

Using marine planning to balance competing demands on the marine environment: International comparisons

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1 Executive Summary

Scottish and UK context

The Marine and Coastal Access Act 2009 established an integrated planning system for the UK's marine environment. England, Scotland, Wales and Northern Ireland have developed separate marine planning processes with the 2009 Act remaining the overarching legislation. This has resulted in a variety of institutional and governance arrangements across the UK.

Marine plans are now **integral to marine development and conservation**. Decisions to license marine activity or development must take the marine plan into account in reaching a decision as part of a discretionary decision-making process.

Scotland's key milestones since the Marine (Scotland) Act (2010) was passed:

- Adopted a **National Marine Plan** 2015
- **Identified marine regions** to implement regional marine planning 2015 (The Scottish Marine Regions Order 2015 No.193).
- Established **two marine planning partnerships** in **Shetland** (2016) and **Clyde** (2017)
- **Orkney** is in the process of establishing a marine planning partnership (**2020**)

Contrasting Scottish and UK marine planning practice to that of Europe, North America and New Zealand has **identified key strengths in the Scottish approach** and **opportunities for learning** from other nations.

Legislation and Governance



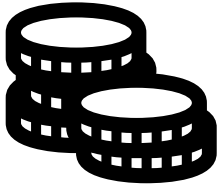
- Study of international comparisons identified many types of marine planning processes, including plans which are heavily zoned, to those which blend policy, strategy and zoning.
- Marine plans are often developed to address a key issue or because of legislative change.
- The processes for preparation and adoption of statutory marine plans are remarkably similar both to terrestrial plans and to each other.
- **Environmental principles and approaches** to protect the marine environment **underpin governance arrangements and legislation** for marine planning.
- Priorities and guidance are usually provided at a national level.
- **Scotland is unique in creating new areas ('marine regions')**, specifically for marine planning.
- Most countries used existing central / regional government or government agencies to create the plan.
- Only England (like Scotland) has created a new government organisation for marine planning.
- Both England and Scotland have a **disconnect between marine and terrestrial planning**. It is a difficult process to align terrestrial planning, with the relatively new process of marine planning.
- Scotland has **complex steps and processes** required to establish a Marine Planning Partnership before the process of marine planning can begin- this has led to **delays**. Contrasts with the England (MMO) which has established uniformity in terms of process.

Fisheries



- The underpinning **legislation** in Scotland **does not** provide for the management of **fisheries** via marine planning.
- **Marine planning** can be utilised to **support fisheries**.
- Fisheries data needs to be at an appropriate scale to support local measures.
- Shetland and international examples of marine planning working with fisheries to overcome specific management challenges
- National and international examples of developing management strategies which use a **range of spatial, temporal and technical measures or tools**.
- Fisheries sometimes classified as 'hard to reach stakeholders' due to working hours and small business models.
- Limited budget and powers of regional inshore fisheries groups (RIFGS) may undermine partnership working.

Resource



- Estimated costs of developing marine plans vary from **£100,000 - £29.6 million** per plan
- **Scotland's investment** in regional marine planning is **comparatively low** at £250,000 - £300,000
- Estimated **benefits** / savings by marine planning are estimated to significantly **exceed costs**, to manage commercial uses valued in billions (£47 billion in the UK).
- Planning time frames varied between **3-5 years**, comparable to Scotland.

Knowledge



- The development of marine planning has required the **utilisation of existing and creation of new data**.
- Data quality can dictate the specificity of policy development.
- Marine planning has utilised data from government led programmes, academia, local data and marine users.
- Marine planning process has highlighted specific data gaps for spatial management.
- EU funding has supported many national and international projects.
- Marine planning requires a range of skills (impact assessment, mapping, stakeholder engagement), covering topics environment, industry and community interest. Challenge in relatively small teams involved in marine planning.

Stakeholder Engagement



- Legislation for the Scottish marine planning system sets out an ambitious approach for stakeholder engagement.
- Regional marine plan partnerships must include representation from recreation, conservation and commercial interests.
- Regional marine planning partnerships have delivered broad consultation on plan development and more ambitious, participatory approaches to engagement
- Current international experience highlights the benefits of stakeholder engagement, including drawing on wider expertise for plan development, and increased acceptance of plan policies. However, this is difficult and resource intensive to achieve and maintain.
- Risk that some issues are not covered in the plan because of the challenge of reaching consensus.
- A range of tools and technologies are available to support stakeholder engagement, from plan development and consultation, to participatory approaches which go beyond bureaucratic planning, including focus groups and games. These require capacity to implement.

Achievements



- It is an important achievement to have developed marine plans
- Clear legislative underpinning marine planning.
- Given that regional marine plans are yet to be finalized and implemented, it is too early in the marine planning process to fully evaluate success. Outputs and impacts process ought to be apparent after one full cycle of the marine planning.
- The first generation of marine plans in the UK has identified opportunities, catalogued the constraints and set a context for decision-making. The next generation must provide greater certainty and more detailed guidance.
- Examples of clear benefits of marine planning in Scotland, including using marine planning partnerships as a forum to address wider issues such as biosecurity planning (Clyde), integrate biodiversity management with fisheries via the regional inshore fisheries group (RIFG) (Shetland).

Looking forward

Scotland is in a strong position and as it is important to highlight that for both national and regional marine planning there is a clear defining context and authority to develop marine plans. This stems from the legislative process set out in The Marine and Coastal Access Act 2009 and Marine (Scotland) 2010 Acts. The process of developing marine planning partnerships is a complex multistep process. The legislation also requires implementation and enforcement, monitoring and

evaluation, followed by adaptation of the MSP processes. Implementation of the National Marine Plan (the only adopted plan) has been occurring, but progress is limited.

The following report contains numerous detailed examples of the implications of international experiences for the Scottish systems marine planning. A few examples are highlighted below:

Challenges:

- Financing marine planning going forward.
- Unfamiliarity with national marine plans and regional marine plans as a policy tool as part of the licensing process.
- The high level nature of policies at national level can lack the detail necessary to address local issues.
- Translating environmental principles from legislation into the implementation of marine planning.
- Balancing consensus building between stakeholders, with developing policies specific enough to provide direction to address key challenges.
- Integrating fisheries despite the absence of underpinning legislation.
- Reaching consensus and meeting the expectations of stakeholders remains challenging. Due to their constitution, regional marine planning partnerships cannot avoid the challenges of a consensus approach. Nevertheless, through the plan process they can build understanding of regional issues, and make progress towards genuine co-operation and collaboration in producing sustainable policies and local solutions.

Opportunities:

- Opportunities with ongoing development of National Planning Framework 4, which will include the updated Scottish Planning Policies and the review of the Scottish National Marine Plan by 2021.
- The extension of statutory planning controls over aquaculture in Scotland recognises the links between terrestrial and marine planning.
- Enhance relationships with terrestrial planning and deeper awareness raising and capacity building among local authorities.
- Greater utilisation of marine planning partnerships as a mechanism to identify local issues that fall within and outside of marine licencing .
- Greater utilisation of marine planning partnerships to develop marine strategies, and test innovative approaches to address marine issues.
- Opportunities for regional marine plans to help support measures to tackle climate change (i.e. protecting marine carbon sinks 'blue carbon', identifying renewable potential), support sustainable economic growth and to reduce biodiversity loss.

2 Background

The Environment, Climate Change and Land Reform (ECCLR) Committee is conducting an inquiry into the marine environment, focusing on implementation of the [Marine \(Scotland\) Act 2010](#). In May 2019, the Committee agreed to examine the experience of developing and implementing Regional Marine Plans in Scotland, ten years on from the Marine Planning (Scotland) Act 2010. To support this the committee has gathered evidence from experts, practitioners and stakeholders, the results of which were published in the Committee's interim report¹.

The Interim report identifies that within the next phase of the inquiry, the Committee signalled intention to commission academic research exploring international comparisons of the implementation and governance of marine planning to:

- better understand how the implementation of marine spatial planning can balance competing demands on the marine environment; and
- deliver protection and enhancement of the marine environment using examples from other countries.

This report will provide an evidence base for the next strand of the Committees' work on its marine inquiry. This will help the committee to identify further evidence needs, and to develop recommendations to the Scottish Government.

3 Approach

International case studies have been used to identify learning and best practice which could be applied to the Scottish context. Selected case studies and potential key learning points are shown in Table 1. Additional case studies have been examined within sub-sections to inform specific areas of this study, and these are detailed separately in the text.

Table 1 International comparative case studies and key learning and best practice

Country	Comparison
Belgium	Challenges of managing activities across borders Implementation of marine planning legislation
England	Implementation of parent legislation Approaches to fisheries management
California, USA	Management of conflict between fisheries and protected species
Canada	Approaches to community engagement Approaches to fisheries management
New Zealand	Approaches to community engagement
Norway	Management of fisheries and aquaculture

This report is divided into four further sections:

4 Implementation and governance- *How do governance structures facilitate implementation of marine planning ?*

5 Fisheries - *Can and should marine planning incorporate fisheries management measures?*

6 Finance and resource - *How can cost and benefits be balanced in marine planning, and how can academic knowledge be utilised?*

7 Stakeholder engagement - *Does increased stakeholder engagement make marine planning better and enable better marine development and conservation?*

4 Implementation and governance- *How do governance structures facilitate implementation of marine planning ?*

This section of the report sets out and discusses the governance arrangements for marine planning. It starts with the UK and includes a detailed explanation of the law and policy in England and Scotland. This provides a context for a comparative examination of the governance arrangements for marine planning by case studies of Belgium, England, New Zealand and Norway. Analysis of the marine planning governance arrangements against the UNESCO 10 step guide to MSPⁱⁱ allows comparisons to be made. Key aspects and significant features of each regime are highlighted and enables identification of good practice relevant for the implementation of marine planning in Scotland.

4.1 UK Implementation and governance

MSP in the United Kingdom

This introductory section explains the legislation and policy which introduced marine planning to all parts of the UK and identifies the bodies responsible for marine planning in each administration.

[The Marine and Coastal Access Act 2009](#) marked the point at which marine spatial planning became a part of the administration of marine activities in UK waters. It established an integrated planning system for the UK's marine environment and extended the broad principles of the terrestrial planning system to the territorial and offshore waters out to the Exclusive Economic Zoneⁱⁱⁱ.

The 2009 Act covers the whole of the UK, applying to the individual administrations of England, Scotland, Wales and Northern Ireland. Each regime has developed a separate process with the 2009 Act remaining the overarching legislation. This has resulted in a variety of institutional and governance arrangements across the UK^{iv}.

Marine Management Organisation

The 2009 Act established the Marine Management Organisation (MMO) to administer marine management (Section 1). The [MMO](#) is responsible for producing marine plans and administering marine licences for England.

Scotland

The [Marine \(Scotland\) Act 2010](#) covers responsibilities in Scotland's inshore waters, subject to [reserved matters](#) such as oil and gas. Under the 2010 Act, Scottish Ministers must prepare and adopt a [National Marine Plan](#) with only one plan document required for inshore and offshore waters [Marine Scotland](#), a Directorate of Scottish Government is responsible for producing Scotland's National Marine Plan and implements marine planning through the marine licensing process.

Wales

In Wales, under the 2009 Act, Welsh Ministers are responsible for marine planning in both inshore and offshore waters. The national marine plan has been produced by a team of civil servants based in the Marine Policy Branch of the [Marine and Fisheries Division](#) of Welsh Government. Marine licensing is undertaken by [Natural Resources Wales](#), a Welsh Government sponsored body with a variety of responsibilities for the countryside, environment and forestry.

Northern Ireland

In Northern Ireland, the [Marine Act \(Northern Ireland\) 2013](#) was passed by the Northern Ireland Assembly. The marine plan is being produced by the marine plan team in the Marine and Fisheries Division, [Department of Agriculture, Environment and Rural Affairs](#), which is also responsible for licensing

UK Marine Planning Documents

This section identifies what the legislation refers to as Marine planning documents. These are the Marine Policy Statement and the various UK marine plans.

Marine Policy Statement

The passing of the 2009 Act was followed by the publication of a joint [UK National Marine Policy Statement \(MPS\)](#) in 2011. It is a framework for the subsequent series of UK regional marine and national plans and is in line with the high-level marine objectives adopted following the [Safeguarding the Seas report](#) (2011). A revised MPS has been issued to align with the UK exit of the EU.

The MPS sets out the process for developing marine plans. The aim is to provide an overarching policy context for decision-making. Although the MPS itself is not a spatial document per se, as it does not specify which activities could take place within different areas, it does provide the foundation for the development of marine plans which will have a spatial context^v. In marine areas not yet covered by an adopted marine plan, the MPS is the primary marine policy document.

Table 2 Timeline of UK Marine Plans

Year	Plan
2014	Marine Plan East England (adopted)
2015	Scotland's National Marine Plan (adopted)
2016	Marine Plans for North East, South East, South West and North West England (draft, due for adoption 2021)
2018	Marine Plan South England (adopted)
2018	Draft Marine Plan for Northern Ireland (published for consultation)
2019	Welsh National Marine Plan (adopted)

Scotland's Marine Planning Documents

In **Scotland**, the legislation allows for a tiered, plan led system made up of three components:

-
1. Marine Policy Statement (UK)
 2. National Marine Plan (Scotland)
 3. [Regional Marine Plans \(11 marine planning regions\)](#)

Plans created must conform with each other, i.e. Scotland's Marine Plan must be consistent with a MPS which is 'in effect', and regional marine plans must correspond with the national plan¹.

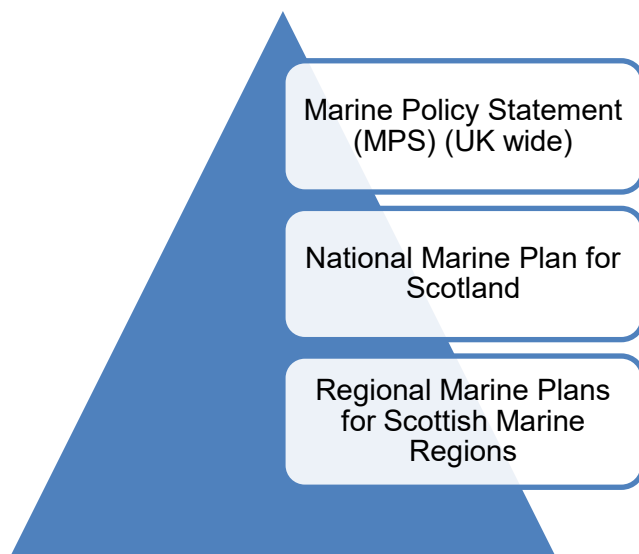


Figure 1 The plan hierarchy in Scotland Source: Macdonald (2018)

The 2010 Act *obliges* the Scottish Ministers to create a marine plan for the territorial sea adjacent to Scotland in comparison, the 2009 Act *enables* Scottish Ministers to create a marine plan for the offshore area adjacent to Scotland^{vi}. The two pieces of legislation combine to enable Scottish Ministers to create a Marine Plan for all waters adjacent to Scotland. Together these plans form a single document. The plan's stated aim is to provide:

“a comprehensive overarching framework for all marine activity in our waters. It will enable sustainable development and use of our marine area in a way which will protect and enhance the marine environment whilst promoting both existing and emerging industries”

Marine Plan Preparation and adoption processes: Scotland

The process of preparation and adoption of a marine plan is set out in **Figure 2**.

¹ Marine (Scotland) Act 2010 s 6 and The Marine and Coastal Access Act 2009 s 51 (6)

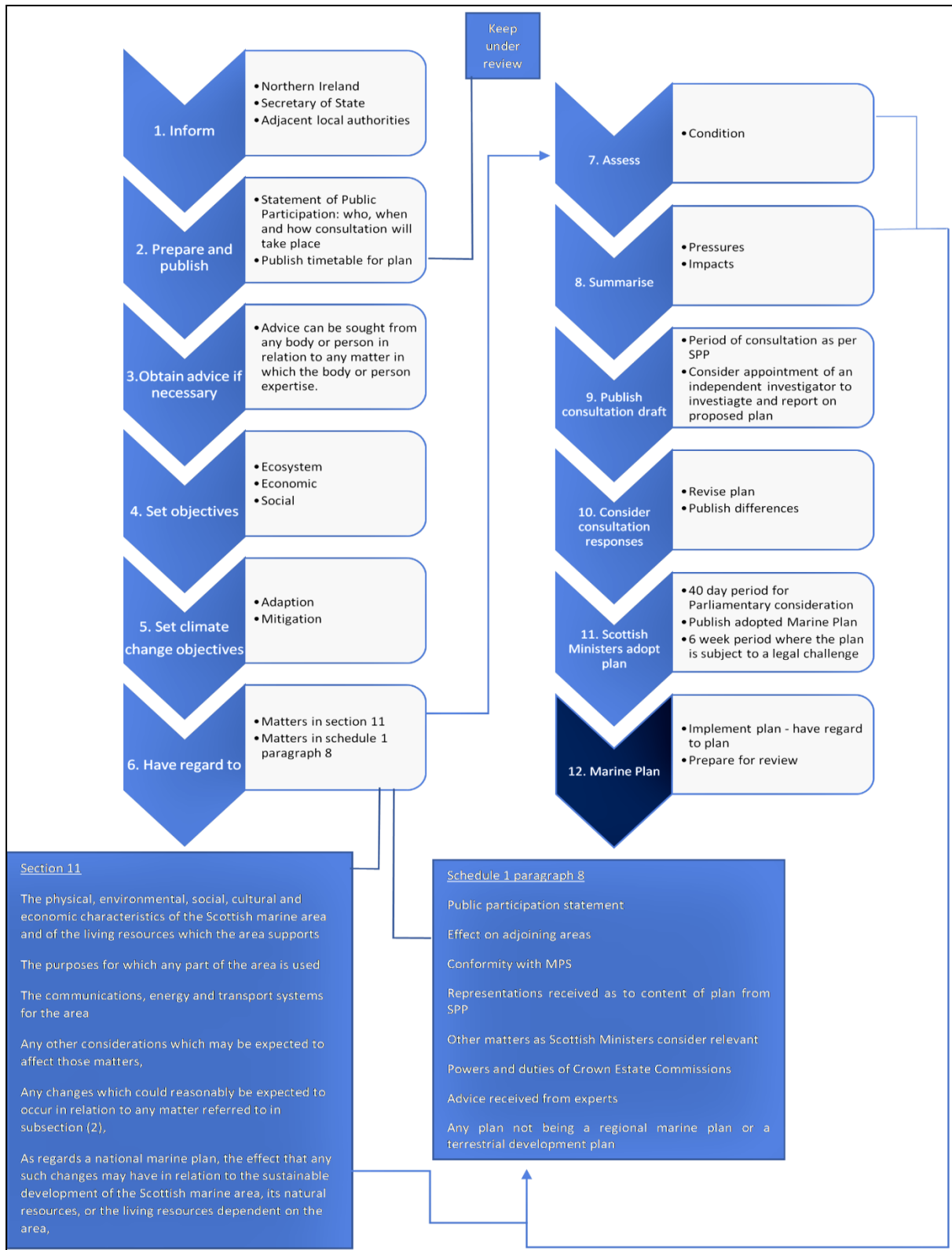


Figure 2 MSP Process in Scotland Source: Macdonald (2018)

The Scottish National Marine Plan process took 5 years. The timeline, including the subsequent 3-year review is set out in **Table 3**.

Table 3 Timeline for preparation of Scotland’s National Marine Plan

Year	Achievement
2010	Marine (Scotland) Act passed
2011	Strategic Environmental Assessment for Marine Plan
2013	Draft Marine Plan
2014	Rural Affairs, Climate Change and Environment Committee of the Scottish Parliament: review and report
2014	Independent Investigation: Planning Aid Scotland
2015	Debate in Scottish Parliament Adoption
2018	Three Year Report on the implementation of Scotland’s National Marine Plan

Review of the National Marine Plan

The Marine (Scotland) Act 2010 requires the National Marine Plan to be reviewed every 3 years. To date there has been one review. It concluded that there was a general consensus that the National Marine Plan should not undergo a full scale review at this time due to current uncertainties surrounding the UK’s departure from the European Union, new and forthcoming legal and legislative initiatives and the Scottish Government’s intention to ‘introduce a number of plans, policies and strategies which will have implications for the marine planning framework (2018)^{vii}. The next review will be 2021.

Scottish Regional Marine Plans

The Scottish National Marine Plan envisages its national policy and guidance being augmented by regional plans. The 2010 Act enables regional marine planning in Scotland. This is a discretionary power, not a duty. Regional marine planning is implemented by [Marine Planning Partnerships](#). Eleven marine regions have been identified, dividing the Scottish coastal area and extending out to twelve nautical miles, see **Figure 3**.

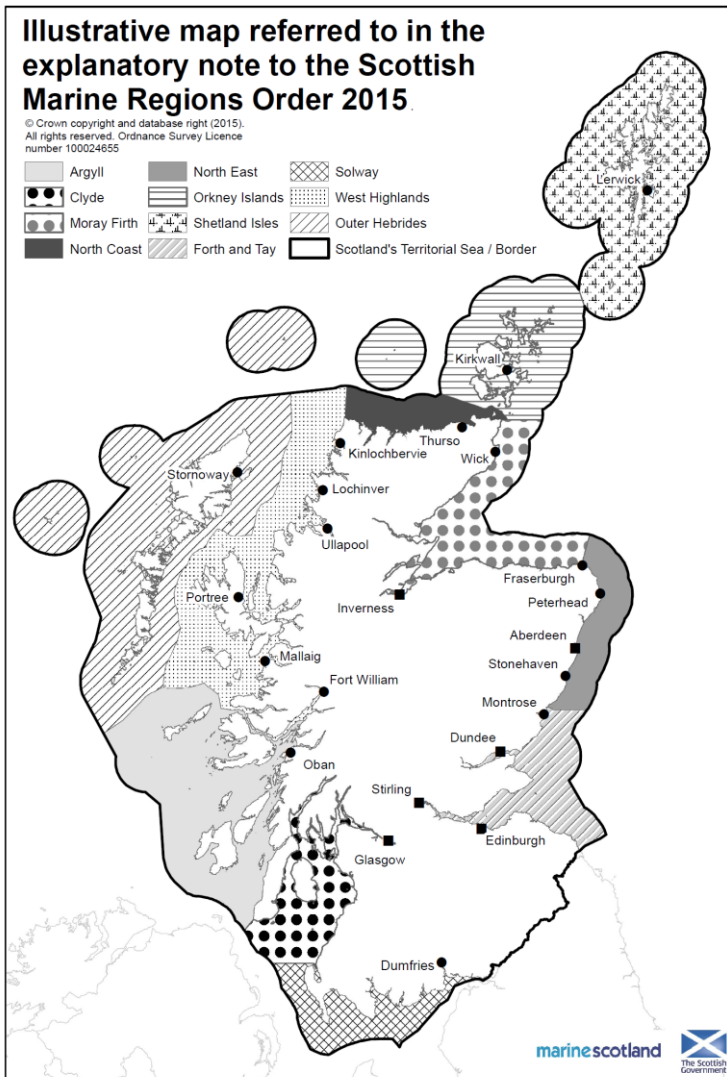


Figure 3 Scottish Marine Regions

Marine Planning Partnerships

Two Marine Planning Partnerships have been established:

- [Shetland Isles Marine Planning Partnership](#)
- [Clyde Marine Planning Partnership](#)

A further one is in the process of being implemented for [Orkney](#).

No regional marine plans have yet been adopted in Scotland, but it is expected that the Shetland Islands Regional Marine Plan will be adopted in late 2020. In the period before regional plans are fully established the policies of the Marine Policy Statement and the National Marine Plan are expected to provide policy guidance for licensing decisions.

A non-statutory marine plan was produced for the [Pentland Firth and Orkney](#) waters marine area in 2016 as a pilot plan for marine planning in the Northern waters of Scotland.

In **Wales**, the [Welsh National Marine Plan](#) was adopted in 2019. There is no regional dimension to the Welsh Plan.

In **Northern Ireland**, the draft [Marine Plan for Northern Ireland](#) is made up of two plans, one for the inshore area under the 2013 Act and one for the offshore area under the 2010 Act and combines the plans for both in one document.

The process of adopting a final marine plan in Northern Ireland was delayed due to the suspension Northern Ireland Assembly. Following its resumption in January 2020, work towards adoption of the Marine Plan for Northern Ireland is ongoing.

In **England**, a regional approach to marine planning has been adopted for marine planning. The progress towards marine plan coverage is set out in **Table 4**.

Table 4 English marine plan adoptions

Year	English Marine Plans adopted
2014	East England (inshore and offshore)
2018	South England (inshore and offshore)
2021 (expected)	North East (inshore and offshore) South East (inshore only) South West (inshore and offshore) North West England (inshore and offshore)

Implementation of the Scottish National Marine Plan

Any authorisation or enforcement decision made by a public authority must be taken in accordance with the appropriate marine plans, unless relevant considerations indicate otherwise^{viii}. UK public authorities in general, therefore, need to have regard to the statutory marine plans. It is important to note that this includes but is not limited to the marine licensing body. If the decision is not in conformity with the plan, the authorities must state their reasons for this^{ix}. When considering marine licence applications, the Scottish Ministers must also 'have regard to the need to (i) protect the environment, (ii) protect human health, (iii) prevent interference with legitimate uses of the sea' ^x If there is not a marine plan in effect, the decision must be made in accordance with the MPS^{xi}.

To summarise, the decision as to whether a new marine activity or development takes place is determined by the licensing process. This must take the marine plan into account in reaching a decision as part of a discretionary decision-making process.

4.2 Marine Plan Case Studies

Introduction and overview

International examples demonstrate a variety of governance structures, decision making process and implementation for marine spatial planning. There are many of types of plan which can be regarded as a marine plan, including large ocean management areas (e.g. Canada); sector specific regional plans (e.g. Norway) and non-statutory plans (e.g. New Zealand). The passing of

specific legislation to implement marine planning in the case study areas had only been undertaken in England (UK). The relevant statutory basis is often wider planning or environmental laws, in some instances with amendments to existing legislation to specifically include marine planning (e.g. Belgium).

The requirement to deliver marine plans for the entire maritime area of a country is required by 2021 under the [EU Maritime Directive 2014](#).

This requirement had already been passed into legislation in the UK by the time the EU Directive was issued. There was no such requirement for universal coverage in the case study examples except Belgium, as an EU member state. Countries with an extensive marine area identify priority areas for marine planning. Norway recently consolidated its existing large [integrated marine management plans into a unitary plan](#).

New Zealand adopted a different approach requiring all regions to develop coastal plans to 12 nm. The [Hauraki Gulf](#) is the only area with a marine plan in New Zealand.

The international case studies indicate a strong link in most cases between existing local government boundaries and structures and the implementation of marine planning. None of the case study areas created new areas, specifically for marine planning, as in Scotland. Most countries used existing central / regional government or government agencies to create the plan (e.g. Belgium). Only England (like Scotland) has created a new government agency for marine planning. No case study adopts the Scottish Marine Planning Partnership Approach.

The marine plans are often developed to address a key issue (e.g. a large marine ecosystem in Norway) or there is a particular social and political drive to create a marine plan (e.g. New Zealand and the EU Maritime Spatial Planning Directive 2014).

The processes for preparation and adoption of statutory marine plans are remarkably similar both to terrestrial plans and to each other^{xii}. Priorities and guidance are usually provided at a national level (e.g. UK MPS). In New Zealand the plan (or sections of the plan) can be appealed to the Environmental Court. Belgium has a mandatory marine plan public hearing.

Implementation of marine plans is usually as a policy tool for decision making for consents and licenses as in Scotland. England, like Scotland has a discretion to depart from the plan (2009 Act). Belgium has zoned most of the maritime activities. New Zealand does not require consents for activities already allocated in the coastal plan.

The role of a marine plan in providing a framework and a starting point for development and for conservation is recognised in all the international examples, particularly the first set of marine plans are reviewed and beginning to be updated and replaced (e.g. Belgium). The need for flexibility and to recognise the multiple uses co existing in marine areas, however, is increasingly being recognised. Marine planning as it matures can facilitate this process coordinating users,

developers and protection of the environment. See for example: [MUSES: Multi use in European Seas](#).

Having provided a brief overview of the variety of governance arrangements illustrated by international comparisons for marine planning. The next section discusses the governance arrangements for Belgium, England, New Zealand and Norway in more detail.

Belgium Marine Planning System

Legislative context

Marine planning in Belgium is a statutory requirement. [The Marine Environment Act 1999](#) was amended in 2012 to include marine planning. An advisory committee was also formed to start the process of creating a marine plan for Belgium waters.

Relevant policy

The [first marine plan](#) was adopted 20 March 2014. A review commenced in Spring 2017 resulting in the [second Belgium](#) marine plan adopted 2020. Belgium has therefore completed two marine plans for the Belgium North Sea (2014, 2020).

The current plan considers the following uses:

- Nature protection
- Offshore renewable energy production
- Shipping
- Ports
- Mineral extraction
- Fisheries
- Aquaculture
- Under water cultural heritage
- Military
- Scientific Research
- Coastal protection
- Cables and pipelines
- Zones for commercial and industrial activities

Key marine bodies

The Belgium National Marine Plan is developed by central government, being the responsibility of the Belgium Minister for the North Sea. It is coordinated and implemented by the [Marine Environment Service](#) (Health, Food Chain Safety and Environment).

Duties relating to marine planning required by the legislation

Marine Plan implementation

The Belgium Marine Plan adopts a process of zoning, while recognising that many uses are not located to a particular area. However, many areas of Belgium waters are allocated for a designated (zoned) use. Implementation is by consents issued for appropriate activities within

the relevant zones. Some areas are excluded from activity and this is clearly allocated on the plan. Particular attention has been allocated to offshore renewable energy locations, including cable corridor routes connecting turbines and the electricity substations on land.

Key features

The basic process of plan making and issuing of consents for marine activities in Belgium has similarities to the process of marine planning in Scotland. The Belgium Plan could be regarded as comparable to a regional marine plan in Scotland in size. It covers an area of intense use, highly industrialised with adjoining areas that are under equal pressure in terms of balancing development and conservation.

The main difference is the quite rigid zoning approach in some areas, however, the plan is addressing a small and intensely used marine area. The Belgium Plan is therefore very clear in terms of spatial policy. It is noted that while this can be regarded as providing clarity and confidence in the system, it is also recognised the need for flexibility so that multiple uses of sea areas can be identified. The relatively quick review period between the first and second plan also contribute to the system being highly regarded and can to some extent address concerns about flexibility.

The plan making process in Belgium appears inclusive. There is extensive informal consultation pre-plan with stakeholders, even before a draft is prepared. There is further consultation on the draft, followed by a mandatory public hearing. This is accompanied by very engaging and effective public accessibility to the marine plan (e.g. Marine Plan brochure and a marine plan quiz). It is regarded as a relevant and important document for its citizens. The marine plan itself is portrayed as part of a vibrant marine planning process with a significant role in shaping Belgium's future development. The adoption of the second marine plan for Belgium in 2020 adds weight to this assertion.

Good Practice

The Belgium Plan could be regarded as comparable to a regional marine plan in Scotland in size. The marine planning process appears integral to the sustainable development environmental management processes for Belgium. Good practice can be identified as the quick turnaround time for a review of the plan. Lessons to learn is the high profile and positive messaging round the plan and its accessibility and relevance for all. The coasts and seas are so important to Scotland that enhanced visibility of marine plans and their relevance to all could improve acceptance of marine planning processes and enhance wider engagement.

English Marine Planning System

Legislative context

The [Marine and Coastal Access Act 2009](#) created a new system for marine management for UK waters. The [Planning Act 2008](#) is also relevant for Nationally Significant Infrastructure Projects offshore.

Relevant Policy

High Level Marine Objectives Policy objectives for marine planning were issued to coincide with the passing of the 2009 Act. 'Our Seas -a shared resource. High level marine objectives' (2009) DEFRA. This was followed by the [Marine Policy Statement](#), which was a requirement of the 2009 Act.

Marine Policy Statement

Background

The high-level objectives were used to underpin the UK's first **Marine Policy Statement (MPS)** (2011). The MPS is a national (UK) marine policy document which was a requirement of the MCAA and sets out general policies for 'contributing to the achievement of sustainable development in the UK marine area' ^{xiii}. It provides a framework for individual marine plans which must be consistent with the MPS.

Policy authorities

The MPS was prepared by all the policy authorities the Secretary of State, the Scottish Ministers, the Welsh Ministers and the Department for Environment in Northern Ireland acting jointly, but with DEFRA as lead authority.

Marine Policy Statement 2011

The current Marine Policy Statement (MPS) was adopted and published by all policy authorities in March 2011^{xiv}. It requires the four administrations in the UK to produce marine plans in the context of the MPS. It also provides an overarching policy context for decision-making and for those areas not yet covered by an adopted plan it is the primary marine policy document.

MPS: content

The MPS sets out the process for developing marine plans which, among other things, should be "based on an ecosystem approach, participative and informed by data provided by consultees, stakeholders, regulators and relevant experts"^{xv}. It also sets out economic, social and environmental considerations.

MPS Key topics and their issues for marine plans include:

- marine ecology
- air quality
- noise
- seascape
- archaeology
- climate change
- coastal change/flooding

MPS Policy objectives for marine environment activities including

- marine protected areas
- energy production and infrastructure

-
- ports and shipping
 - aggregates
 - dredging
 - cabling
 - aquaculture
 - water management and wastewater disposal
 - tourism and recreation.

English Marine Regions

The UK marine area is divided into eight marine planning regions.

For England this is:

- ***English Inshore Region***
- ***England Offshore Region***

The MCAA 2009 extends powers of plan making and licensing to the mean high-water mark while the jurisdiction of land use planning extends to the mean low water mark thereby creating an intertidal zone in which both regimes are operative.

Marine Planning Authority

The [Secretary of State for Environment Food and Rural Affairs](#) is the marine planning authority (MPA) for the English marine regions.

The MPAs can delegate marine plan functions to another public body and in England since 18 March 2010 marine planning in England has largely been the responsibility of the Marine Maritime Organisation (MMO) with the relevant functions having been delegated by direction by the Secretary of State for Environment, Food and Rural Affairs.

Marine Management Organisation (MMO)

The [MMO](#) was founded in 2010. The specific functions delegated to the MMO are set out in the schedule which accompanies the delegation direction^{xvi}.

MMO Duties

The MMO is the body charged with responsibility for producing marine plans and with administering marine licenses in England. It is an executive non-departmental public body sponsored by DEFRA. It has a Board and a Chief Executive heading an organisation based in North East England with offices round the country, mainly in coastal locations, which conduct both planning and licensing activities.

Table 5 MMO Marine Plan Functions

Function	Provision in the Act	Conditions
To prepare marine plans (and amendments to marine plans) for the English inshore and offshore region, having regard to matters set out in Sch 6, para 9	Ss 51 and 52 and Sch 6, para 9	The MMO must comply with the relevant provisions of Sch 6. The MMO only to prepare amendments to a marine plan if the Secretary of State agrees.
To notify related planning authorities	Sch 6 para 1	
To prepare, publish and keep under review statements of public participation (SPPs) and take all reasonable steps to comply with them	Sch 6 para 3, 5-7	The MMO must submit draft SPPs to the Secretary of State for approval before publication
To seek expert advice and assistance (to include the convening of consultative groups)	Sch 6 para 8	
To carry out sustainability appraisal of its proposals for inclusion in a marine plan and to publish a report of the results of the appraisal	Sch 6 para 10	
To publish and prepare consultation drafts of marine plans	Sch 6 para 11	The MMO must submit the consultation draft to the Secretary of state for approval before publication
To consider representations made about a consultation draft when settling the text of a marine plan	Sch 6 para 12	
To settle the text of a marine plan for adoption and publication	Sch 6 para 14	(1) The MMO must have regard to any recommendations by an independent investigator and to any reasons given to such recommendations (2) The MMO must liaise very closely with the Secretary of State and must not settle the final text without the approval of the Secretary of State

To prepare and arrange for the publication of the changes made to the marine plan between consultation and adoption, reasons for the changes and reasons for not implementing any recommendations by an independent investigator	Sch 6 para 15	
To arrange for the publication of a marine plan	Sch 6 para 15	The decision to publish must be taken by the Secretary of State (section 55(6)(a))
To keep matters relevant to marine planning under review	s 54	
To monitor and report on effects and effectiveness of marine plans	s 61	The decision to lay and what to lay under s 61 (1)(b) and (c) must be taken by the Secretary of State

English Marine Plans

In England a regional approach has been adopted. All plans are developed by the MMO.

Marine Plans

2014 – East England: Offshore and Inshore (adopted)

2018 – South England: Offshore and Inshore (adopted)

2020 – North East South West and North West England: Offshore and Inshore (public consultation completed and due for adoption 2021)

2020- South East: Inshore only (public consultation completed and due for adoption 2021)

Offshore and inshore plans are combined in a single plan, except for South East England which has an inshore plan only.

Each English marine plan in England follows a similar style: although this has been streamlined and refined over the last decade. They all include:

- vision and objectives
- policies for economic growth, social benefits and environmentally sustainable development
- sections on specific marine activities.
- implementation, monitoring and review of the plan and its policies.

Marine Licences

UK public authorities in general need to have regard to the statutory marine plans and this includes the marine licensing body. The MMO has responsibility for licencing activities in the marine environment.

The activities that require licences are:

- construction works
- dredging
- deposition of material
- incineration
- removal of material

Other licenses may be necessary if wildlife or habitat impacts are possible.

Applicants for marine licences submit applications to the MMO and are required to advertise their proposal. The MMO will consult relevant bodies and decide in accordance with appropriate marine plan policies (the MPS and other existing statutory marine plan in each area), unless relevant considerations indicate otherwise. Where licences are granted, they are subject to conditions to mitigate impacts and where the proposal has complex implications the authority may hold a public inquiry. Decisions that are disputed by the applicant, in whole or in part e.g. the conditions, may be appealed and determined by an independent body. In England this is the [Planning Inspectorate](#) (PINS). The decisions made for licensing applications are published on a public register.

Table 6 Marine Licensing Process in England

<i>Marine Licensing process</i>	
	Submission of application
	Advertisement
	Consultation
	Apply marine plan polices and other relevant considerations
	Public Inquiry (complex applications only)
	Decision: with reasons if refused with conditions if approved
	Appeal to Planning Inspectorate (if disputed)

Nationally Significant Infrastructure Projects (NSIPs)

In England (and Wales) designated [Nationally Significant Infrastructure Projects \(NSIPs\)](#) which may be marine or terrestrial (or both), as designated under the Planning Act 2008, are subject to [National Policy Statements \(NPSs\)](#) and where these are relevant, projects must be determined in accordance with the NPS, having regard to the MPS. The [2008 Planning Act](#) established a planning regime for NSIPs.

Applications are handled by an executive agency of a government ministry, the Planning Inspectorate (PINS). The unique aspect of this Act is that it provides for the determination of applications for development consent in both the marine and terrestrial environments. This is further enabled by a provision in the Act for applicants, in England only, to identify not only the major infrastructure development for approval but also to include associated development, for example in an application for an offshore wind farm the cable connection and onshore electricity sub-station may also be included. Such applications would consequently include both a marine and terrestrial element.

In England a [Coastal Concordat](#), agreed between DEFRA, other government departments, the MMO and the Local Government Association sets out principles for joint working across the coastal zone. It provides for a single point of entry into the regulatory system, and the identification of a lead authority.

Differences

The English and Scottish systems are very closely aligned due to the same primary legislation in the form of the 2009 Act. The plan making process and the style of plans are similar. The requirement in both jurisdictions is for coverage of the entire marine area by a marine plan. Public bodies in England and in Scotland must take the marine plan into account in their decision-making processes. It is a plan-led system, but there is discretion to depart for the plan. Marine planning in both countries started at the same time.

The main differences are that England does not have a national marine plan. All marine plans in England are developed by the MMO. There is no requirement to identify and develop marine planning partnerships. Aquaculture in Scotland is part of the terrestrial planning regime.

Both England and Scotland have a disconnect between marine and terrestrial planning. Both recognise the issue and have instituted various way of improving the processes. It is a difficult process to align a long-standing regulatory regime such as terrestrial planning, with the relatively new process of marine planning. A Coastal concordat exists in England to coordinate with local authorities. In Scotland there is a Scottish Coastal Forum to coordinate the existing coastal partnerships.

Good practice

The expertise of the MMO in developing marine plans and the uniformity in terms of process could be regarded as good practice. This contrasts with steps and processes required to establish a Marine Planning partnership in Scotland before the process of marine planning can begin. This delays the development of regional marine planning in Scotland and these steps and processes do not exist in England.

The existence of Coastal Concordat is a good coordinating vehicle. An enhanced role for the Scottish Coastal Forum, linking local authorities and the coastal partnerships could facilitate coordination for coastal planning in Scotland.

Norwegian Marine Planning System

Relevant legislation

Marine spatial planning in Norway is combined with marine strategy in integrated marine management plans. Norway has integrated management plans for the Norwegian part of three marine planning regions: Large Marine Ecosystem (LME)

- North Sea
- Norwegian Sea
- Barents Sea – Lofoten area

These integrated marine management plans, have until recently been three separate plans, had each been developed and revised at different times since 2006. In April 2020, the three integrated marine management plans were combined^{xvii}. The Minister of Climate and Environment [approved revisions](#) to Norway's integrated marine management plans and for the three plans to consolidated into one document.

Legal context for marine planning

The integrated marine management plan in Norway has no foundation in law. There is no legal requirement to adopt such plans and they do not have legal status. The integrated marine management plan, however, is regarded as an important policy document. It is developed by the Norwegian Ministry for the Environment. Publication is by way of a Report (White Paper) to the Storting (Norwegian Parliament). Although unlikely to develop from a white paper to a law it is evidence political will to sustainably manage the use of the Norwegian seas^{xviii}.

Relevant Policy

Norwegian now has one large scale marine plan: [the integrated marine management plan, Barents Sea–Lofoten area, the Norwegian Sea and the North Sea and Skagerrak \(2020\)](#). It aims to achieve holistic and ecosystem-based management for Norway's' marine areas. It provides guidance for the public management of different marine sectors through more detailed, sector-specific management laws and processes.

The [Norwegian Regional Planning Strategy](#) is a national planning strategy. This document sets out high priority areas for planning, identifying areas that require coordination and collaboration across Norway.

Regional marine planning

Norway has two levels of local government: county and municipal. The country is divided into 19 counties (Regions). At local level it is further divided into municipalities. There 275 coastal municipalities.

The [Planning and Building Act 2008](#) (PBA) regulates regional and municipal planning. County Councils and Municipal Councils have competence under the PBA to adopt both municipal and county plans landward of the baseline and out to 1 nm.

A regional plan may apply to the whole county; parts of the county, or it may address more specific topics for all or parts of the county. The counties can also adopt a regional thematic plan across the land / sea boundary. Regional plans may differ in terms of geography and theme, but they are all similar in terms of treatment and impact. The regional plans provide strategic guidance for the more detailed statutory plan at municipal level.

An example of a regional plan relating to aquaculture planning is:

[Regional Kystsoneplan for Sunnhordland og ytre Hardanger, 2017](#)

Regional Kystsoneplan for Sunnhordland og ytre Hardanger, 2017.

(Southern Hordaland and Western Hardanger, Norway west coast)

The regional plan was developed for an area of extensive and intensive aquaculture production. It has been subject to a temporary prohibition order due to the impact of sea lice. The regional coastal plan included thematic maps and zones for aquaculture development. This facilitated expansion of aquaculture in areas with limited conflicts with other interests. Multi-use zoning was also identified

[Regional Kystsoneplan for Sunnhordland og ytre Hardanger](#) is regarded as a runner example of best practice as a regional plan, designed to address the particular conflicts and issues of intense aquaculture development. It was highly contentious at the time with challenges being made to the extent of its authority and its format. Objections about specific proposals were filed against the plan from the municipalities. The Ministry amended the plan in light of many of the objections before adoption.

Another recent Norwegian regional plan appears to have been less contentious.

[Sogn og Fjordane: A regional strategic plan for the coast.](#)

Municipal Planning

Each municipality is required under the PBA to prepare^{xix}:

- a municipal planning strategy
- a municipal master plan
- a zoning plan

Together these take the form of a land use plan which normally does not extend to the 1 nm limit in terms of land use designation. Permits for activities that straddle the land/ sea boundary are be considered on their own merits and according to any sector guidance.

Implementation of the marine plans

The integrated marine management plan. Barents Sea–Lofoten area, the Norwegian Sea and the North Sea and Skagerrak (2020) provides a framework, coordination and a setting priorities for management of the plan area. They contribute to increased predictability and strengthen coexistence between the industries that are based on the use of the sea areas and the utilization of the sea areas resources.

The purpose of the management plans for the Barents Sea–Lofoten area, the Norwegian Sea and the North Sea and Skagerrak is to provide a framework for value creation through sustainable use while maintaining the high environmental value of Norway’s marine areas.

Implementation of the plan is by application of existing sector regulations, for example, the established activities of fisheries and aquaculture, shipping and oil exploration and extraction. It provides guidance for the public management of different marine sectors through detailed, sector-specific management laws and processes. The integrated marine management plan also guides decision makers on environmental considerations and the need to protect marine ecosystems.

The integrated marine management plan also provides a [framework](#) for the development of emerging industries such as offshore wind power, extraction of minerals from the seabed, carbon storage below the seabed and hydrogen production.

[Commentary](#) on planning in the coastal zone:

“Many coastal regions and municipalities in Norway have put significant effort into planning the coastal zone, and many spatial plans have either been newly developed or revised. However, the status for both the current work and the quality of the spatial plans vary considerably. This study reveals the varying practices in many municipalities and highlights the need for a clarification on several topics.”

Norway: Key findings

The size of Norway, its geographical location and the type of issues that it is addressing in marine planning are very similar to Scotland. The type hierarchical structure of plans in Norway is similar to Scotland. There are a number of types of marine plan, but there is no national marine plan nor a requirement for every area to produce a marine plan.

The system of marine governance in both Norway and Scotland is made up of a complex patchwork of relationships between national, regional and local authorities. In both jurisdictions, in addition to horizontal structures, a vertical hierarchy has developed that provides national strategic guidance for the marine environment, as well as for sector developments^{xx}.

Norway’s approach is implementing marine planning in a different way to Scotland. It has about 15 years’ experience of creating integrated management plans for large areas of Norway’s Northern waters which have particular challenges balancing environmental and development pressures. Although non statutory, they appear an effective management tool, with central political support and regular review.

At local level marine planning is gaining momentum. The targeted approach of sector and /or locational planning has been successful for aquaculture and is now guiding offshore wind development. There has been some initial resistance to the regional plans from the more local

municipalities. These municipalities are now beginning to plan within the framework of the regional plans. These plans are coastal extending only to 1nm.

Good practice

The targeted approach in Norway is interesting. The large integrated management plans are created for marine ecoregions, rather than jurisdictional or administrative boundaries. Plans have been developed there because of specific needs in management, conservation and development.

The use of the existing local government bodies, particularly at regional level to create plans that cross municipal boundaries is noted. These plans can also address coastal issues, such as aquaculture. It is a pragmatic approach and addresses key issues, rather than planning for all aspects of the marine environment.

The targeted approach appears to have enhanced the role of the marine planning in terms of its implementation in decision making. The sectors and local areas having been integral to the plan making process, including in challenging both plan policies and processes. This process itself, including the challenges, may have enhanced the role of the marine plan. The interventions can raise awareness of the plan and the policies. Effective reconciliation of objections can provide confidence in the outcome and the final plan.

New Zealand Marine Planning

Relevant Legislation

Coastal planning (to 12 nautical miles) has been a statutory requirement as part of a wider planning and resource management regime in New Zealand since the implementation of the [Resource Management Act 1999 \(RMA\)](#).

The only marine plan in New Zealand is the [Hauraki Gulf Marine Plan](#) 2016 and it is non statutory.

Relevant Policy

The [New Zealand Coastal Policy Statement \(NZCPS\) 2010](#) provides national guidance for the development of coastal plans.

Key marine planning bodies

There is a tradition of strong regional government in New Zealand. There are 16 Coastal Marine Areas, which are also the Regional government areas. Regional Government is responsible for land, coastal and marine area plans and management. Coastal plans can form part of another Regional Plan (e.g. [Auckland Regional Plan](#)).

Duties relating to marine planning required by the legislation.

The RMA requires that Regional Government is responsible for land, coastal and marine area plans and management. The plans designate areas for particular uses and activities. They also designate marine protected areas. Designations in the draft plan can be appealed to the [Environmental Court](#).

Coastal permits are required for activities in the coastal area unless identified in the plan as a permitted activity.

The [Sea Change – Tai Timu Tai Pari Hauraki Gulf Marine Spatial Plan](#) was released in December 2016. It contains a set of proposals for improving the health and mauri of the Hauraki Gulf Marine Park.

The non-statutory plan was developed **over 3 years** by a 14-member stakeholder working group. The group represented mana whenua, environmental groups, and the fishing, aquaculture and agriculture sectors.

The plan aims to improve the health of the Hauraki Gulf Marine Park for future generations. It includes proposals for:

- marine protection and fisheries management
- habitat restoration
- catchment management
- localised co-management
- opportunities for economic development

Table 7 Timeline for the development of Hauraki Gulf marine plan

Development Timeline	Sea Change: Hauraki Gulf Marine Plan
2013-2016	14 stakeholder member working group developed Marine plan for Hauraki Gulf
December 2016	Marine Plan published
November 2018	Government announce response strategy to plan
July 2019 – present	Ministerial Committee established to progress implementation of Sea Change

Differences/Lessons learned/ Good practice

Notwithstanding that the starting point for marine planning in New Zealand is very different, there are similarities between New Zealand and Scotland, which allow examples of good practice to be identified.

The RMA has been implementing the ecosystem approach for over 20 years. This approach is also enshrined in Scotland in the 2009 and the 2010 Acts. New Zealand, therefore, provides examples of good practice in terms of a holistic approach which encompasses marine and land management.

The creation of a plans by New Zealand regions out to 12 nm dovetails with the regional planning requirements for Scotland. New Zealand has complete coverage of coastal plans. Since commencement in 1999, plans have been revised and different forms have been adopted. The process is now well established, having been in existence for over 20 years. The time and culture

change required to adopt a new planning system should be recognised as a challenge which the system in Scotland is still going through.

The main difference between the plan system in New Zealand and Scotland is that the New Zealand plans combine zoning designations and guidance. Designations in draft plans can be challenged in the Environmental Court. Activities designated in the zoned areas do not require permits under the RMA.

The [Hauraki Gulf Marine Plan \(2016\)](#) is an example of a cooperative process to develop proposals for a nationally important marine area. The response from government to take forward the proposals has been slow. This is, however, over and above the existing comprehensive system of resource management planning which already exists in New Zealand.

4.3 Assessment of case studies against international guide to MSP

The table below shows an assessment of each of the case studies against an international guide: 10 steps in the MSP process ([UNESCO 2009](#)). It demonstrates that each case study country has, through a variety of different routes, developed a marine plan. This has occurred even although the first step: defining and the context and authority for MSP has been varied. The first requirement is to set out the need to introduce MSP. There is also a requirement that authority to create the plan and implement it is established. Authority in this context meaning '(1) authority to plan for MSP; and (2) authority to implement MSP'. The marine plans considered in this study, however, have been developed both with and without justification of the need for a marine planning system, with and without authority; as well as through a variety of routes.

It is an important achievement to have developed marine plans. But, as the guide to MSP establishes, it is not the end of the process. The three final steps of implementing and enforcing a plan; monitoring and evaluating performance of the plan and adapting the marine spatial planning process have not yet been achieved in most countries. This indicates that for most jurisdictions they are only about two thirds of the way through the marine planning process and that implementing the plan, reviewing it and then adapting it, are essential processes that still require to be completed.

Belgium has achieved the full [MSP cycle](#), but it has a comparatively small marine area. New Zealand has undertaken coastal planning out to 12 nm as part of a wide process of resource management. A requirement to augment this with a non-statutory marine plan, in a particular area ([The Hauraki Gulf Marine Plan](#)) could indicate that the system, although established, is insufficient for certain important marine areas and further detailed planning processes are required.

Table 8 Ten steps in the MSP process (UNESCO 2009) - Assessment of case studies

International Guide to MSP	Belgium	Canada	England	New Zealand	Norway

Defining context and authority for MSP.	Yes	Yes: National No: Provinces	Yes	Yes: In context of resource management	Limited
Obtaining financial support.	Yes	Limited	Yes	Yes	Yes
Organising the MSP process through pre-planning.	Yes	Yes	Yes	Yes	Yes
Organising stakeholder participation.	Yes	Yes	Yes	Yes	Yes
Defining and analysing current conditions.	Yes	Yes	Yes	Yes	Yes
Defining and analysing future conditions.	Yes	Yes	Yes	Yes	Yes
Developing a marine spatial plan.	Yes	Yes	Yes	Yes	Yes
Implementing and enforcing a marine spatial plan.	Yes	No	Limited	Yes as part of resource management	Limited
Monitoring and evaluating performance of the plan.	Yes	No	Limited	Limited	Yes
Adapting the marine spatial planning process.	Yes	No	No	No	Limited

The relatively recent introduction of marine planning can be contrasted with the town and country planning system. The [Town and Country Planning Act 1947](#) introduced the concept of development plans to England and Wales. Originally intended to be completed within a three-year period, they in fact took until the early 1960s to be approved. The process of reviewing and updating development plans has been a continuous process since then.

For marine planning, therefore, this is just the start of the process. The first generation of marine plans in the UK has identified opportunities, catalogued the constraints and set a context for decision-making. The next generation must provide greater certainty and more detailed guidance, for example, on location and quantity of provision for energy projects, inter-connections and thresholds for environmental impact. ^{xxi}

An assessment of Scotland’s marine plans against the international guide to MSP has also been undertaken and leads to the same conclusions. Namely, that it is too early in the marine planning process to evaluate success. However, Scotland is in a strong position, and it is an important point to highlight that for both national and regional marine planning in Scotland there is a clear defining context and authority to develop marine plans. This stems from the legislative process set out in the 2009 and 2010 Acts.

The legislation also requires implementing and enforcement, monitoring and evaluation followed by adaptation of the MSP processes. Implementation of the National Marine Plan (the only adopted plan) has been occurring, but progress is limited. It has been suggested that this is due to unfamiliarity of it as a policy tool as part of the licensing process. The high-level nature of policies at national level can also lack the detail necessary to address local issues ^{xxii}.

Table 9 Ten steps in the MSP process (UNESCO 2009) - Assessment of Scotland

International Guide to MSP/	Scotland’s National Marine Plan	Scotland’s Marine Plans	Regional
Defining context and authority for MSP.	Yes	Yes	
Obtaining financial support	Yes	Limited	
Organising the MSP process through pre-planning.	Yes	Yes	
Organising stakeholder participation	Yes	Yes	
Defining and analysing current conditions.	Yes	Yes	
Defining and analysing future conditions	Yes	Yes	
Developing a marine spatial plan.	Yes	Yes	

Implementing and enforcing a marine spatial plan	Limited	Not at that stage
Monitoring and evaluating performance of the plan	Yes	Not at that stage
Adapting the marine spatial planning process	No	Not at that stage

4.4 Relationship between terrestrial and marine spatial planning

This final section on governance considers the relationship between terrestrial and marine spatial planning. It explains the importance of a strong relationship between the regimes. The assessment for each case study area is illustrated in Table 10 and some conclusions are drawn.

The UK MPS, in setting out the process for developing marine plans, advocates cooperation with terrestrial planning regimes. However, this has proved difficult to implement in practice. It has been argued that a sound appreciation of the land sea interface is required for both marine and terrestrial planning systems to work as part of a bigger whole or system of systems. This connection is crucial... to ensure the resilience of ... coastal infrastructure, manage energy needs and maintain a productive and healthy relationship with the marine environment^{xxiii}. In Scotland there is a clear opportunity for this with the ongoing development of National Planning Framework 4, which will include the updated Scottish Planning Policies and the review of the [Scottish National Marine Plan](#) by 2021.

The position in Scotland is different to that in England, in that the extension of statutory planning controls over aquaculture recognises the links between terrestrial and marine planning. It also highlights that offshore development has onshore development implications^{xxiv}. In Scotland, specific guidance for planners sets out the relationship between the two systems^{xxv}. It is considered that this could usefully be updated to reflect recent experience. The information could be provided in less technical terms, as well as a more user-friendly format.

The New Zealand system, where a holistic approach to resource management has been in place for over 20 years stands out in terms of a strong relationship between terrestrial and marine management. The extension of the planning process to 12 nm avoids the disjuncture between two regimes. The zoning system which operates in coastal waters and on land in New Zealand under the RMA, however, is at odds with the tradition of a discretionary planning system operating in the UK.

The Norwegian system allows an integration of land and coastal planning to 1 nm, but this appears to be limited in practice in terms of zoning plans adopted by the municipalities. Much of the marine development (including aquaculture) has to date been within the base line boundary due to the fjordic nature of Norwegian geography. Aquaculture in Scotland being part of the terrestrial planning regime is comparable to the system in Norway, although in Scotland the powers extend to 12 nm.

Both the New Zealand and Norwegian systems in terms of adopting a holistic ecosystem approach that straddles the land sea divide (New Zealand) and extending the local municipality authority to 1 nm demonstrate good practice that could be drawn on to enhance the relationship between terrestrial and marine planning. The foundations for developments in both these directions already exist in the Scottish marine and terrestrial planning system. This together with more active and direct alignment between the two regimes could enhance the implementation of marine planning in Scotland.

The existence of Coastal Concordat in England is a strong coordinating mechanism. An enhanced role for the Scottish Coastal Forum, linking local authorities and the coastal partnerships could also facilitate coordination for coastal planning in Scotland.

Table 10 Relationship between terrestrial and marine spatial planning

	Belgium	Canada	England	New Zealand	Norway	Scotland
Statutory terrestrial planning	Yes	Yes	Yes	Yes	Yes	Yes
Statutory marine planning	Yes	Yes	Yes	Yes as part of Resource Management	No	Yes
Terrestrial planning extend to the sea	Intertidal area	Intertidal area	Intertidal area	Yes to 12 nm	Yes to 1nm but little used	Intertidal area
Policy/guidance on terrestrial/marine relationship	N/a		Coastal Concordat	New Zealand Coastal Policy Statement	White Papers	Circular 1/2015
Non statutory coastal partnerships and planning	N/a	Yes	Yes	No	No	Yes

4.5 How is protection and enhancement of the marine environment achieved through marine planning?

A number of drivers towards conservation of the marine environment exist, including a global drive towards establishment of MPAs, tracing back to 2002 [World summit on sustainable development](#). There is also the overarching environmental legislation from the EU, as well as the worldwide move to implement marine planning. Marine planning can provide a mechanism to link

to important wider seas environmental measures such as marine litter, including ongoing measures on plastic; water quality, through river basin management processes and delivering good environmental status.

Marine protected areas

Protected areas are ‘clearly defined geographical space recognised, dedicated and managed, through legal and other effective means’^{xxvi}. Marine Protected Areas (MPAs) are considered crucial when adopting an ecosystem approach and are regarded as a key component of marine spatial planning^{xxvii}. There has been global drive towards establishment of MPAs, nevertheless, in many countries, including the UK, MPAs were a recognised but underused form of marine conservation and management. For England and Scotland, a new regime for designation and management of MPAs were included in the [2009](#) and [2010](#) Acts. However it is recognised that MPAs on their own are insufficient to preserve marine ecosystems. Spatial protection measures that support the establishment of new activities or the continued existence of specific activities within certain areas can however contribute to biodiversity protection^{xxviii}.

Specifically, in relation to marine planning governance legal environmental principles and approaches can be included in legislation and endorsed by policy. Canada’s Oceans Act 1996 and [Oceans Strategy](#), specifically include sustainable development, integrated management and the precautionary approach. The New Zealand RMA adopts the ecosystem approach, as does the 2009 and 2010 Acts for the UK and Scotland. Norway promotes adaptive management illustrated by its recently revised [management plans](#).

Implementing environmental principles, even if enshrined in legislation or endorsed in policy is challenging. The recognition of such principles is an important foundation for marine planning to build and enhance protection of the marine environment as the governance develops and matures. The marine planning system has the ability to provide a conduit to achieve environmental measures.

Within the UK marine plans must meet the requirements of the UK Marine Policy Statement (and the high-level marine objectives therein). Marine planning has focused on policy mechanisms to ensure licenced activity meet criteria designed to ensure sustainable development of the marine environment. Management measures within MPAs are not included within marine plans in Scotland, England or Wales, and do not include fisheries management measures. In contrast Belgium’s incorporate the management of fisheries within their marine protected area (‘Flemish Bank SAC’) within the 1st edition of their marine plan. These areas were subsequently rejected by the EC, for a range of reasons, including a lack of agreement with other nations with historical access rights. In the 2nd edition of their plan they included search areas where management measures would be considered. The plan committed to a minimum area that would be protected, but the area of search was considerably larger than proposed in the 1st edition.

In New Zealand and Canada marine planning is also used as a mechanism to identify wider marine management challenges, including fisheries, which are outside the scope of marine

licensing. In this way marine planning is used as a mechanism to implement wider sustainable use of the marine environment.

In Scotland, as part of the base line marine assessments, so called 'state of the environment assessments' undertaken by Clyde and Shetland Regional Marine Plans, Environmental Action Plans were developed which highlighted data gaps and marine environmental challenges. Within the action plan mechanisms were identified to address data gaps and management challenges. Many of these challenges are not exclusively related to licenced activities and cannot be solely addressed via policies enforced within the marine licensing process. Marine planning in Scotland therefore has the potential to identify wider data, marine management challenges, and work with stakeholders and relevant authorities to develop management or technological solutions.

5 Fisheries - *Can and should marine planning incorporate fisheries management measures?*

5.1 Fisheries Key findings

Scotland, UK and international examples:

- The level and method of integration is dependent on underpinning legislation and plan purpose.
- In Scotland and the rest of the UK, fisheries management through marine plans is not possible as underpinning legislation for marine planning is limited to development proposals, which excludes fisheries. However, fisheries can be supported via marine planning.
- Internationally inclusion of fisheries in marine planning is predominantly to support/protect fishing opportunity, rather than to manage fisheries.
- There is opportunity to use marine planning or marine planning partnerships as a mechanism to identify conflicts and develop strategies to resolve them, as highlighted in Shetland, Canada and New Zealand.
- Marine planning, as well as technological advancements, has improved our understanding of the spatial distribution of fisheries which has helped to protect fishing grounds and identify conflicts.
- Without a legal underpinning marine plans cannot address impacts of fisheries on biodiversity, particularly where segments of the fishery are international (e.g. outside 6 nm).
- In highly 'zoned' plans, such as in Belgium, where fisheries are excluded from certain zones to protect biodiversity, the equivalent management is in place, or is in the process of being implemented, in Scotland (i.e. Natura sites and windfarm sites) but is not described as 'zoning'.
- All plan making processes included fisheries during consultation or on steering group.
- There have been legal challenges / barriers where marine plans were implemented without due regard to legislation or rights of fishers (e.g. Belgium and New Zealand).
- Full integration of fisheries into marine planning has been demonstrated in New Zealand but has faced legal challenges to test whether fisheries could be spatially managed by underpinning legislation.

Outside of MSP process:

- Temporal and spatial management measures used to manage conflicts between fisheries and other industries (such as dredging in Dieppe, France) and conservation (such as whales in California).
- The implementation of effective measures has included close dialogue with fishers.
- Biodiversity protection measures implemented in European sites.
- Statutory basis for management measures in all successful examples, although innovative measures have often started as voluntary.
- Innovative fisheries management can be implemented within or outside of marine planning process, but marine planning legislation is not normally the legal mechanism (exception New Zealand). In most instances existing fisheries legislation have been utilised.

5.2 Fisheries management

The integration of fisheries into marine planning might be considered in three parts:

- Protection of fisheries and associated onshore communities and industry
- Management or integrated management of fisheries within marine planning or marine conservation
- Management of spatial and temporal conflict between fishing segments

5.3 Fisheries in Scotland

In Scotland fisheries can be considered to comprise three fleet segments:

- Static or passive gear e.g. creels/ pots targeting shellfish e.g. crab, lobsters, Nephrops
- Dredge or trawl targeting fish e.g. cod, haddock, monkfish or shellfish e.g. scallops, Nephrops)
- Pelagic (mid water) targeting mackerel and herring

Fisheries takes place inshore (within 6nm) and offshore (6nm to EEZ). Larger vessels (over 12m) are fitted with [vessel monitoring systems \(VMS\)](#) which has helped understand the spatial use by larger vessels. The requirement for inshore vessels to be fitted with inshore VMS units, is currently being implemented by Marine Scotland Science. This would replace or complement previous mapping approaches, such as [ScotMap](#).

Within 6nm, fishing is restricted to UK vessels. Outside of 6nm EU nations have historic access rights, and outside of 12nm the common fisheries policy applies. Future access by EU and non-EU nations has yet to be agreed after Brexit, as after the end of the transition period (31 December 2020) the future access of foreign vessels is subject to negotiations between the UK, EU and other independent coastal states (e.g. Norway, Iceland, and Faroe Islands) .

Fisheries management in Scotland

In Scotland fisheries management measures (spatial, temporal and technical) are normally implemented for:

- stock management,
- protection of habitats and species.

In addition, some types of developments receive statutory protection, once consented, which may restrict or exclude fisheries:

- Cables and pipelines
- Oil and gas installations

In Scotland conservation fisheries management measures include:

- regulating orders providing spatial and temporal measures (e.g. Shetland Shellfish Management Organisation)
- spatial fisheries restrictions in marine protected areas (MPAs) e.g. European sites, nature conservation MPAs
- Temporal measures (e.g. [real time closures to protect juvenile fish](#))

- Restrictions of gear type and days at sea for stock management and reducing impact on non-target species

In addition, the Scottish Government is also consulting on measures to:

- protect the priority marine features (PMFs) outside of MPAS ([consultation](#))

Examples of management measures implemented in Scotland are shown in **Table 11**.

Table 11 Examples of spatial, temporal and technical measures implemented in Scotland

Category	Measure	Aim	Purpose
Temporal	Realtime closures triggered by direct sampling of catches or LPUE, closures cover 56 square nm for 21 days	Reduce catch of juvenile fish e.g. cod	Management of fisheries
Temporal	Days at sea restrictions – Common Fisheries Policy	Manage fishing effort	Management of fisheries
Temporal	Restrictions on permitted fishing hours- Shetland	Manage fishing effort and safety	Management of fisheries
Spatial	Exclusion of fisheries from cables and well heads	Safety	Management of conflict
Spatial	Spatial restrictions per gear type in MPAs	Prevent physical damage to seabed	Biodiversity/conservation
Technical	Net size	Reduce catch of juvenile fish and bycatch	Management of fisheries and conservation

Marine planning and fisheries management

Scotland’s National Marine Plan provides for the protection of fisheries grounds, and fisheries dependent communities (Policy Fisheries 1). In addition, [the Marine Policy Statement](#) aims to ‘support the continued existence of the UK’s inshore and offshore fishing industry within the development of the marine plans’.

The NMP does not provide a statutory basis to directly manage fisheries, as fisheries do not require a Marine Licence to operate. In Scotland there are examples of integration of fisheries into marine planning, for instance the voluntary creation of statutory closed areas with high conservation value by the Shetland inshore fishery, driven by the development of marine planning locally^{xxix}. Regional marine planning can provide an opportunity to identify specific conflicts between industries and between fleet segments, by bringing stakeholders together but under the current legislation only non-fishing activity would be managed.

Within Scotland, examples of fisheries management, with the exception of South Arran Marine Protected Area and SSMO in Shetland, are dominated by central government processes, rather

than local measures. [Regional Inshore Fisheries Groups \(RIFGs\)](#), **Figure 4**, have been set-up by the Scottish Government to identify opportunities for local or regional fisheries management. [Outline structures and functions of RIFGs](#) state '*Regional Inshore Fisheries Groups (RIFGs) will be the main route for engagement between commercial fishermen and Marine Planning Partnerships and encompass elements of industry-instigated management initiatives in the Shetland, Orkney and Outer Hebrides, together with the West Coast and North & East Coast of the mainland*'. RIFGs do not normally have statutory powers, and have limited administrative resources. The exception to this is the Shetland Shellfish Management Organisation (SSMO), which via a Regulating Order, can implement a range of measures relating to fisheries management. This includes minimum landing sizes, limits on number of licenced vessels, restrictions on gear type, and areas closed to fisheries for conservation purposes.

Interaction between RIFGs and Marine Planning Partnerships

In Scotland, one of the purposes of regional inshore fisheries group (RIFG) is to represent fisheries within regional marine planning. In the Clyde and Shetland, RIFG have been represented as members of the Clyde Marine Planning Partnership and the Shetland Marine Planning Partnership advisory groups. Other fisheries organisations are also represented.

International examples suggest that marine planning can facilitate the identification of challenges (loss of biodiversity, conflicts between sectors) and can be used to develop strategies to overcome these challenges, regardless of whether underpinning marine planning legislation allows for the direct management of fisheries. In Shetland, the RIFG, the Shetland Management Organisation (SSMO) have worked with the Shetland marine planning partnership to map important inshore fishing grounds.

MPP could also be used to identify cross-sector wider sea challenges (e.g. marine litter) and solutions which incorporate fisheries (via RIFG and other fisheries groups). Where funding mechanisms exist, this could direct research into specific marine challenges, this is exemplified by Clyde 2020. In Shetland, the RIFG, the SSMO has worked with the Shetland marine planning partnership to identify areas of high biodiversity value. After the SSMO commissioned survey work to map important habitats, these areas were then subject to statutory closures (due to the Shetland Regulating Order which gives the SSMO extended powers compared to other RIFGs). These areas are now recognised and protected in policy within the draft Shetland Marine Plan. The SSMO is the only RIFG to have the power to implement statutory fisheries management measures, therefore any potential measures identified would require action by an outside agency (such as Marine Scotland). This contrasts to England where Inshore Fisheries and Conservation Authorities (IFCAs) have powers to initiate fisheries management measures via bylaws.

In England IFCAs receive local government financial support, and in Shetland the SSMO has financial support via licence fees, local government (SIC) support and has gained external funding for specific projects. In contrast RIFGs have limited financial resource to undertake data collection.

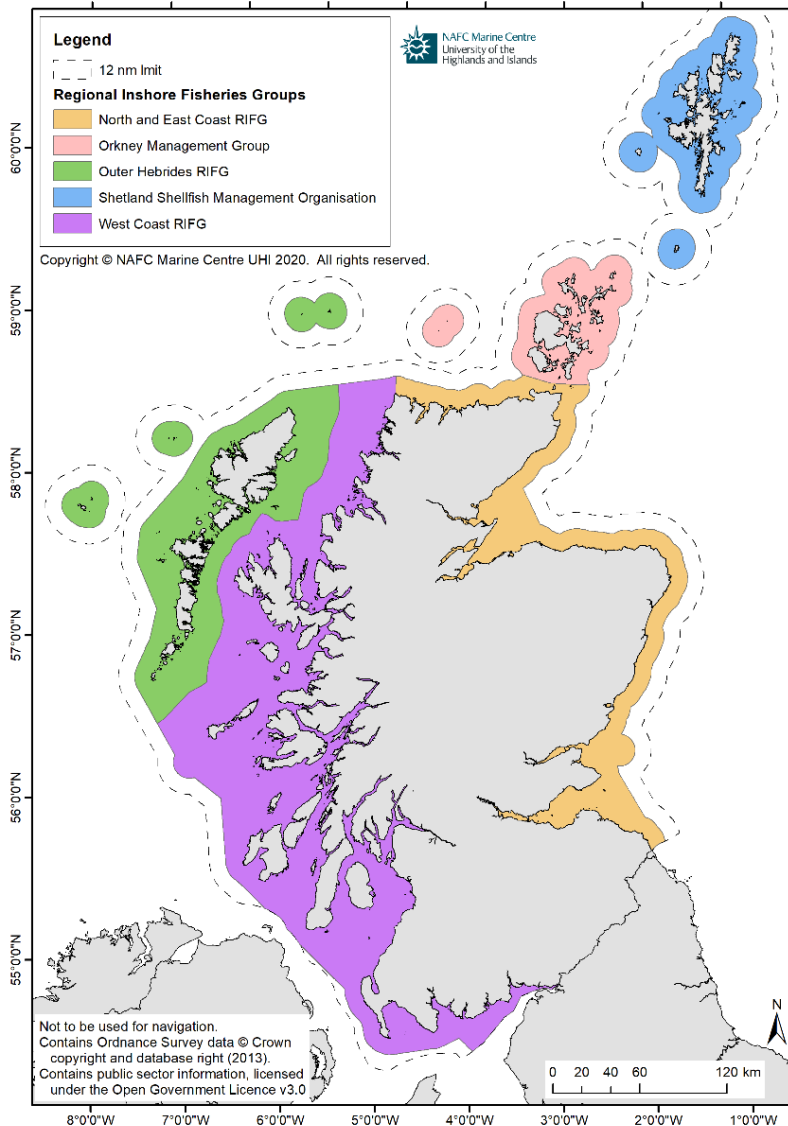


Figure 4 Scottish Regional Inshore Fisheries Groups (RIFGs)

5.4 Lesson drawing from Case study examples

International examples suggest innovative approaches to fisheries management have been implemented within (**Table 12***Error! Reference source not found.*) and outside (**Table 13**) of marine planning processes. Whilst some approaches were initiated voluntarily, all examples examined are now implemented on a statutory basis. This is also reflected in Scotland, where voluntary management measures implemented in Shetland to protect seabed habitats, initiated by fishers, were then adopted on a statutory basis. Where specific fisheries management measures have solely been implemented via MSP, there are examples of successful legal challenges or rejection of proposed measures e.g. in New Zealand and Belgium.

Belgium

Key findings:

- Highly zoned plan

- In the first edition of the marine plan management of specific fisheries types (bottom trawling) in parts of European nature conservation sites (legal requirement across all EU nations) were included but were subject to challenge, including by other nations. These areas were not adopted.
- The second edition of the plan did not include specific zoned areas where fishing would be excluded but instead wider 'search areas' where fisheries would be managed.
- Within offshore wind farm area passive fishing methods have been promoted (previously excluded)

California, USA

The California marine protected area management plan has been subject to legal challenge, and its current status is unclear. However, management measures to reduce conflict between the Dungeness crab fishery and marine mammals have been well documented, and are still in place. Measures to reduce entanglement are detailed in Table 13, but include temporal and spatial measures. These measures have a statutory underpinning. In addition, a research programme has been initiated to develop technological measures to reduce entanglement.

Canada

Canadian marine plans are not 'regulatory' plans, as implemented in Europe. Instead, they set out strategies to achieve these certain objectives. For fisheries, an example includes:

Objective: Minimize negative ecological impacts of commercial fishing activities.

Strategy: Continue to participate in science and management discussions with federal agencies including meetings convened by federal agencies to review fisheries assessments and integrated fisheries management plans.

Examples: DFO Centre for Science Advice Pacific meetings to review fisheries, habitat, ecosystem, Species at Risk or integrated oceans management; fisheries sector planning and advisory committee.

[Haida Gwaii Marine Plan 2015](#)

As such, marine plans do not contain policies to solve specific problems, but set out a mechanism to identify conflicts and management challenges and strategies to solve them. The [Eastern Scotian Shelf Integrated Ocean Management Plan](#) states '*The Plan does not intend to replace or duplicate existing mechanisms for the protection, recovery and management of species at risk under Species at Risk Act.... The Plan may provide a useful mechanism for contributing to the implementation of recovery plans, action plans and management plans.*'

Other specific examples include identifying conflict between fisheries and cables, and identifying a mechanism to increase dialogue between these sectors.

England

Key findings:

- Fisheries management is not included within existing English marine plans.
- Fisheries protection, and protection of essential fish habitat (e.g. spawning areas) is included in marine plans.

-
- In contrast to RIFGs in Scotland [Inshore Fisheries and Conservation Authorities](#) (IFCAs) are statutory regulators and responsibilities which include development of management measures within marine protected areas (MPAs). From [2013-2018](#) they have implemented 23 new byelaws to protect MPA features, 20 additional IFCA byelaws which contribute to the protection of MPAs, 30 management measures which contribute to MPA protection.

In considering the inclusion of fisheries into the East Inshore Plan, the Plan states:

'Note that issuing a general licence to fish may be considered as a 'proposal' under the Marine and Coastal Access Act (S 58(1)). However, where an individual wishes to act in accordance with the terms of an existing licence or other consent, that individual would not be required to inform or seek any additional permission from a public authority (where consistent with current practice). This means that a fisher who elects to fish a new area that is consistent with the conditions of their general licence to fish, is not caught by the term 'proposal' as used in the East marine plans. Bringing forward a fisheries management measure such as a bylaw falls under either section 58(1) or 58(3) of the Marine and Coastal Access Act depending on whether the measure is to do with an authorisation and enforcement decision or not. However in either case, there will be other existing legislative and management requirements that determine the decision and which may carry greater weight than the plan policies.'

The current data available on fisheries is varied and unfortunately does not provide a complete view of fishing activity with a high degree of accuracy. Data showing the activity of under ten metre vessels in the inshore area is particularly limited, yet these make up a large proportion of the fleet. Work is underway to establish an improved evidence base of fishing activity, together with other sectors, in order to address these limitations. The lack of uniformity and stakeholder consensus regarding fisheries data combined with the difficulties in predicting the future of fisheries, makes formulating prescriptive marine plan policies for this sector a challenge. The Marine Management Organisation will continue to work closely with the fishing sector to assess how this challenge might be addressed in the future.'

In England engagement barriers identified by the MMO include the ability for fishers to attend all day events. The MMO undertook a multi-year project to engage 'hard to reach' stakeholders.

France, Manche Est – mer du Nord (Eastern English Channel - North Sea)

The Manche Est – mer du Nord plan implements 26 high level priority actions defined at national level, of which one is specific to fisheries. In addition, it contains the socioeconomic objective *'Consolidate maritime fishing activities by maintaining productive marine habitats in good condition and ensuring the sustainable management of the resources of the Channel and the North Sea'*.

The plan includes measures which had been developed prior to the development of the plan, which uses spatial and temporal management measures to allow fisheries and aggregate extraction operations co-exist. Coexistence is prioritised by the plan, and identification of

extraction areas should consider the timing of major fishing seasons, the presence of key fishing grounds and the presence of fisheries nursery grounds.

New Zealand

In New Zealand the regional plan '[Hauraki Gulf Marine Plan – Sea Change](#)', identifies pressures on the marine environment to develop strategies to maximise benefits from the marine environment. The plan considers the spatial and temporal measures, this includes fisheries and is one of the few examples of a marine plan which fully considers and manages all marine activities, including fisheries.

However, the role of the regional marine plan to undertake measures which include managing fishing activity has been subject to legal challenge, with the challenge centring around whether the legislation governing marine planning could also be used to spatially manage fishing activity. It was argued that this role should be limited to fisheries managers via fisheries legislation. The High Court found '*They cannot regulate fishing for the purpose of managing the utilisation of fisheries resources or the effects of fishing on the biological sustainability of the aquatic environment as a resource for fishing needs – these two matters being the jurisdiction of the Fisheries Act only.*' The appeal court found '*This decision confirms that regional councils can impose controls over fishing activities in the interests of biodiversity; whether a given control is in fact lawful will depend on how the reasoning in this decision applies in the circumstances.*'

Therefore, it was found that marine planning could be used to control fisheries activity for the purposes of biodiversity protection/ management, but not to control fish stocks (which are managed by the Fisheries Act).

Norway

In Norway the most localised scale of marine management is undertaken at the council level. As part of this process fishers are consulted to identify fishing and nursery grounds, and the Norwegian government research institute has initiated successful mapping programmes. Planning in the coastal region takes into account fisheries, and creates zones for future development which take into consideration existing fisheries use.

Wales

The Welsh National Marine Plan supports proposals that support or enhance sustainable fishing activity. It also contains policies to protect fishing ground and nursery areas, but like the Scottish and English marine plans does not contain detail of fisheries management measures implemented in marine protected areas.

Table 12 Fisheries management measures incorporated into case study marine plans

Country	Fisheries Policy		Management purpose	Scottish equivalent measure
	Protection	Management		

Belgium	Y	Y	Wider biodiversity management (subject to EU approval)	PMF consultation, SSMO closed area management measures
			Conservation-European sites	Fisheries managed in MPAs
			Passive fisheries around windfarms encouraged	Fisheries managed in all consented windfarms
Canada	Y	Y	Support cultural and traditional harvest values for local First Nations	No equivalent
			Areas closed to bottom trawling deep and/or cold water habitats	Offshore MPAs
England	Y	N	Protection of essential fish habitat and nursery grounds	Directly comparable to measures in Scotland
			Protection of fishing grounds	
France	Y	Y	Temporal measures to protect key fishing seasons	No direct comparison as currently no aggregate extraction
			Spatial measures to protect key fishing and nursery grounds	
Norway	Y	N	Zoning and identification of fishing and aquaculture areas	Important fishing areas mapped by Marine Scotland
			Mapping and protection of nursery grounds	

Table 13 Fisheries management measures developed outside of marine plans

Country		Management Approach	Management purpose	Equivalent Scottish measures
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California – crab fishery and whale entanglement	Minke and humpback whale entanglement	Spatial	Area closures	Not implemented
		Temporal	Season delay, temporal effort restrictions, Maximum of 96 hours a pot may be left unattended	Not implemented
		Technical	is investigating gear modifications and innovations which may reduce the likelihood and/or severity of marine life entanglements	Investigation currently being undertaken Scottish Entanglement Alliance'
		Effort	Reduction in effort (temporally linked)	Not implemented
England	Biodiversity management	Spatial	Feature protection within MPAs	Equivalent implemented in Scotland
		Temporal	Season closure of fisheries e.g. Bass	Real time closers for juvenile Cod

6 Finance and resource - *How can cost and benefits be balanced in marine planning, and how can academic knowledge be utilised?*

6.1 Key findings

- Resourcing of marine planning a key challenge in Scotland.
- Financing of MSP initiatives outside of Scotland appear to be higher, but difficult to make direct comparisons.
- Estimates of economic benefits of marine planning far exceed the cost.
- The development of marine planning has required the utilisation of existing and creation of new data.
- Marine planning has utilised a range of data including government programmes, academic local and user data.
- Marine planning process has highlighted specific data gaps for spatial management.

6.2 How is marine spatial planning financed?

In Scotland Regional Marine Planning is financed via Marine Scotland, with marine planning partnerships (MPP) applying for external funding to help deliver marine plans (e.g. Heritage Lottery Funding, EMFF), and direct and in-direct financial support provided by lead public bodies. Funding levels have supported 2-2.5 FTE within marine planning partnerships to deliver a marine plan. Additional data collection or associated projects have been partially or primarily supported by external funding obtained by MPP team members. MPP benefit from national data collection programmes (such as those undertaken by Marine Scotland Science, Scottish Environment Protection Agency, NatureScot, Historic Environment Scotland) which help inform the baseline assessments in marine regions, as well as the government led data portal National Marine Planning Interactive ([NMPI](#)). In England and Wales marine planning is funded and delivered by central government.

In 2011 DEFRA estimated the costs of setting up a marine planning system in England²². The total setting-up costs were estimated to be around **£34 million** and the total running costs were estimated to be around **£1 million per annum**. Initial estimated economic benefits once the marine planning system is fully implemented was estimated to be **£46.8 million** per annum. The UK blue economy is estimated to directly support £47 billion in business turnover, £17 billion in gross value added, and 220,100 jobs in 2017 (Maritime UK, 2019).

Across the EU, funding streams have been utilised to provide baseline information to develop marine plans, create data platforms, develop monitoring and evaluation criteria etc. The EU MSP Platform includes a [list of 200 funded](#) projects, with combined budgets of over £250 million (c.f. an estimated turnover of the EU Blue Economy of €750 billion, and gross value added €218 billion). In addition, there are continued calls for proposals from EU [funding streams](#) to support MSP establishment in Europe and to [address specific challenges](#).

Available information on the costs associated with developing regional marine plans:

- New Zealand [Haida Gwaii Marine Plan 2015](#) estimated **£2 million**

²² [DEFRA \(2011\) A description of the marine planning system for England pp 98](#)

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- California **£29.6 million** (£15.2 million in private charitable foundation funds and £14.4 million in public funds).
 - Previous studies suggest the costs of developing marine plans range from **£100 000 - £5 million**.
 - In Scotland funding levels are significantly below this, at an estimated funding level of **£250 000 - £300 000** per plan (spread over 3 years).

6.3 How is expertise in marine planning and marine science utilised for marine planning and what requirement exists for data collection, research and monitoring to support marine planning?

Across all initiatives data gathering and knowledge gap identification formed part of the initial stages of marine planning. This process helped to direct future government funded research efforts (e.g. Wales, Canada, Scotland, England, Norway), either as commissioned research or by government research institutes (e.g. Marine Scotland Science). National data sets are primarily collected by government agencies, or under commission of a government agency (e.g. SMRU Ltd who collect seal monitoring data on behalf of the Scottish Government). Data requirements include baseline data as well as understanding interactions between sectors and receptors (whether these are environmental, economic or social). Where evidence gaps cannot be filled a precautionary approach can be adopted (as seen in Wales) or a policy response may be less specific.

In England the MMO has a centralised evidence team that ensures all evidence requirements are met throughout the marine planning process, nationally in Scotland this is the responsibility of Marine Scotland Science. In Scotland, at a regional level, evidence requirements are not automatically addressed by Marine Scotland Science.

Across international examples EU funding has been utilised to address a range of challenges. This has included development of data portals, identifying barriers to multi-use, understanding cultural values in the context of marine planning, and development of monitoring and evaluation processes, see [EU MSP Platform](#).

Academic research is utilised to develop appropriate methodologies and technologies for data collection. Additionally, academic research can inform emergent issues, for instance developing methodologies to identify and calculate species responsible for carbon sequestration (species which remove carbon dioxide/ CO₂). In Wales where data gaps were not resolved, a precautionary approach was explicitly adopted.

Regional marine planning partnerships in Scotland have limited funds to commission research but have utilised external funding mechanism such as EMFF and Heritage Lottery funding.

7 Stakeholder engagement - Does increased stakeholder engagement make marine planning better and enable better marine development and conservation?

7.1 Scottish Context

The Marine (Scotland) Act 2010, puts a high premium on stakeholder engagement. [Section 12](#) of the Marine Act makes provisions for delegation of functions for regional planning to [include](#) public authorities, and representatives of conservation, recreation and commercial sectors. Sections 22-27 place requirements for consultation on persons applying for marine licences. [Schedule 1](#) of the act contains wide duties to consult when preparing a marine plan, including the preparation of a Statement of Public Participation, inviting representations and advice on draft plans³. For Scottish regional marine plans, the Statements of Public Participation ([Clyde](#), and [Shetland](#)) have also included novel forms of engagement^{xxx}. For example, the Marine Spatial Planning Challenge game was used to engage beyond the usual suspects; advisory groups were formed from representative organisations to help develop policies, and community interest groups were engaged through public dialogue at workshops. The question may be whether marine planning has lived up to these high engagement aspirations in Scotland, and what outputs this has achieved.

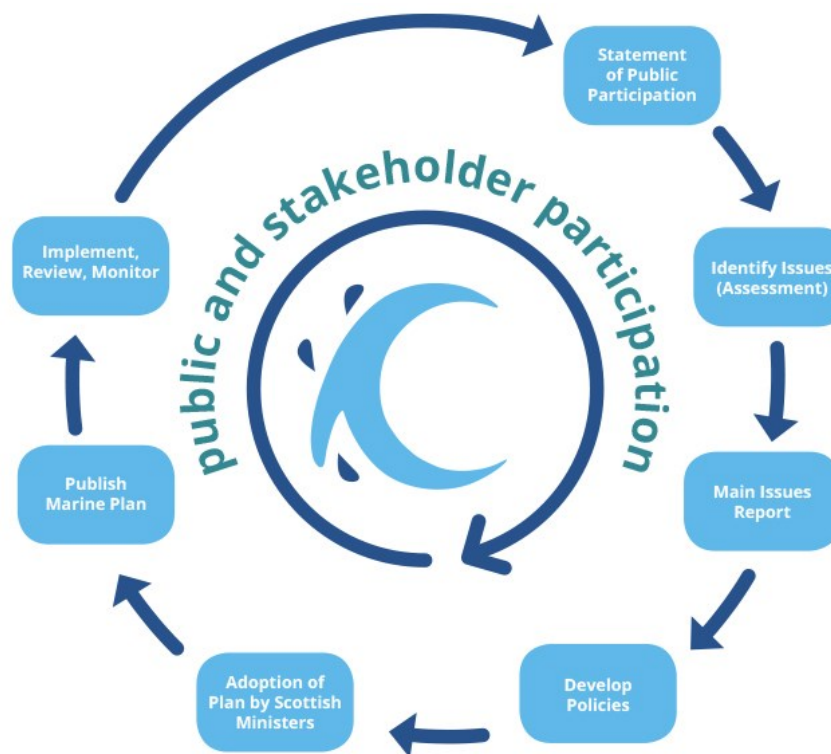


Figure 5 Clyde Regional Marine Planning Process (2017)

³ For the national marine plan, written evidence and comments were invited on pre-consultation and consultation drafts of plans (124 responses), along with parliamentary consideration. 30 public consultation meetings (1-8pm) took place at diverse locations around Scotland

7.2 Current International Experience

It is widely held that stakeholder engagement can increase the effectiveness of marine planning. It helps **draw on a wider range of expertise** to develop more effective plan policies, and **increase acceptance** of plan policies by those who are affected. However, stakeholder engagement is costly in time and resources to do effectively. **Failures in implementation commonly occur:**

- industry and civil society are disappointed by the level of engagement, or the lack of opportunity to influence policy.
- lead organisations for MSP struggle to successfully engage or meaningfully include input into the planning process, given resourcing constraints.

7.3 What do we mean by stakeholder engagement for Marine Spatial Planning?

Stakeholders are individuals, groups or organisations who will be interested, involved or affected (positively or negatively) by MSP^{xxx}. The scope and extent of stakeholder engagement varies: from informing, to consulting, to actively collaborating. Different stakeholders require different approaches to engagement^{xxxii}. For example, groups who have a strong physical presence in the oceans, may have some knowledge of current planning, compared with parts of the broader public who may know less about the seas and oceans. Some have a preference for face to face discussion, whilst others are happy with formal written consultation processes. The following section of the report evaluates different approaches to stakeholder engagement in five nations implementing MSP: England, Norway, New Zealand, Canada and Belgium.

7.4 Lesson drawing from Case Study Examples

In all case study countries, formal public consultation of planning documents is well established. The Aarhus Convention on the right of public participation in environmental decision-making has generally influenced European systems to include opportunities for the public and stakeholders to comment upon plan documents. The issue of first nations and indigenous communities has put this high on the agenda in New Zealand and Canada.

England (East, South, Other Regions)

The English MSP process puts stakeholder engagement at the centre of the planning process, in a way which closely follows Scottish marine planning model. This continuous, step-by-step approach has led to greater ownership and acceptance of plan policies. In particular, there is a multi-phased approach to setting objectives, options and plan policies through stakeholder consultation. Stakeholders have had multiple opportunities to input to plan content, and planning policies have been reviewed across iterations of plans. This has led to improvement of plan policies between [East Marine Plan](#) (2014) plan and [South Marine Plan](#) (2018) production. However the policies have been criticised for remaining general. Despite carefully worded policies to aid licensing decisions, the plans lack aspirational initiatives for implementation.

The English Marine plans operate at a broad spatial scale, and to deal with the challenge of operating over large areas, have appointed Liaison officers for regions, who have been available to schedule one-to-one meetings with particular organisations and answer queries.

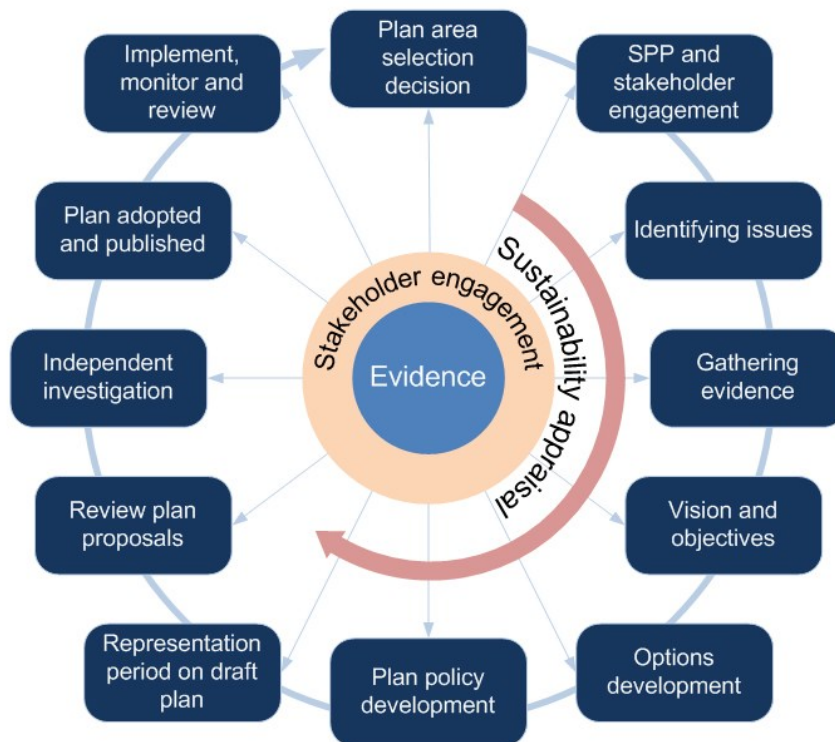


Figure 6 Marine Planning Wheel: Stakeholder Engagement at the Centre (MMO)

Norway (Barents Sea, Norwegian Sea, North Sea & Skagerrak)

The Norwegian marine planning system led to rapid establishment of plans for three regions covering Norway's maritime domain. Public participation played a more limited role. MSP decision-making was steered by a round-table group of seven ministries, with a round-table management group of 10 agencies. Other stakeholders had more of a consultative role. Some analysts have reported that Norwegians accepted this approach because there is strong public trust in government and acceptance of a 'centralized consultation' approach^{xxxiii}. Other analysts observe that while the planning process led to a consensus, the suppression of value-based differences has produced some unsustainable policy compromises^{xxxiv}. Interestingly, a recent cost-benefit analysis of MSP in Europe found that Norway was one case where the solely economic benefits of the plan in the short term were not positive^{xxxv} (but this may have more to do with the significant downturn in offshore oil production over the period of the plans- though perhaps a more inclusive approach could have troubleshooted this issue). Nevertheless, some Norwegian municipal coastal planning (out to 1 nautical mile offshore) does include systems for public consultation through automated tracking of public comments in the evolution of plan policies in a transparent way by using online engagement tools.

Belgium (2014 and 2020 Marine Plans)

The first phase of developing a spatial strategy for Belgian seas drew on a highly graphical 'visioning' process involving a design consultancy. This enabled public users to explore futures of the sea area ranging from 'playful', 'relaxed', 'natural', 'mobile' to 'rich' seas. Such visioning

exercises usually involve discussion and mutual learning over a series of workshops. This can be an important in contexts where there are long-standing conflicts, to step back from specific disagreements about developments, and consider the wider ecological, social and economic needs, desired futures for a marine area. The [Belgian Marine plan](#) was also subject to a final public hearing, including 36 000 combined online and written inputs. This led to significant changes in final policies on energy and fisheries, and exclusion of an artificial island development.

New Zealand (Huaraki Gulf)

In New Zealand, the Huaraki Gulf marine plan production process was outsourced from regional government. This resulted in model of stakeholder engagement which went beyond consultation towards collaborative management. Three distinctive approaches included: the use of 25 'Listening Posts' for detailed consultation exercises in local towns around the Gulf; the 'Huaraki 100+' a set of representative stakeholders drawn from the community to give continued feedback on plan development; and Roundtables of 12-16 members to develop topical strategies. This led to a high level of information input to the marine plan. However, engagement at the policy development and final production stages of the plan proved harder to maintain.^{xxxvi}.

Canada (Haida Gwaii)

In Canadian marine planning in British Columbia, First nations peoples have played a significant role in plan development. Plans such as the [Haidi Gwaii marine plan](#) (2015) are a collaborative partnership between the province of British Columbia and an indigenous first nation. There was a high level of community and village council representatives on the working group and advisory committee for the plan. As part of the plan development, a 3 day public forum was hosted, complemented by community discussions, websites, and outreach at community events. However, on some issues such as oil tanker shipping and fishing, there was not a consensus agreement, so these are not treated within the plan.

7.5 Effective tools for engagement

Table 14 A range of tools have been deployed from physical meetings and online consultation systems.

Tool	Case	Pros & Cons
Roundtable Steering Group	Norway	Pro: focussed decision making by key statutory agencies. Rapid development of plans. Con: Stakeholder input limited to consultation, value differences suppressed.
Statement of Public Participation	England	Pro: Explicit commitments to engagement Con: Adds to plan bureaucracy
Visioning	Belgium	Pro: Imaginative approaches to engage stakeholders Con: Idealized visions of future seas, divorced from reality. Not necessarily reflected in plan policies.

Automated consultation tracking system	Norway	Pro: 'You said, we did' transparency Con: Time and resource intensive to implement
Focus Groups	New Zealand	Pro: Collaborative plan policy development Con: Difficult to maintain engagement throughout planning process
Listening Posts	New Zealand	Pro: User centred public engagement Con: Dependent on low density population and high resource input
Public hearing	Belgium	Pro: democratic accountability and transparency of final plan outputs Con: Sensitive to capture by campaigns.

7.6 Key lessons to draw on stakeholder engagement

- How to improve the quality of data and information which supports decision-making?
 - The creation of information systems to support marine planning has improved access to data to support plan-making and decision-making. Planning at a regional scale has enabled local input to plans, collating diverse data-sets and local understanding. Scottish information systems compare favourably with other case study examples. National Marine Plan interactive contains over 1500 datasets. Many of these were previously disparately held and difficult to access. The development of citizen science initiatives and apps offer further opportunities.
- Whether ocean citizenship and public education ought to be part of marine planning?
 - Clyde and Shetland regional marine plans provide examples of schools and public engagement through novel tools such as the MSP Challenge game and public dialogue workshops. Other marine planning systems which have adopted such participatory approaches (Huraki Gulf) have had considerably more resources, but even so have found it challenging to maintain engagement for the full plan process.
- What balance to be struck between technical expert knowledge and general input?
 - Production of marine plans requires technical assessments such as zoning where activities are technically feasible, but the planning process also needs to engage with aspirations of sectors and community interests if marine planning is not to remain bureaucratic. Going in the direction of expert-led plans (Norway) would require strong trust in public administration and risks alienating stakeholders. In contrast, evidence from other case studies (Haida Gwai) shows that a consensus approach, whilst providing true collaboration, can lead to intractable disagreement.
 - In Scottish regional marine plans, where the planning partnership contains multiple members, this demands going beyond consultation to a more collaborative approach- this heightens the requirement to reach consensus on issues, usually requires more iterations of policy or plan development to move beyond the status quo.
- How can marine planning deal with the challenges of reaching consensus?
 - Stakeholder engagement in marine planning offers an opportunity for different interest groups to understand one another's point of view and potentially reach an

accommodation. However, there is no guarantee that consensus will be reached. There may be net losers from final policies, so some sectors may not perceive a benefit in engaging. Furthermore, the regional marine plans operate at the scale where the spatial implications of development policies become apparent, and policies from the national marine plan (on issues such as energy) get implemented.

- How much resource to put towards stakeholder engagement?
 - Marine Planning has been premised on the basis that sectoral planning in increasingly crowded seas would prove counter-productive and lead to unresolved conflicts, and inefficiencies in rejected development proposals. But for the planning process to resolve conflicts, it must move beyond dialogue to co-operation. This entails a high level of engagement with concomitant financial investment and capacity building for marine planners.
- How to manage varied expectations and needs in the engagement process?
 - The needs of different maritime sectors and types of stakeholders vary. International examples presented here provide a range of relevant tools for stakeholder engagement, ranging from smart online consultation tools, to interactive workshops to create dialogue and deepen understanding of ecological and social issues, and the planning process itself.
 - There is still considerable lack of understanding from wider organisations and the public, about what marine planning is, and the role of regional marine planning partnerships.
 - Further use of exercises such as 'visioning' or scoping the 'process of plan making' among the key planning partnership members, can help deepen the common mandate for regional marine planning.

Conclusions

Revisiting the questions posed in this report:

Implementation and Governance - *How do governance structures facilitate implementation of marine planning?*

Clear duties and responsibilities for marine planning in law and policy embed it as a process. This needs to be effectively linked to other planning and environmental regimes. High level awareness and support will enhance potential of marine planning to bring sectors together in governance beyond the regulatory processes.

Fisheries - *Can and should marine planning incorporate fisheries management measures?*

Fisheries can be effectively managed using varied tools outside of marine planning, however marine planning offers opportunities to identify local challenges and find area specific solutions.

Finance and Resource - *How can cost and benefits be balanced in marine planning, and how can academic knowledge be utilised?*

For marine planning to be effective and timely a minimum level of financial support is required. Academic knowledge and understanding forms the basis of many of the underpinning concepts in marine planning. The filling of specific data gaps is normally undertaken by government departments/ agencies or via commissioned work.

Stakeholder Engagement - *Does increased stakeholder engagement make marine planning better and enable better marine development and conservation?*

Stakeholder engagement has been very important for making plans more effective. Engagement cannot quickly solve the challenges over conflicts between development and conservation, or other conflicts. It is time and resource intensive. There is no guarantee of consensus and policies might have losers. It is the foundation for co-operation between stakeholders which can lead to better outcomes aspired by marine planning.

The comparative analysis conducted in this report has the following implications:

1. The basis for setting up effective regional marine planning.

Finance. Other marine planning systems are comparatively well resourced. Scottish funding of marine planning seems to be at the lower end of the distribution. Issues like stakeholder engagement are resource intensive and require time and personnel with expertise. Marine planning has the potential to create savings in marine management, and support sectors and environmental features whose economic benefits are many orders of magnitude higher than the cost of plan development and implementation.

Leadership: Worldwide examples show regional marine planning delivering successful outputs. In cases such as Norway and New Zealand, both local and national leadership has been shown to be important.

Aspirations: The Scottish approach to legal and governance frameworks have been ambitious. They have gone beyond consultation to collaboration with stakeholders through the approach of regional marine planning partnerships. England and Belgium have adopted more efficient approaches with clarity of central co-ordination and delivery.

2. The process for delivering effective regional marine planning

The aims and objectives for Marine Planning Partnerships in Scotland were ambitious and inclusive. These characteristics must be maintained while consideration is given to streamlining the process to achieve the intended outcome of a regional marine planning. The unique contribution of regional marine plans has been to act as a driver to identify **regional issues** and pose **local solutions**. Examples include working with fisheries to reduce conflicts with other sectors and potential environmental impact (Shetland)ⁱ.

In Scotland the process thus far has mainly focussed on **Plan making**. Regional Marine Plans have faced challenges with developing a shared understanding of the role of marine planning to tackle marine challenges, but have set a path to identifying key issues and supporting local communities and Scotland is meeting its aspirations for a productive and well managed marine environment.

There are further potential benefits of **Partnership-working** and utilising the marine planning partnerships as a forum to identify local issues, both within and outside of marine licencing, this approach has been effectively applied elsewhere.

Glossary

CFP – Common Fisheries Policy: Fisheries policy of the European Union (EU) which is a set of rules for managing European fishing fleets and for conserving fish stocks.

www.ec.europa.eu/fisheries/cfp_en

DEFRA: Department for the Environment, Food and Rural Affairs: government department responsible for environmental protection, food production and standards, agriculture, fisheries and rural communities in the United Kingdom.

www.gov.uk/government/organisations/department-for-environment-food-rural-affairs

EIA – Environmental Impact Assessment: a detailed assessment of a development and its impact upon the social and physical environment of the surrounding area.

European Site (also known as Natura site): Areas designated for conservation purposes which represent the best of Scotland's nature and are internationally important for threatened habitats and species. European sites include SACs and SPAs.

<https://www.nature.scot/professional-advice/protected-areas-and-species/protected-areas/international-designations/natura-sites>

EU – European Union: a political and economic union of over 25 member states that are located primarily in Europe.

europa.eu/european-union/index_en

EEZ - Exclusive Economic Zone: a sea zone prescribed by the 1982 United Nations Convention on the Law of the Sea over which a sovereign state has special rights regarding the exploration and use of marine resources, including energy production from water and wind.

www.un.org/depts/los/convention_agreements/texts/unclos/part5.htm

HRA – Habitats Regulations Assessment: assessment to consider whether a proposed development plan or programme is likely to have significant effects on a European site designated for its nature conservation interest.

ICZM – Integrated Coastal Zone Management: a coastal management process for the management of the coast using an integrated approach, regarding all aspects of the coastal zone, including geographical and political boundaries, to achieve sustainability.

IFCAs – Inshore Fisheries and Conservation Authorities: statutory regulators responsible for the sustainable management of sea fisheries resources in Inshore Fisheries and Conservation Districts (IFCDs) to six nautical miles from coastal baselines. There are 10 IFCAs in England.

www.association-ifca.org.uk

MCZs – Marine Conservation Zones: a type of marine nature reserve in UK waters with the aim to protect nationally important, rare or threatened habitats and species.

MaPP – Marine Planning Partnership for the North Pacific Coast: a vast ocean plan for the North Pacific Coast representing a commitment to ocean health and sustainable marine use into the future.

www.mappocean.org

MMOs – Marine Mammal Observers: professionals in environmental consulting who specialise in whales and dolphins.

MPAs – Marine Protected Areas: include Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Sites of Special Scientific Interest (SSSIs), Ramsar sites, Nature Conservation MPAs (NCMPAs), Demonstration and Research MPA or a Historic MPA.

MPS – Marine Policy Statement: the framework for preparing Marine Plans and taking decisions affecting the marine environment.

www.gov.uk/government/publications/uk-marine-policy-statement

MSFD – Marine Strategy Framework Directive: a European Directive aimed at achieving or maintaining Good Environmental Status in European seas.

www.eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0056

MoD – Ministry of Defence: the British government department responsible for implementing the defence policy set by Her Majesty's Government and is the headquarters of the British Armed Forces.

www.gov.uk/government/organisations/ministry-of-defence

NMPi – National Marine Plan interactive: an interactive tool, part of the Marine Scotland Open Data Network, designed to assist in the development of national and regional marine planning.

www2.gov.scot/Topics/marine/seamanagement/nmpihome

NPS – National Policy Statement: produced by government. They give reasons for the policy set out in the statement.

NSIPs – nationally significant infrastructure projects: major infrastructure developments in England and Wales that bypass normal local planning requirements. These include proposals for power plants, large renewable energy projects, new airports and airport extensions, and major road projects.

NM – nautical miles: a unit used in measuring distances at sea, equal to 1.1508 statute miles.

NZCPS – The New Zealand Coastal Policy Statement: guides local authorities in their day to day management of the coastal environment. The first New Zealand Coastal Policy Statement was released in 1994 and replaced in 2010.

www.doc.govt.nz/about-us/science-publications/conservation-publications/marine-and-coastal/new-zealand-coastal-policy-statement/new-zealand-coastal-policy-statement-2010

PAS – Planning Aid Scotland: a citizenship charity to help individuals and community organisations to get involved in decision-making in the planning system. PAS offer impartial advice, skills training and support communities.

www.pas.org.uk/

PMF – Priority Marine Feature: habitats and species that are considered to be marine nature conservation priorities in Scottish waters.

RMA - Resource Management Act: passed in 1991 in New Zealand, the RMA promotes the sustainable management of natural and physical resources such as land, air and water.

www.legislation.govt.nz/act/public/1991/0069/latest/DLM230265.html

RBMP – River Basin Management Plan: a management tool in integrated water resources management. They generally contain descriptions of the water resources in a drainage basin and water allocation plans.

SACs – Special Areas of Conservation: protected area identified as supporting rare, endangered and vulnerable habitats or species.

SEA – Strategic Environmental Assessment: the process of assessing policies, plans and programmes (rather than individual projects) for their environmental impacts.

SSSIs – Sites of Special Scientific Interest: a conservation designation denoting a protected area in the United Kingdom.

SPAs – Special Protection Areas: protected area important habitats for rare, threatened or migratory birds.

SPP – Statement of Public Participation: explains when and how the public and other interested bodies are involved in a specific project or plan.

UK – United Kingdom: consists of England, Scotland, Wales and Northern Ireland.

UKMMAS – UK Marine Monitoring and Assessment Strategy: 3-stage framework for achieving good environmental status (GES) in UK seas.

www.marine.gov.scot/data/uk-marine-monitoring-and-assessment-strategy

WFD – Water Framework Directive: EU directive which commits European Union member states to achieve good qualitative and quantitative status of all water bodies by 2015.

www.ec.europa.eu/environment/water/water-framework/index_en.html

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