thus fulfilling both the EU requirements of sustainable growth of the seafood sector and conservation of the environment.

6.3 Influence of the SEA: Consultation

Issues raised during the consultation process are outlined in Section 5 of the SEA Statement. Many of the issues were outside of the scope of the NSPA and a large proportion of these were issues for consideration at project level (i.e. licensing scale) rather than at the strategic scale of the plan. Because the NSPA is itself a sustainable development plan, the rationale behind all of the policy areas and actions is to improve the environmental performance of the sector from planning and decision making through to operation and future development. Without a defined spatial or species scale focus it is not possible to change the plan to address many of the concerns raised which relate to project scale development and operation. The Environmental Assessment of the plan found that the implementation of the NSPA was expected to have a long term positive effect on the environment at the scale at which it has been developed. It will result in the development of a socially, economically and environmentally sustainable aquaculture sector that depends directly on a high quality environment, thus fulfilling both the EU requirements of sustainable growth of the seafood sector and conservation of the environment.

Changes were made to the Appropriate Assessment and addendums were added to the Environmental Report.

6.4 Influence of the SEA: Implementation

As a high level strategic plan with sustainability as a fundamental component, the NSPA environmental assessment has been shown to have an overall long term positive impact on the environment. This is because sustainability is at the very centre of the plan vision and the plan itself, in its entirety, is a mitigation measure to improve environmental performance and reduce negative impacts. While the overarching priority areas and actions set out in the NSPA have not changed following the publication of the Environmental Report, the implementation of the NSPA does present opportunities to further address the potential impacts predicted by the Environmental Assessment and concerns raised during the SEA consultation process.

6.5 Influence of the SEA: Monitoring

The proposed monitoring for the implementation of the NSPA is detailed in Chapter 9 of this document. The collation of the monitoring data will inform DAFM about the actual environmental impact of the implementation of the NSPA. Should additional or unforeseen adverse effects arise these can be addressed, at an early stage, through remedial action. Monitoring will also help to address many of the concerns raised during the consultation on the NSPA and its Environmental Report.

7.0 Preferred Scenario and Reasons for Choosing the NSPA as adopted

7.1 Introduction

The Environmental Assessment carried out in accordance with the SEA Directive is required to evaluate the likely significant effects on the environment of implementing the plan and reasonable alternatives taking into account the objectives and the geographical scope of the plan. Annex 1 (h). Article 9 of the SEA Directive requires that a statement shall be prepared providing information on the reasons for choosing the plan as adopted, in light of other reasonable alternatives.

The Environmental Assessment of the NSPA deals specifically with the likely significant effects on the environment resulting from the implementation of the plan which is an overall plan for the future sustainable development of aquaculture in Ireland. The NSPA does not address issues related to individual projects and therefore does not have a spatial focus.

The consideration of alternatives for the NSPA was challenging due to the fact that specific requirements for the plan were set out by the European Commission in Com 229(2013) providing little flexibility by way of setting alternatives. The NSPA must be submitted to the European Commission in order to achieve legal compliance with the Common Fisheries Policy and EMFF Regulations. Since Ireland is required by EU law to develop and implement a National Strategic Plan for Aquaculture, the often used alternative of "no plan" was not a reasonable alternative for assessment in this instance.

After much consideration the reasonable alternatives chosen for consideration related to the governance and drivers of the plan which could result in different outcomes for its implementation.

Implementation of the NSPA can be achieved through leading from three different sectors:

1 Government: Purely driven by government policy with no reference to market demands or requirements if individual producers.

2. Research and Development (R&D): focuses primarily on technical developments without reference to the requirements of the market, industry or government policy.

3. Market: exclusively driven by private sector demands with no application of government policy or technical developments

7.2 Alternative 1: Government led Implementation

This approach was assessed to have an overall negative impact on the environment because of its inability to support the environmental objectives set out for population, water, soils/sediment, climate and cultural heritage. The population objective would not be met because there would be reduced impetus behind sector development in the absence of market drive. The remaining environmental topics would require ongoing R&D to support their objectives. A purely government led approach could lead to dissociation between market demands and trends, technological innovations and industry needs. This could lead to Ireland's aquaculture sector loosing national and international market share and eventually a decline in production thus being counterproductive to the EU legislative requirement of growth in the sector.

7.3 Alternative 2: R&D Led Implementation

Similar to the government led approach the purely R&D focused alternative for implementation of the NSPA was also assessed to have an overall negative impact on the environmental because of its inability to support the environmental objectives set out for population, water, soils/sediment, climate and cultural heritage. There would be a loss of co-ordination and a compartmentalised approach to implementation in this instance and a risk of a reduced impetus behind sector development in favour of focusing solely on innovations in technology and latest research.

7.4 Alternative 3: Market Led Implementation

A purely Market led approach while achieving the objective of growth would not necessarily deliver sustainable growth. It was assessed to have a negative impact because of its inability to support the environmental objectives set out for Biodiversity, Water, Soil/Sediment, Climate, and Cultural Heritage. A purely market led approach could initially lead to increased production. However, if not coupled with governmental guidance regarding regulatory developments and changes, the sector could find itself operating outside legal requirements. Should this occur, a general halt in operations could be enforced leading to a breakdown of aquaculture production. If a market led approach proceeded unconnected to research and development, production methods could become outdated, development in the rearing of novel species could be overlooked thus reducing Ireland's ability to retain a strong foothold on the international seafood market. In addition, the industry may lose out on environmental innovations supporting the industry in 'green' production.

7.5 Preferred Scenario: Market led with strong guidance

Following assessment a fourth alternative emerged. It was concluded that a combination approach was most suited to the overall sustainable development of the Aquaculture Sector in Ireland. This is a **market led approach linked to strong guidance from both government and R&D**. The Assessment of this approach against the environmental objectives set out for the SEA resulted in an overall strong positive impact

The reason why this alternative was chosen is because it has been evaluated to be the only alternative that can lead to an improvement that addresses the priorities set out in Com229(2013) final achieving better management of aquaculture administration from individual to government level and supporting sustainability initiatives. This approach will help deliver all the policy actions to maximum effect leading to best outcomes across all aspects of the draft plan. Delivering a robust administrative system for the future growth of the aquaculture industry will provide a secure base for the efficient translation of the policy actions into reality. The economically, socially and environmentally sustainable growth of the aquaculture industry in Ireland relies on a concerted effort by all stakeholders to advance the development of the sector in harmony with latest research and development across all aspects, from nature conservation via technology innovation to education and management improvements. The other alternatives whilst actually contributing positively to the existing situation to some extent do not contribute to the overall sustainable growth of the aquaculture sector as envisaged by the EU Commissions Blue Growth Strategy.

8.0 Measures to Monitor Potential Significant Environmental Effects of the Implementation of the NSPA

8.1 Introduction

Article 10 of the SEA Directive requires that monitoring be carried out in order to identify, at an early stage, any unforeseen adverse effects due to the implementation of the Plan or Programme, and to be able to take remedial action. Monitoring is carried out by reporting on a set of indicators, which enable positive and negative impacts on the environment to be measured. The environmental targets and indicators or relevance to the NSPA were identified from the SEA process. They will be used to identify unforeseen adverse effects from the implementation of the NSPA.

8.2 Responsibility for Monitoring

Monitoring of the NSPA will for the most part be carried out by DAFM and its agencies, Bord Iascaigh Mhara, the Sea Fisheries Protection Authority and the Marine Institute. The Environmental Protection Agency, Central Statistics Office, National Parks and Wildlife Service and local authorities will also collect some of the relevant data as per their own procedures. Compilation of the monitoring data will be carried out by DAFM.

8.3 Sources of information for Monitoring

Monitoring will focus on aspects of the environment that are likely to be significantly impacted by the implementation of the NSPA. As the NSPA is a high level strategic plan, in reality any potential impacts on the environmental will occur only at project level implementation. However, it is envisaged that the implementation of the plan will deliver improved communication and joined up working, more efficient administration and additional checks and balances to ensure that the development and operation of the aquaculture sector in Ireland is undertaken in a responsible and sustainable manner.

Where possible, indicators have been chosen based upon the availability of the necessary information and the degree to which the data will allow the target to be linked directly with the implementation of the Plan. A wealth of information is already available from existing monitoring carried out by DAFM and its agencies. There is an opportunity through the implementation of the NSPA to draw this data together in a meaningful and useful format to help assess and detect at an early stage any adverse effects of Ireland's Aquaculture Development on the environment.

Objectives	Targets	Indicators	Monitoring
Objective 1 **BIODIVERSITY, FLORA & FAUNA** **Protect and prevent damage to biodiversity, particularly EU designated sites and protected species by the aquaculture sector.**	All aquaculture operations both existing and new are assessed for compliance with Article 6 of the Habitats Directive. Existing and new aquaculture operations contribute positively to the management of protected areas.	*Number of AAs completed.* *Aquaculture sector involvement in national MSP structures.* *Voluntary initiatives by the aquaculture sector*	Marine Institute, annually BIM, annually
	Aquaculture does not contribute to detrimental changes to populations of Annex II or Annex IV species as defined under the Habitats Directive, priority bird species as defined under the Birds Directive, or Red List Species.	*Number of AAs completed for aquaculture licences.* *Voluntary initiatives by the aquaculture sector to support species conservation.*	Marine Institute, annually BIM, annually
	Promote opportunities for the aquaculture sector to learn about and take appropriate action to reduce the risks of Invasive Species introduction and spread, of species both impacting upon and impacted by existing and new operations in line with MSFD targets.	No increase in the geographical spread of Alien Species in Ireland as documented by the National Invasive Species Database from Invasive Species Ireland (joint project between NPWS and NIEA) associated with aquaculture. This database is not being undertaken at present but should it resume this target can be addressed. *Voluntary risk assessments carried out by the aquaculture sector* *Research and monitoring supported by the aquaculture sector (trials).*	Invasive Species Ireland Project BIM, annually BIM, annually
	To maintain and improve control trends in Sea lice Management by the aquaculture sector.	National Sea lice Monitoring Programme: objective measurement of farm infestation levels and Sea lice levels exceeding thresholds. Support for Implementation of Sea lice control and management strategy through five principle components: • Separation of generations; • Annual fallowing of sites; • Early harvest of two-sea-winter fish; • Targeted treatment regimens including synchronous treatments; • Agreed husbandry practices. *Initiatives / studies carried out to improve understanding*	Marine Institute Sea lice Monitoring Programme, annually BIM as part of EMFF measures, annually

Objectives	Targets	Indicators	Monitoring
		and minimise impacts	
	Promote opportunities to improve escape management planning so that aquaculture escapes are minimised and no major escape incidents occur.	Escapes reporting & detection *Number of projects to upgrade aquaculture structures and introduce technology transfer in line with best international practice.* *Research and monitoring supported by the aquaculture sector (trials)*	DAFM BIM as part of EMFF measures, annually BIM as part of EMFF measures, annually
Objective 2 **POPULATION** **Contribute to sustainable development in areas that operate aquaculture.**	Promote opportunities to provide additional employment in coastal communities arising from sustainable aquaculture development and its supporting sectors.	Number of jobs sourced from aquaculture.	Data gathered through BIM, Central Statistics Office and SEMRU NUI Galway as available, annually.
	Promote and facilitate the aquaculture sector to adopt Environmental Management Systems and achieve certification to environmental standards as appropriate increasing the percentage of certified aquaculture products.	*Number of aquaculture operators participating in Co-ordinated Local Aquaculture Management Systems (C.L.A.M.S.) and other responsible production schemes such as Organic Certification, ISO accredited quality and Eco-schemes, Environmental Code of Practice for Irish Aquaculture Companies and Traders (ECOPACT), MSC, ASC, Origin Green and any other emerging schemes.*	BIM, annually
	Promote and facilitate the aquaculture sector to adopt Environmental Management Systems and achieve certification to environmental standards as appropriate increasing the percentage of certified aquaculture products.	*Number of aquaculture operators participating in Co-ordinated Local Aquaculture Management Systems (C.L.A.M.S.) and other responsible production schemes such as Organic Certification, ISO accredited quality and Eco-schemes, Environmental Code of Practice for Irish Aquaculture Companies and Traders (ECOPACT), MSC, ASC, Origin Green and any other emerging schemes.*	BIM, annually
	Promote opportunities to support the aquaculture sector in Ireland to become more self-sustainable in relation to seed and feed.	*Increased availability of hatchery seed sourced in Ireland.* *Research and monitoring supported by the sector (trials).*	BIM as part of EMFF measures, annually BIM as part of EMFF measures, annually

Objectives	Targets	Indicators	Monitoring
	Provide support to maintain and improve the quality of designated Shellfish Waters and retention and improvement of management regime when integrated with WFD.	Shellfish water classifications: Areas classified and classification results.	SFPA annually
Objective 3 HUMAN HEALTH All Irish aquaculture products reach the highest standards in safety and traceability	All aquaculture products from Ireland are clean, safe and traceable.	Shellfish Water classifications Effectiveness of Biotoxin Monitoring Programme. MI residue monitoring MSFD Fish and Shellfish contamination descriptor	SFPA Marine Institute Marine Institute EPA
	Support initiatives to increase the domestic consumption of safe and healthy Irish aquaculture products.	Bord Bia figures on seafood consumption by aquaculture species in Ireland Supporting Bord Bia in promotional work	Bord Bia, as per own procedure BIM, annually
Objective 4 **WATER** **Prevent deterioration of the status of water bodies, as appropriate to the Water Framework Directive and the Marine Strategy Framework Directive by supporting the aquaculture sector.**	No deterioration in status of waters currently with high or good status (WFD Objective) arising from existing or new aquaculture operations.	Water Column Monitoring Results for marine finfish farms / Water Column Monitoring compliance levels. Discharge licence compliance levels (surface water Regulations S.I. 272 of 2009).	Marine Institute, as per own procedure Relevant County Councils, as per own procedure
	No recordable change to Marine Strategy Framework Directive (MSFD) Good Environmental Status attributable to aquaculture operations.	Ireland 2013 MSFD Initial Assessment Reporting and all future reporting. No change in status of any MSFD descriptor attributable to aquaculture	EPA, as per own procedure EPA, as per own procedure
	Promote opportunities within the aquaculture sector to support initiatives which aim to restore an improve MSFD and WFD status.	*New knowledge obtained on ecosystem services provided by shellfish and seaweed cultivation.* *CLAMS membership.* *Use of Environmental Management Systems and*	BIM as part of EMFF measures, annually? BIM, annually BIM, annually

Objectives	Targets	Indicators	Monitoring
		certification to eco-standards.	
Objective 5 **SOIL / SEDIMENT** **Avoid damage to the overall function and quality of the soil resource on land and under water by supporting the aquaculture sector.**	Aquaculture does not contribute to changes in long term / widespread natural functionality of river and marine sediments resulting in a change to MSFD GES for seafloor integrity.	Benthic Monitoring Programme undertaken by the Marine Institute.	Marine Institute, as per own procedure
	Aquaculture sector adopts responsible and where appropriate collaborative measures to minimise sedimentary changes / compaction.	*CLAMS initiatives, SUMS.* *Number of shared foreshore access routes in operation.*	BIM, annually DAFM
Objective 6 **CLIMATE** **Aquaculture sector to contribute proactively to mitigation of, and adaption to climate change.**	Support for the adoption of Best Available Technology in aquaculture operations including renewable energy to minimise greenhouse gas emissions.	*Number of projects to upgrade aquaculture equipment and introduce technology transfer in line with best international practice in fuel and energy management.*	BIM as part of EMFF measures, annually
	Support provided for carbon footprint assessments of aquaculture sites and products via EMS and certification to relevant environmental standards.	*Research and monitoring supported by the aquaculture sector (trials).* N*umber of aquaculture operators participating in EMS and certified to Eco-standards.*	BIM as part of EMFF measures, annually BIM, annually
	Support for the adoption of Best Available Technology in aquaculture operations to assist with climate change adaptation.	*Number of projects to upgrade aquaculture equipment and introduce technology transfer in line with best international practice in site management.*	BIM as part of EMFF measures, annually

9.0 Addendum to the Environmental Report

9.1 Introduction

This is the addendum to the Environmental Report for the NSPA. The purpose of this chapter is to provide clarification and additional information: following requests and comments in submissions received during the consultation period on the draft National Strategic Plan for Aquaculture and its Environmental Report and; to identify where the Environmental Report has been updated in response to submissions received during the public consultation period.

It should be noted that the clarifications and additional text provided in this document supplements and should be read in conjunction with the original Environmental Report. The additional information is shown in BLUE TEXT. It is provided in order to increase the usefulness of the document for the reader. The chapter number is stated and where appropriate for ease of reading, the original text from the documents is also included.

As the changes made do not alter to outcome of the assessment provided in the Environmental Report, it is not necessary to amend the conclusions of Environmental Report as published. The changes are listed below in the order that they would appear in the Environmental Report.

It should be noted that changes to the Appropriate Assessment have been included in the final assessment and therefore it is not necessary to list them here.

9.2 Amendments

6.2.3.2 Food Harvest 2020

Foodwise 2025

Food Wise 2025 sets out a cohesive, strategic plan for the development of agri-food sector over the next decade. The Agri Food Strategy Committee has identified opportunities arising as a result of significant population growth and greater access to international markets. In addition, the Committee recognises that the increased pressure on global agricultural resources and the environment will offer potential further growth opportunity for the Irish agri-food and fisheries sector.

The long-term vision as set out in the Report is of 'Local Roots Global Reach' based on the continued development of the sector where efficient and environmentally-friendly production delivers sustainable export growth on global markets.

On the basis of available data and by taking the actions identified in the Report, the Committee has set the following growth projections, which it believes are achievable by 2025:

- Increasing the value of agri-food exports by 85% to €19 billion.
- Increasing value added in the agri-food, fisheries and wood products sector by 70% to in excess of €13 billion.
- Increasing the value of Primary Production by 65% to almost €10 billion

- The creation of an additional 23,000 direct jobs in the agri-food sector all along the supply chain from primary production to high valued added product development.

To achieve the projections set out above, Food Wise 2025 identifies over 350 recommendations to achieve sustainable growth and these will require a concerted and coordinated approach by primary producers, industry, Departments and State agencies.

http://www.agriculture.gov.ie/foodwise2025/

7.0 Baseline Environment

To date 24 cetacean species have been recorded in Irish waters (Berrow, 2001) with some of these breeding, including Common Dolphin *(Delphinus delphis),* Harbour Porpoise *(Phocoena phocoena)* and Bottlenose Dolphin *(Tursiops truncatus)* among others. Under the Habitats Directive these two last species, Bottlenose Dolphin and Harbour Porpoise are Annex II species whose conservation requires the designation of Special Areas of Conservation (SACs).

Key factors in cetacean distribution are availability and distribution of prey, while water temperature and the North Atlantic drift also play an important role. Cetacean species that have been confirmed to breed in Irish waters include:

- Bottlenose dolphin *(Tursiops truncatus),* found in all coastal waters around Ireland with semi-resident group at the mouth of Cork harbour;
- Common dolphin *(Delphinus delphis),* present in all Irish coastal waters with greatest abundance off the south and southwest coasts;
- Harbour porpoise *(Phocoena phocoena)*, present in all Irish coastal wasters but most abundant in the Irish Sea and off the south and southwest coast of Ireland;
- Risso's dolphin *(Grampus griseus)*, present in all Irish coastal waters and can be regularly observed inshore and in bays along the southwest and southeast coasts;
- White-beaked dolphin *(Lagenorhynchus albirostris)*, offshore species rarely foud in shallow water close to the coast;
- White sided dolphin *(Lagenorhynchus acutus)*, can be seen inshore off the northwest coast in late summer and autumn, also occurs occasionally in the Irish Sea, highest abundance along the edge of the continental shelf, and also in deeper waters; and
- Pilot whale *(Globicephala melas)*, mainly found in deep water off the continental shelf.

Other species may also breed here, e.g.:

- Cuvier's beaked whale *(Ziphius cavirostris),* deep water species occurring off the Atlantic continental shelf; and
- Killer whale *(Orcinus orca),* can be observed off all Irish coasts mainly from offshore island with inshore sightings more frequent during late summer and autumn.

Species that migrate annually along the western seaboard or feed year-round in waters along the south coast and shelf slopes and are not known to breed in Irish waters include:

- Fin whale *(Balaenoptera physalus)*, can be observed inshore mainly off the south and southwest coast;
- Humpback whale *(Megaptera novaeangliae)*, can be found mainly off the south and southeast coast of Ireland;
- Minke whale (*Balaenoptera acutorostrata),* most commonly found off the south and southwest coast of Ireland ; and
- Sperm whale *(Physeter macrocephalus)*, occurs in deep water off the continental shelf.

Other species such as the blue whale *(Balaenoptera musculus)* may over-winter in waters south of Ireland. (DCENR 2015)

The following maps were taken from the Irish Offshore Strategic Environmental Assessment (IOSEA) 5, DCENR 2015 and present information on toothed whale sightings, baleen whale sightings, grey seal breeding sites, harbour seal sites and marine turtle records for Ireland and the UK.

F

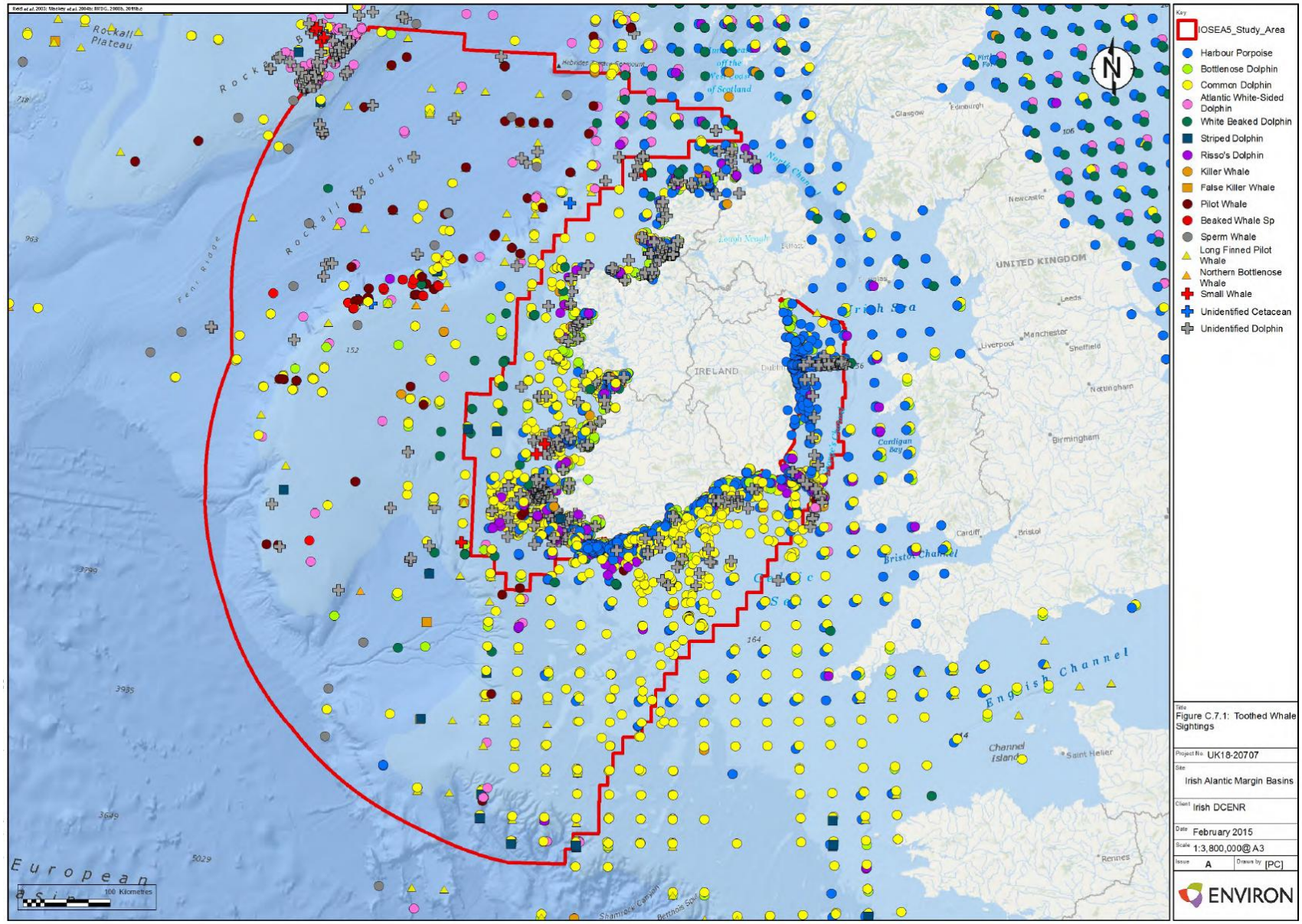


Figure 7.0a: Toothed whale sightings

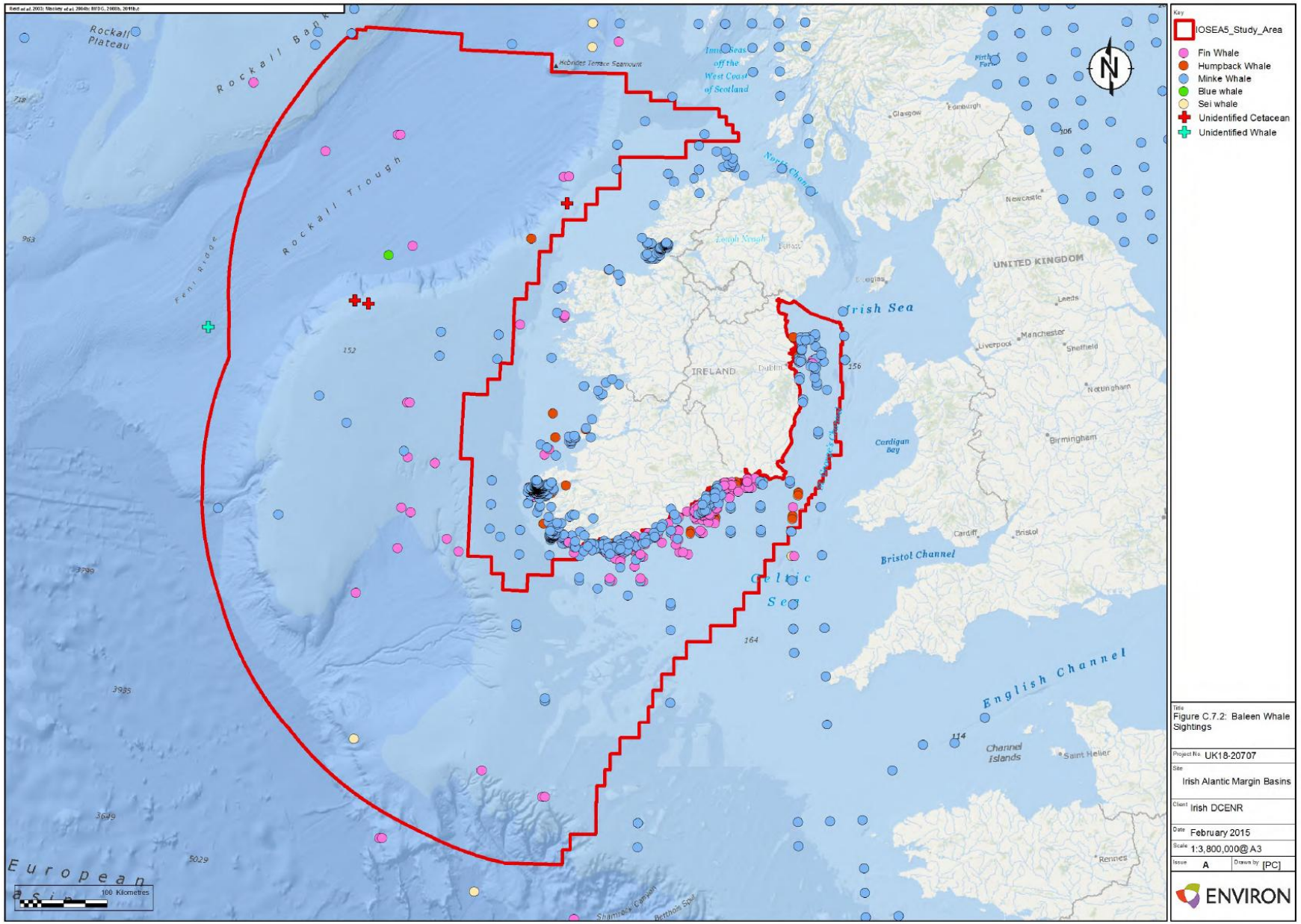


Figure 7.0b: Baleen whale sightings

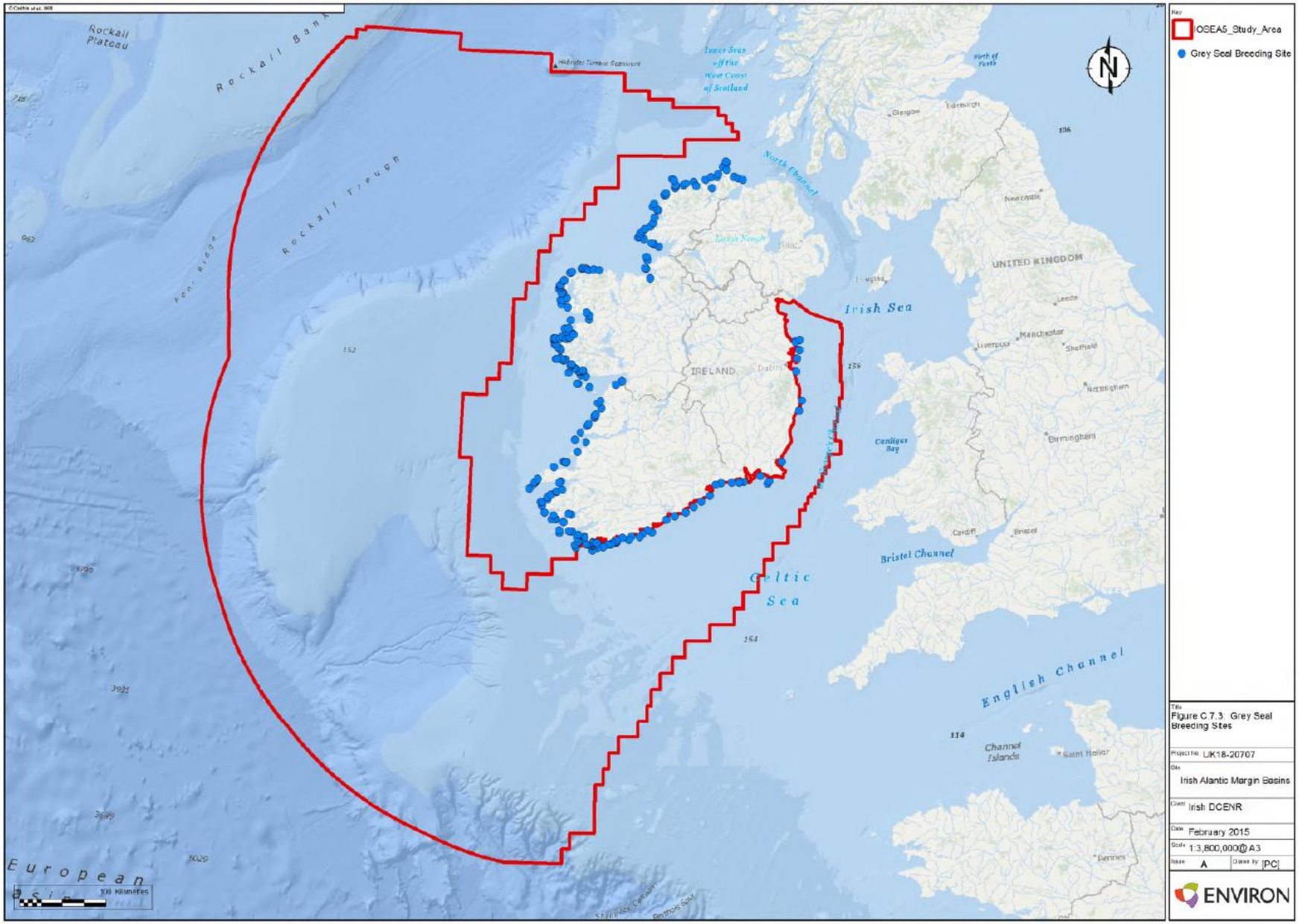


Figure 7.0c: Grey seal breeding sites

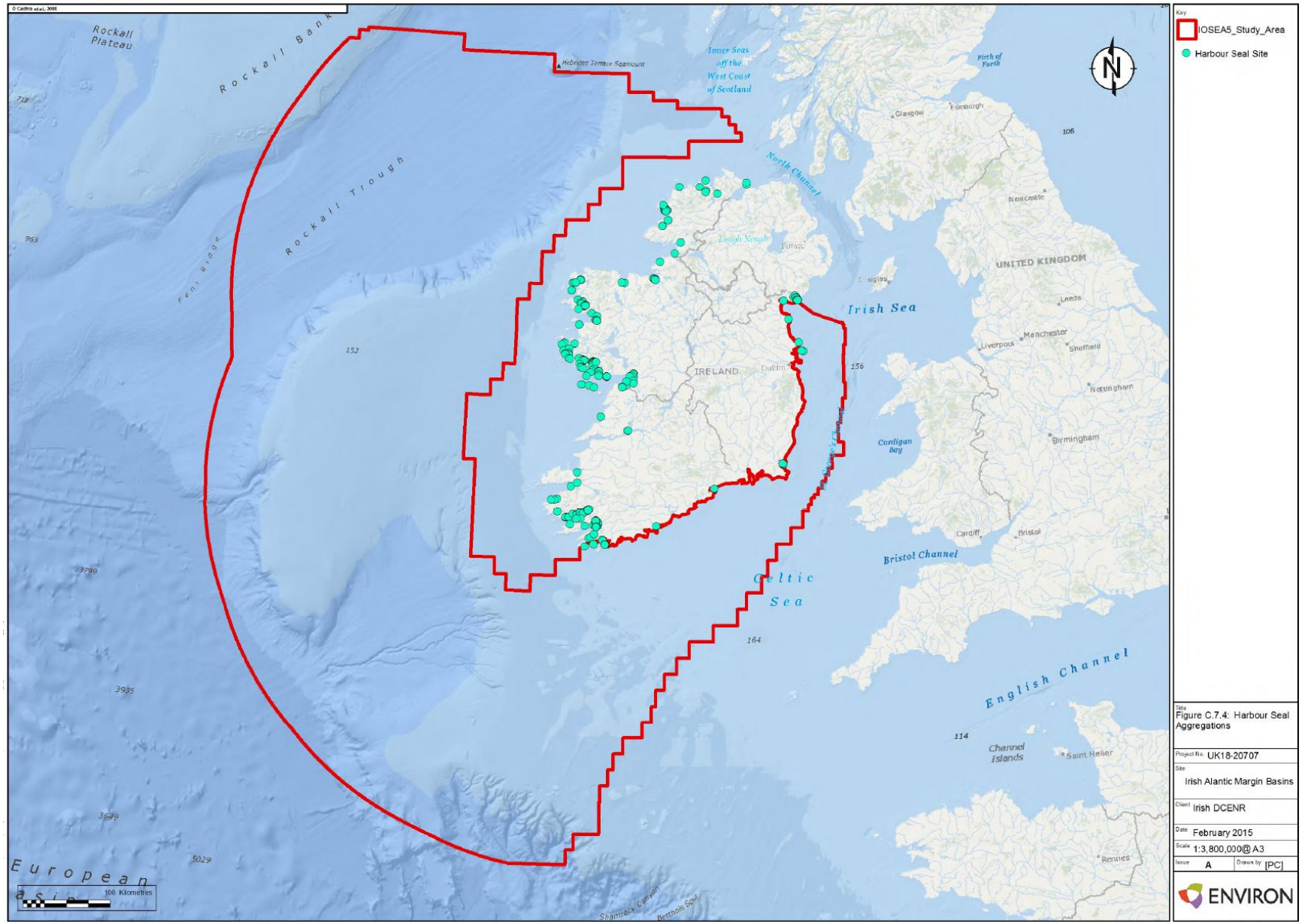


Figure 7.0d: Harbour seal sites

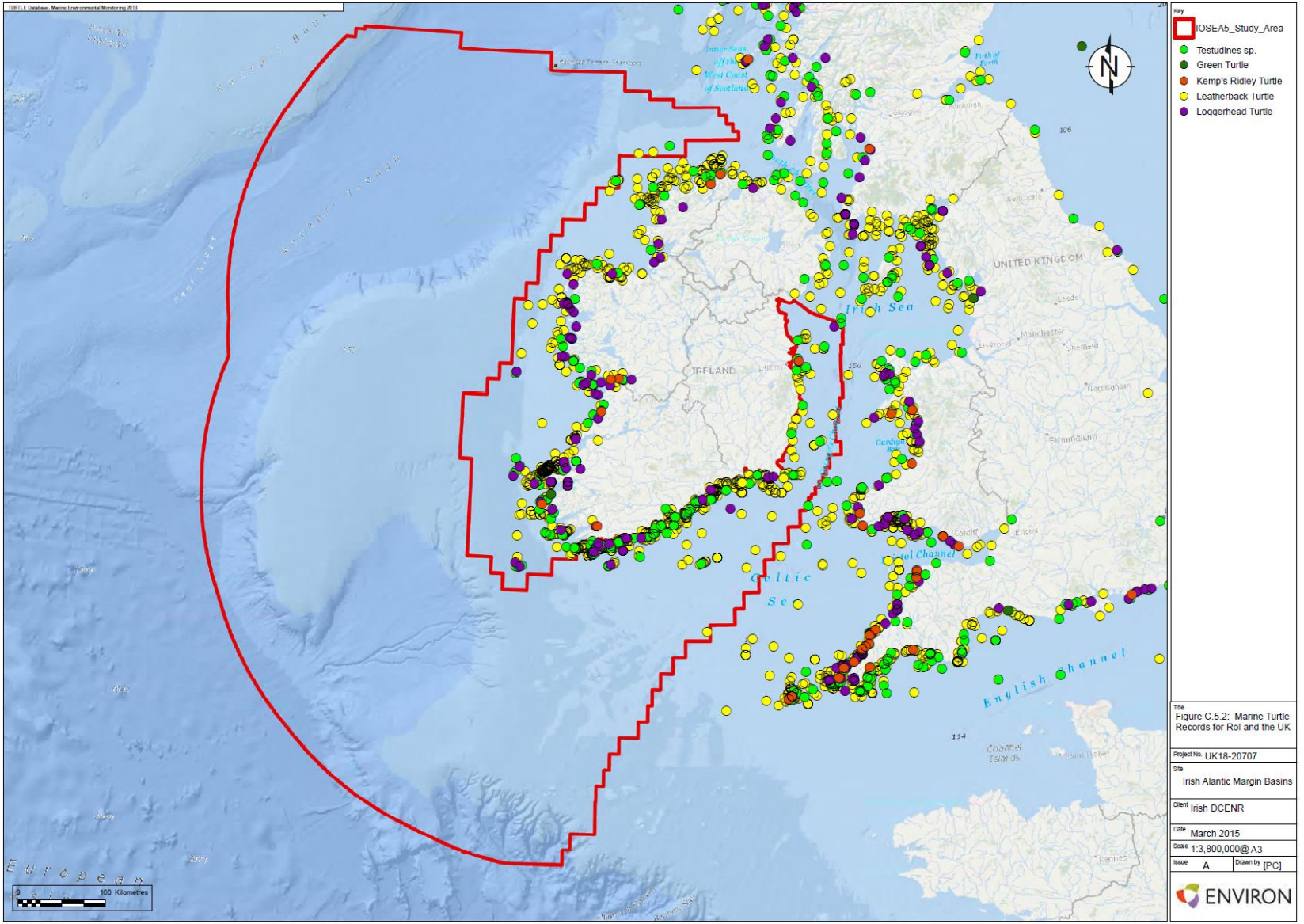


Figure 7.0e: Marine turtle records for Ireland and the UK

Reference: Department of Communications, Energy & Natural Resources (2015). Irish Offshore Strategic Environmental Assessment (IOSEA) 5

10.3.3.1 Designated Waters

Because of the protection status afforded to designated Shellfish Waters in relation to water quality standards, monitoring and pollution reduction programmes, it is desirable that all areas licensed for shellfish aquaculture become designated Shellfish Waters. This did present a challenge for local authorities in the past as maintenance and improvement of shellfish classifications can require significant investment by local authorities to improve the performance of wastewater treatment plants. These challenges have yet to be resolved. Since the enactment of the Water Services Act 2013 responsibility for the management of the national water and wastewater asset lies with Irish Water (see Appendix B table 15.0c).

Appendix B Table 15c

Topic	*Title*	*Summary of Objectives*
Biodiversity	*ObSERVE project*	The ObSERVE aerial project, funded by DCENR in partnership with of the Department of Arts, Heritage and the Gaeltacht (DAHG). This is a three-year programme to undertake extensive aerial surveys and collect data on the distribution and abundance of cetaceans, seabirds and other marine megafauna in Irish offshore waters. Four complete surveys will be conducted in summer and winter 2015 and 2016. The project will provide information on seabird and cetacean abundance and distribution in Irish waters. Surveys will run from Donegal, down the west coast and out to the continental shelf edge, and across the Celtic sea. The first survey recorded sightings of minke whales, porpoise, common dolphins and numerous seabird species including storm petrels, gannets and shearwaters. The project is being led by University College Cork with partners Aerosotravia, IMARES, and ALNILAM. (http://www.observe-aerial.ie/)

Appendix B table 15.0c

Water	Water Services Act 2013	Irish Water was incorporated in July 2013 as a company under the Water Services Act 2013. It has combined the public water and wastewater services of the 31 Local Authorities together under one national service provider. Irish Water took over responsibility for public water and wastewater services from the Local Authorities with effect from 1st January 2014. Irish Water is now responsible for the operation of public water and wastewater services, including: • Management of national water and wastewater assets; • Maintenance of the water and wastewater system;

		• Investment and planning; • Managing capital projects; and • Customer care and billing.

11.0 Recommendations, Mitigation and Monitoring

11.2 Recommendations and Mitigation

Current controls and management measures for the prevention of impacts of aquaculture activities on the environment as outlined in Section 3.2 and 3.3 are existing mitigation measures optimising activities related to aquaculture thus preventing any significant impacts on the environment. In addition, the NSPA introduces further key mitigation measures ensuring that any expansion of aquaculture in new or existing sites will be economically, environmentally and socially sustainable. This is reflected generally in its vision for a streamlined and efficient licensing system that provides greater certainty to administrators, applicants and the general public, and specifically in the action points regarding the application of the six guiding principles for the sustainable development of aquaculture, the provision of expert advice to improve environmental and business performance and enhanced strategic planning by aquaculture enterprises, and the applied research and collaborations between industry, scientific and development bodies.

The six guiding principles for the sustainable development of aquaculture in particular support linkages and integration with existing plans and projects to form a cohesive approach to the development of shared resources and foster a greater understanding of the industry. Measures contained under *Knowledge, Innovation and Technology, Ensuring Sustainability* and *Coordinated Spatial Planning* directly support improved environmental performance. Overall, therefore, the potential expansion of production is not expected to cause a significant impact.

Another key component for the sustainable development of the aquaculture industry in Ireland is the continuation of the Invasive Species Ireland project and the development of an industry Code of Practice for Invasive Alien Species. This is a subject that will affect decisions on what species are cultured and cultivation methods used, and which also has the potential to change farming practices to deal with the impact of invasive species on operations. To mitigate this more research is required and administrative processes need to be established on the basis of sound and emerging research so that this topic is dealt with proactively.

A streamlined and efficient licensing system supporting sustainable aquaculture development will ensure solid growth of and support for the development of rural communities through improved security of the sector and will also inform negotiations to maintain, improve and add to the number of designated Shellfish Waters. It also provides an opportunity for the aquaculture sector to address cultural and archaeological heritage, emissions as well as visual impact ensuring that potential impacts are minimised at project level.

Guidance derived from the principles recommended by the Marine Institute will focus on responsible, sustainable and inclusive development of the aquaculture industry and engaging in responsible planning within the wider marine spatial planning framework which will have a positive

effect on a wide range of aspects associated with aquaculture development while facilitating improved understanding of the complex demands on the water resources used by aquaculture and the designations that apply under WFD and MSFD. Opportunities and constraints mapping will support informed decision making and facilitate the operation of aquaculture and other marine activities in harmony with the discovery and appropriate conservation of archaeological and architectural heritage which should be linked in to a national platform for a cross-sectoral coordinated approach. Identifying marine tourism opportunities from aquaculture may positively impact on landscape and seascape appreciation through establishing the direct connection between aquaculture operations and locally produced seafood.

Applying the six principles recommended by the Marine Institute, especially responsible planning, ecosystem protection and a science-based approach, integrating aquaculture into MSFD monitoring systems as well as carrying out opportunities and constraints mapping may facilitate the aquaculture sector to work more closely with other marine sectors at ground level to address local issues and will have a positive effect on biodiversity, flora and fauna as this facilitates a more holistic management approach across all demands on marine and freshwater resources. Focus on Invasive Alien Species will benefit the protection of biodiversity cross-sectorally as well as on a cross-border level while the application of scale limits and phasing in relation to the development of individual offshore salmon farms will ensure that any potential impacts on biodiversity are minimised and mitigated.

The integrated sustainable growth of the aquaculture sector will give added security to long-term rural community development.

Through continuous upgrading of technology, implementation of certification systems (e.g. ECOPACT, quality/ environmental/ organic certification schemes, MSC, ASC), introduction of multi-trophic aquaculture techniques and ongoing research and development the Irish aquaculture industry can ensure use of best practice and most environmentally friendly techniques and technology ensuring that future growth has no significant impact on biodiversity. The provision of expert advice to improve environmental and business performance, applied research and collaboration will further advance improvements of environmental performance within the sector while increased knowledge and enhanced skills within the industry will aid improvements at individual farm level.

The sustainable development of the aquaculture sector will create rural employment opportunities adding improved security through investment in latest technology and ensuring future growth and development is supported by increased knowledge and enhanced skills within the industry and carried out in harmony with the environment, e.g. through schemes such as CLAMS, ECOPACT, MSC, ASC etc. as well as best husbandry and disease management practice. Providing aid to shellfish producers significantly affected by biotoxin closures and supporting risk management by aquaculture enterprises will lend added security to the shellfish sector in particular.

Increased production will increase the availability of Irish quality products on the domestic market. Support for organic certification and eco-label products will further underpin the recognition of sustainable food production and trust in Irish aquaculture products thereby leading to an increase in demand on the domestic as well as the international market. Further support schemes provide continued contribution to programmes that continue to enhance the environmental performance of

the sector at individual level, e.g. ECOPACT, quality/ environmental/ organic certification schemes, MSC, ASC.

10.0 Conclusion

The SEA and AA processes carried out during the preparation of the National Strategic Plan for Sustainable Aquaculture Development have ensured that the plan keeps sustainability to the forefront of its rationale and has ensured that any potential significant environmental impacts associated with its implementation have been identified and given appropriate consideration. Consultation on the NSPA, its Scoping Report, Environmental Report and Appropriate Assessment has further contributed to the development and finalisation of Ireland's National Strategic Plan for Aquaculture as adopted on 23rd October 2015.