

Chart Lines

Marine Spatial Planning: securing environmental benefits



Travelling Fellowship Report

Duncan Vaughan

April 2018

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Executive Summary

There is a legal requirement to introduce marine plans throughout English waters by 2021. To date, two out of the 11 required marine plans have been drafted and adopted and a further two have been drafted and await adoption. The initial two plans have undergone their first formal review. There remains an opportunity to influence the remaining marine plans in England by identifying international best practice regarding:

- 1) the protection of the marine environment outside of formally designated marine protected areas, and
- 2) the formal marine plan review process with a view to assessing the effectiveness of environmental protection and the delivery of policies within the plan.

The United States of America (USA) (Massachusetts Ocean Management Plan), The Netherlands and Norway were visited and interviews were conducted with marine planning practitioners, academics and stakeholders to develop a case study for each country. France and Belgium were also visited in order to meet leading policy professionals.

Although overarching international obligations exist requiring countries to manage their marine space in a sustainable manner, each country has developed marine plans that are a reflection of the historical, cultural, legal and social construct of that country as well as the current use and size of the areas covered by their plans. Each of the marine plans reflects the intended objectives of the plan. In each case study there are multiple objectives for the plan and specific marine sectors that the plans focus on. However, in each case study there is the overarching intention that the sustainable use and protection of the marine resources within that country's marine space is secured. The extent to which a hierarchical approach is used to assign strategic goals within plans varies dramatically between countries.

Throughout the Fellowship it became clear that the most significant driver for change in marine use is the rapid expansion of offshore wind farms (OWF). Keeping pace with the political and environmental imperative for this development whilst managing the impacts of this sector's expansion, and the conflicts for space that this development will cause, is likely to be the single most challenging task for politicians, policy makers, regulators and conservation advisors in the future related to marine planning.

Each of a country's case studies has, with various emphasis, followed the same process:

- 1) develop the legislative or policy requirement for marine planning,
- 2) identify an institution with overarching delivery responsibilities for the marine plan,
- 3) develop and agree the factual basis of the marine plans,
- 4) collaboration of government bodies,
- 5) develop data portals to capture and present the marine data,
- 6) seek stakeholder involvement, and
- 7) establish a review plan period.



It is clear from the case studies that the approach to marine planning in England is highly ambitious in terms of its scope and delivery deadline as the marine plans are truly cross-sectoral. The extensive formal marine protected area network and the requirement to ensure Good Environmental Status is intended to underpin the ability of the plans to secure sustainable use throughout English seas. Unusually, the plans also encompass the entirety of the marine space, including the land/sea baseline, which is commonly excluded. Marine planning in England is organisationally simple in that there is a single management body clearly identified and responsible for the marine plans and that there is a single layer of marine planning. Marine planning in England is still evolving, and therefore it is unclear how the first suite of marine plans in England will look and be used.



Key recommendations for consideration in England

These recommendations are made following discussions with marine practitioners within the case study countries. Some of these recommendations made may already be under consideration by the marine planning body.

- 1) Stagger the review periods for all 11 marine plans to facilitate national coherence and convergence in policy. (Norway, for example, with its three national plans has a 4-year update process and a 12-year review process with the result that every 4 years two plans are updated and one plan is undergoing an extensive review.)
- 2) Establish plan update and plan review protocols and consult on these externally.
- 3) Establish an independent review of the process taken to review the first two marine plans.
- 4) Establish a consultation on the future approach and expectations of subsequent reviews of marine plans.
- 5) Consider the development of policy documents that provide detail on what the government commits to delivering within specified time frames to deliver effective marine plans (the Norwegian approach).
- 6) Increase the spatial specificity within plans where possible.
- 7) Develop a clear spatial aquaculture policy and incorporate this into the marine plans in order to drive blue growth in this sector.
- 8) Consider the development of a more detailed policy position regarding the utilisation of marine space by commercial fishing interests and the further development of core fishing areas.
- 9) Consider the processes that would need to be developed to reallocate marine space and marine resources from existing activities to secure overarching policy goals.
- 10) Consider the establishment of strategic priority sectors (as in The Netherlands) and establish an approach for determining the hierarchy of these sectors during decision-making.
- 11) Consider the extent and type of stakeholder engagement that will be required as the marine plans are fully introduced and mature.
- 12) Consider how the marine planning outputs can continue to meet the needs of various stakeholder groups as the marine plans mature.



Key aspects that marine planning delivers for the marine environment outside of marine protected areas

During the Fellowship, interviewees were asked what they saw as the key benefits that marine planning was or had delivered for the environment.

- 1) There is a better understanding of the state of the marine environment.
- 2) There is a better understanding of the location and extent of important habitats and species throughout marine plan area.
- 3) There is a better understanding of gaps in knowledge, which then leads to the development of projects to fill these development gaps. Identifying gaps in knowledge helps direct funding.
- 4) There is the development of a clear factual base on which development decisions can be made.
- 5) There is increased cooperation between government institutions, which leads to better data sharing and better decision-making.
- 6) Areas of future conflict between sectors throughout marine space can be identified in advance of developments. This enables avoidance, co-location, mitigation and compensation measures to be considered collaboratively.
- 7) There is more and better-quality engagement with stakeholders by government institutions; therefore, different perspectives can be considered through decision-making processes. This provides greater transparency during decision-making processes with the intention that decisions are understood if not accepted.
- 8) Marine planning generates a public discourse regarding how public goods (i.e. space, fish, aggregate) should be used both now and in future generations.
- 9) In many cases there is a requirement to work across national borders and mirror existing fisheries management obligations. This leads to better data sharing and development of common goals, targets and indicators, and management measures, thus delivering better marine management and environmental outcomes.
- 10) Increased engagement and collaboration by regulators of different sectors (i.e. fishing, shipping, and energy production) starts to break down siloed decision-making and also reduces the risk of projects being duplicated.



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About the Author

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Social Media

It is recognised that scientists are poor at communicating their work and results that flow from it. It is now, more than ever, incumbent on natural resource scientists and managers to share their thinking and to engage and be engaging with the public. To this end, I learnt new skills and embraced my inner Hemmingway. I can therefore be found lurking on the web at the following locations:

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Abbreviations

CCC	Cape Cod Commission
CFP	Common Fisheries Policy
CMSP	Coastal and Marine Spatial Planning
CCOMP	Cape Cod Ocean Management Plan
CZM	Coastal Zone Management
EEA	Executive Office of Energy and Environmental Affairs
EEZ	Economic Exclusion Zone
EO	Executive Order
EIR	Environmental Impact Review
EU	European Union
IEA	Important Ecological Areas
IMP	Integrated Management Plans
IOPTF	Interagency Ocean Policy Task Force
JNCC	Joint Nature Conservation Committee
LA	Local Authority
LEDPA	Less Environmentally Damaging Practical Alternative
MA	Massachusetts
MCAA	Marine and Coastal Access Act
MEPA	Massachusetts Environmental Policy Act
MHW	Mean High Water
MMO	Marine Management Organisation
MOP	Massachusetts Ocean Plan
MPA	Marine Protected Area
MS	Member State
MSP	Marine Spatial Planning
nm	Nautical Mile
NOC	National Ocean Council
NOP	National Ocean Policy
NROC	North-eastern Regional Ocean Plan
NROC	Northeast Ocean Council
NRPB	Northeast Regional Planning Board
OMP	Ocean Management Plan
OWF	Offshore windfarm
RA	Regional Authority
ROP	Regional Ocean Partnership
RPB	Regional Planning Body
SEA	Strategic Environmental Assessment
SSU	Special, Sensitive and Unique areas
UNCLOS	United National Convention of the Law of the Sea
VVA	Valuable or Vulnerable Area
WCMT	Winston Churchill Memorial Trust



Introduction

The overarching goal of achieving sustainable development with the accommodation of its three pillars (social, economic, environmental) is central to marine planning and the production of marine plans. This report sets out how three countries with a history in marine planning have attempted to achieve the goal of sustainable development through marine planning and marine plans. To aid those unfamiliar with the international context and framework of marine planning, this is set out within Appendix I. Appendix II sets out the European context and framework, and Appendix III provides a brief overview of marine planning in England.

The obligation to conduct marine planning in England was provided for in 2009 through the Marine and Coastal Access Act (MCAA). Being less than ten years old, marine planning as an area of marine management within England is still in its infancy as a formal discipline.

A requirement to introduce marine plans throughout the Economic Exclusive Zone (EEZ) in English waters by 2021 has led to the creation and formal adoption of two marine plans to date. In total, 11 plans are required. There is a recognition that the marine plans in England have principally been established to capture and display the available data on both human activities as well as the spatial and temporal distribution of marine resources. Therefore, marine plans offer both developers and regulators a detailed description of the marine environment and its current (and ring-fenced future) use in a format that can be easily interrogated and displayed. Whilst this has the potential to greatly speed up the consenting process for developers and theoretically reduce costs, there is the potential to incorporate a greater level of spatial allocation which takes into account the future needs of society as well as changes in the spatial and temporal distribution of natural resources due to climate change.

In order to explore the degree to which marine plans address future use and allocate space, three countries with relatively mature marine planning were considered as case studies: the United States of America (USA; with a focus on marine planning in the State of Massachusetts), The Netherlands and Norway.

The marine plans in each case study have developed as a response to specific drivers as would be expected; therefore, the degree to which they incorporate future use varies. Marine planning offers real potential in leading to the sustainable development of our waters, although its full potential has yet to be explored. In order to better understand the future international context of marine planning and the potential long-term direction and development of plans that could shape marine planning in England, interviews with senior European Commission personnel were conducted.



Methodology

This Fellowship was conducted during two three-week periods, in September 2017 and February 2018, through face-to-face interviews where practical. Contemporaneous notes were taken for each interview. A draft of this report was provided to each of the individuals interviewed for the Fellowship. A two-week period for commenting was provided for and responses received were considered and incorporated into the report where practicable.

It is recognised that developing comprehensive case studies for each of the countries visited was unachievable in the available time; therefore, an approach has been taken to develop a high-level overview of marine planning for each country (also see Table 1 in the Appendix). Key resources have been identified that can be accessed to discern additional information on each of the case studies.

The focus of the Fellowship has been to identifying insights from the practitioners that have worked extensively to introduce, develop and review marine plans in the case study countries. Where these insights may have utility in England, they form the basis of the recommendations made in this report.



The case studies

The United States of America

The Massachusetts Ocean Management Plan - the origin of marine planning in the USA

Coastal and Marine Spatial Planning (CMSP) as it was initially called in the USA, started at the state level. During the early 2000s, the Cape Wind Renewable Energy Project was established with the intention of securing permission to build an offshore windfarm located within Federal waters off the coast of Massachusetts with the goal of supplying power to Cape Cod and the islands of Martha's Vineyard and Nantucket. The project saw significant opposition and led to the Governor of Massachusetts establishing a task force to evaluate broadly the area of the intended offshore wind farm (OWF) development. This task force conducted a comprehensive analysis of the offshore environment.

In 2008, Governor Deval Patrick signed the first state-level [Oceans Act](#) in the USA for the State of Massachusetts, requiring the state to develop and implement a science-based comprehensive Ocean Management Plan (OMP) to protect ocean wildlife and habitat and promote sustainable use of the ocean and its resources. The following year, the Executive Office of Energy and Environmental Affairs (EEA) issued the Massachusetts OMP – the first comprehensive OMP in the USA. The Oceans Act requires the EEA to review and update the OMP at least once every five years. The first update to the plan was published in 2015. The OMP sets out how the state intends to secure the protection and sustainable use of state ocean waters, protect critical marine habitat and important water-dependent uses. The OMP framework is implemented within the existing regulatory structure, with the relevant agencies coordinating review and approval of proposed developments. The OMP is a state plan and a state-driven exercise whereby state agencies participate, with some federal input.

To coordinate and collaborate on regional approaches to CMSP, several Regional Ocean Partnerships (a voluntary forum) (ROPs) have been established by Governors of various states. Massachusetts is a member of the Northeast Regional Council (NROC) along with Maine, New Hampshire, Vermont, Rhode Island, and Connecticut. The NROC consists of State and Federal Members and was formed in 2005. A key output of the NROC is the development of the [NROC data portal](#).

The development of marine planning at a national level

Ocean governance in the USA has been progressed by successive administrations since President Clinton signed into law the 2000 Ocean Act. In 2001, President George W. Bush conveyed a bipartisan commission which resulted in the publication in 2004 of the US Commission on Ocean Policy final report: An Ocean Blueprint for the 21st Century. This report recommended regional and coordinated ocean governance. As a result of this report and a growing interest in marine planning, various states nationwide voluntarily formed ROPs (see previous section).

At a national level, marine planning was driven by the [Interagency Ocean Policy Task Force](#) (IOPTF) that was established by the Obama Administration in 2009 to develop recommendations for America's first National Ocean Policy (NOP). The [Final](#)



[Recommendations](#) of the IOPTF were delivered in 2010. In July of that year, President Barack Obama (who had a majority in the House of Representatives and the Senate) signed [Executive Order 13547](#) (EO). This EO became the NOP. The NOP encompasses a range of ocean issues and priorities and also provides the opportunity for regions to use ocean planning as a tool to establish regional ocean priorities. The NOP directs Federal agencies to implement the recommendations of the IOPTF under the guidance of a new [National Ocean Council](#) (NOC). The EO established the NOC under the leadership of the White House Council on Environmental Quality and the Office of Science and Technology Policy, and the heads of more than 20 federal agencies. The NOC also established a Governance Coordinating Committee (GCC) comprising 18 officials from state, tribal and local governments. The NOC was tasked with establishing Regional Planning Bodies (RPBs) for the development of regional CMSP plans. In [2012, a draft NOP Implementation Plan](#) was developed that would realise the EO and the IOPTF Final Recommendations. The Final Recommendations of the IOPTF not only included a NOP, but also, and most importantly, resulted in the implementation of integrated, ecosystem-based coastal and marine spatial planning and management (CMSP). In essence, the development of marine spatial plans would be the delivery mechanism for an ecosystem-based approach to the management and use of waters around the USA. The regional marine spatial plans would not be regulatory. However, they would be used to guide decision-making (e.g. permitting), and participating agencies would adhere to the final marine spatial plans to the extent possible, consistent with existing authorities. Once a plan was approved, federal, state and tribal authorities would implement them through their respective legal authorities.

By the time the draft NOP had been developed, the Obama Administration had lost control over the House of Representatives and the draft document met significant political resistance, with claims of Presidential overreach and concerns that ocean planning would result in the allocation of rights to public space. This led to the redrafting of the document to one that was less prescriptive and focused more on the process of planning rather than the outputs and outcomes.

In 2013, the NOC published the [Marine Planning Handbook](#), which provided more specific information and guidance on RPBs, regional participation and marine plans. The handbook redefined CMSP as marine planning to remove the perception that the goal was the regulation or zoning of marine space. Importantly, the requirement to take an ecosystem-based approach was retained. [The National Ocean Policy Implementation Plan](#) was published in 2013 by NOC. The [Northeast Regional Planning Body](#) (NRPB) had its [plan](#) approved in 2016 by the NOC. The first regional ocean plan can be attributed partly to state-level plans in Massachusetts and Rhode Island as its basis. The NRPB works closely with the NROC to coordinate issues related to ocean planning and shares many members. The NRPB plan relies on the NROC data portal to underpin its plan.

Federal jurisdiction

Beyond the state jurisdictional area (3 nm from mean high water [MHW]), federal jurisdiction extends to 200 nm.



The scope of the Massachusetts Ocean Management Plan

The OMP sets out the uses and activities allowed within the state’s jurisdictional waters and establishes performance standards for siting those uses. The suitability of developments is assessed through the [Massachusetts Environmental Policy Act](#) (MEPA). Following MEPA review, regulators examine the specific impacts of projects against regulations and performance standards.

The OMP does not seek to regulate commercial and recreational fishing; however, the biological and spatial characteristics of those fisheries as components of the ecosystem are addressed in the OMP. The OMP does not cover the sea–land interface (a 0.3 nm boundary from the HWM). This exclusion creates a policy gap. The following activities are considered throughout the OMP: offshore renewable energy, pipelines, cables and sand mining.

The OMP establishes three broad management areas within the state planning area: the Prohibited Area, Renewable Energy Areas and the Multi-Purpose Area (Fig. 1).

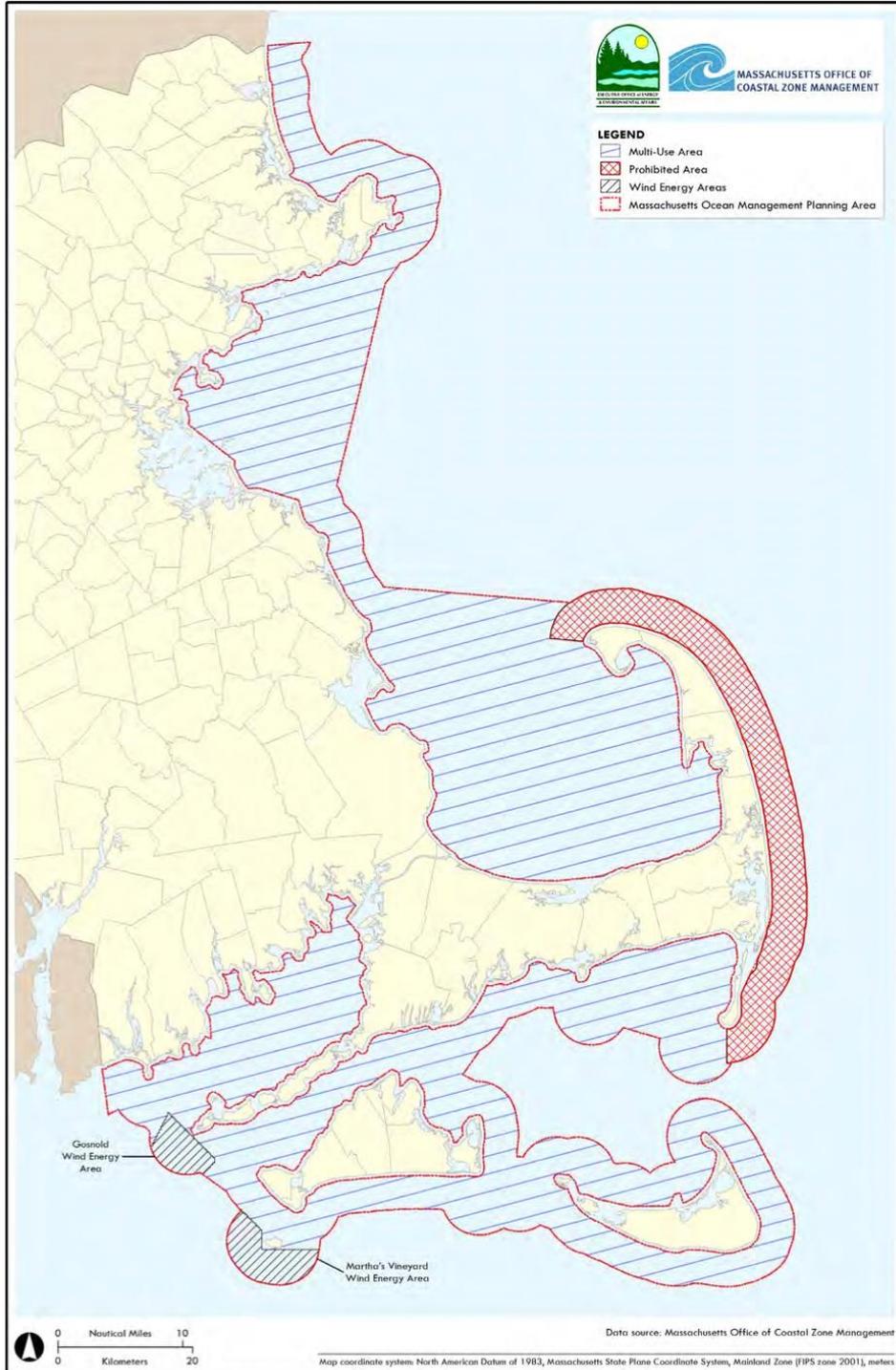


Figure 1. Management areas designated in the Ocean Plan. Source: 2015 Massachusetts Ocean Plan. Vol. 1.

The Prohibited Area is coincident with the Cape Cod Ocean Sanctuary (providing protection for northern right whales), and activities that may be permitted elsewhere are expressly



prohibited in this area. The Renewable Energy Areas are considered to have few significant environmental constraints. The Multi-Purpose Area constitutes the vast majority of the OMP area. Renewable energy development, sand and gravel mining, cable and pipeline installations, as well as other allowed activities, may be located within the Multi-Purpose Area following assessment.

Environmental protection throughout the Ocean Management Plan area

Other than the protection of the northern right whale through the federal closure, there is no formal Marine Protected Area (MPA) network in place.

However, the OMP does identify and map Special, Sensitive or Unique species and habitats of conservation interest (SSU). The SSUs are recognized as significant resources that may be incompatible with certain types of development; therefore, development applications need to consider how SSUs may be impacted. The specific SSUs that are incompatible with renewable energy development, sand and gravel mining, or cable and pipeline installations are also specifically identified in the OMP.

The OMP sets out how these areas were defined and identified. The SSUs include:

- North Atlantic Right Whale Habitat
- Colonial Waterbirds Important Nesting Habitat
- Humpback Whale Core Habitat
- Long-tailed Duck Important Habitat
- Special Concern Tern Core Habitat
- Leach's Storm Petrel Important Habitat
- Roseate Tern Core Habitat
- Fin Whale Core Habitat
- Areas of hard/complex seafloor
- Eelgrass
- Intertidal flats
- Important fish resource areas

Review of Massachusetts Ocean Management Plan

The Massachusetts Oceans Act requires the EEA to review and update the OMP at least once every five years. As with the development of the original plan, this process is led by the EEA's [Office of Coastal Zone Management](#) (CZM). In 2013, the EEA initiated a formal review and update of the [2009 Massachusetts Ocean Management Plan](#), beginning with a comprehensive assessment of progress and performance to achieve the requirements and commitments established by the Oceans Act and the first OMP. The EEA published the results of this assessment ([2014 Review of the Massachusetts Ocean Management Plan](#)), which provided a summary of the background and context for ocean planning in Massachusetts and reports on the ocean plan development process, including the policies and management framework, plan administration and implementation, and work on science and data priorities identified in the Science Framework. The document also synthesizes the views and opinions of the members of the state's [Ocean Advisory Commission](#) and [Ocean Science Advisory Council](#) on the ocean planning and implementation process. It also summarizes stakeholder and public input received during a public review process. A representative of the [Cape Cod Commission](#) (CCC) is a member of the Ocean Advisory Commission.

During 2013, through four public meetings and a formal 60-day comment period, the EEA gathered input on the proposed scope for updates to the 2009 OMP. The EEA convened six technical working groups to review scientific data and information, and identify and



characterize important trends in ocean resources and uses. At meetings in the fall and winter of 2013–2014, the Ocean Advisory Commission and Ocean Science Advisory Council reviewed draft technical work group reports. In 2014, the CZM, with support from SeaPlan (formerly the Massachusetts Ocean Partnership), held public workshops to share information and solicit input and feedback on the findings and recommendations of the work groups.

In essence, the review of the OMP resulted in a focus on improving the data layers to ensure accurate resource and usage information upon which developers and regulators can rely to make decisions.

Ocean Management Planning at a local level

An unprecedented growth boom on Cape Cod in the 1980s prompted the Massachusetts state legislature to pass the [Cape Cod Commission Act](#) in 1989. The Act identified that the region "possesses unique natural, coastal, historical, cultural, and other values that are threatened by uncoordinated or inappropriate uses of the region's land and other resources." In order to protect these resources, the Act established the CCC which is the regional land use planning, economic development and regulatory agency to serve the citizens and 15 towns of Barnstable County. The CCC has the ability to identify areas as [Districts of Critical Planning Concern](#) (DCPC), where it has the view that a plan or development within an area may be detrimental to its core role – protecting the resources of Cape Cod. The DCPC designation provides a planning moratorium period to enable the CCC to take stock of events and determine whether plans for a particular area would be detrimental to the area. The development of the Massachusetts OMP led the CCC to identify the Ocean Management Planning area of Cape Cod for designation as a District of Critical Planning Concern (DCPC). The action of developing a DCPC [Cape Cod Ocean Management Plan](#) (CCOMP) initially surprised the state as the CCC traditionally focused on terrestrial matters.

Spatial extent of the Cape Cod Ocean Management Planning District

The [DCPC Cape Cod Ocean Management Planning District](#) comprises the ocean environment offshore of Cape Cod, or Barnstable County (Fig. 2). The boundary of the planning area starts 0.3 nm seaward of MHW, and extends to 3 nm from MHW, or the state jurisdictional boundary, whichever is farther from the shore. The area is coincident with the planning area for the OMP, but excludes the Cape Cod Canal, numerous bays, harbours and embayments. This overlap between the CCOPM and the Massachusetts OMP creates a policy gap between MHW and 0.3 nm seawards. The [Cape Cod Regional Policy Plan](#), which includes a coastal and marine section, is considered to cover this gap.

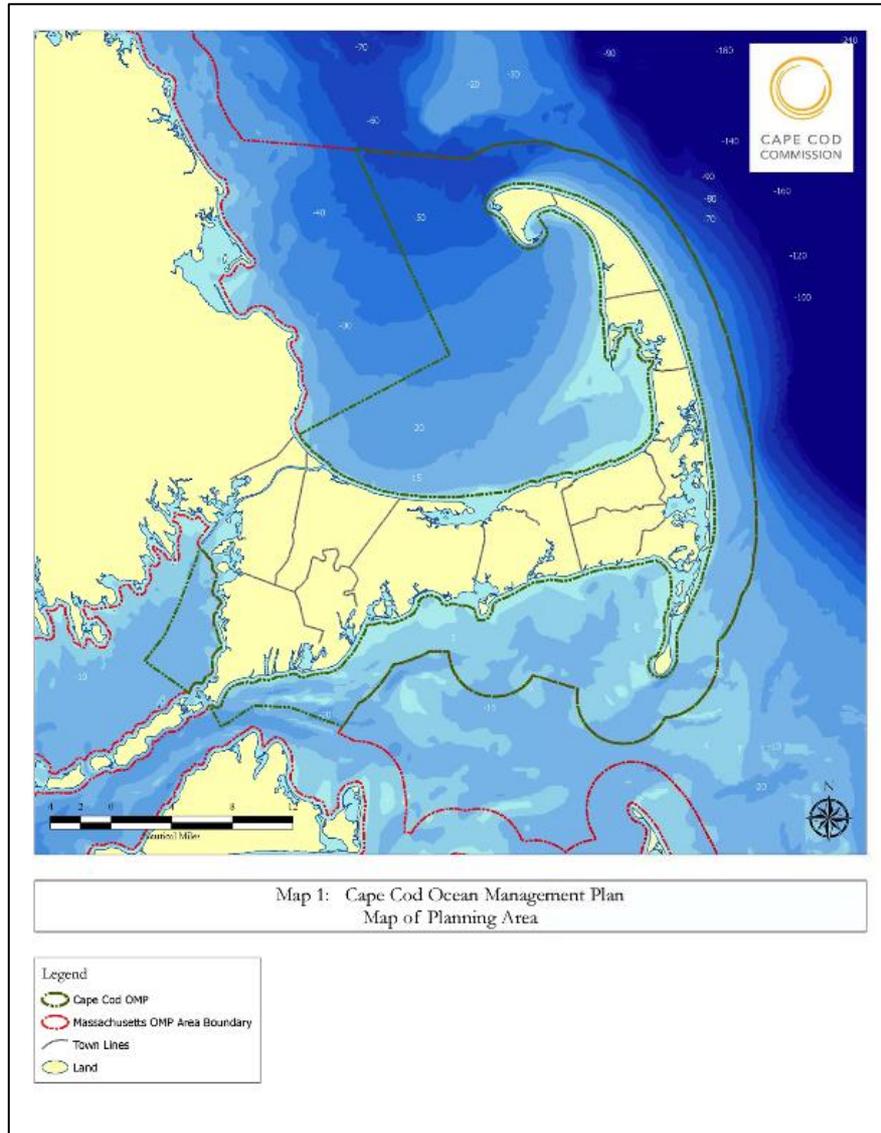


Figure 2. Cape Cod Ocean Management Plan Area.

The Cape Cod Ocean Management Plan

The purpose of the CCOMP is to examine the potential for a limited, defined set of activities within the planning area and, where possible, facilitate appropriately sized renewable energy development while ensuring that the unique resources which characterize Cape Cod are protected.

The CCOMP, established that certain defined, mapped habitat areas (SSU areas), comprising core habitat areas for key species, should be exclusionary areas for certain kinds of development within the Multi-Purpose Area identified within the Massachusetts OMP. All of the SSU features identified within the Massachusetts OMP are found within the boundary of the CCC plan.



The MEPA requires projects to undergo subject review if they equal or exceed the MEPA thresholds, i.e. if 1 ha of saltmarsh is to be impacted, then the developer is required to submit a permit application with the state. The CCC sets its own thresholds for development consents in line with those of MEPA. When the MEPA thresholds are exceeded, the developer is required to submit an Environmental Impact Report (EIR). If an EIR is required for a development on Cape Cod, then the EIR is also subject to a CCC Development of Regional Impact Review. This enables the CCC to establish additional restrictions to safeguard the resources on Cape Cod, and also provides for a public hearing, which MEPA does not, thus providing additional public scrutiny of developments.

Review of the Cape Cod Ocean Management Plan and the Cape Cod Regional Policy Plan

The Cape Cod Regional Policy Plan is required to be formally reviewed every five years. This document establishes a significant number of goals and performance standards for coastal and marine resources. Both the CCOMP and the Regional Policy Plan are updated as new data are identified.



USA insights developed through discussions with scientists, managers and regulators.

Overlapping jurisdictions complicate and slow down marine planning processes.

The majority of conflict arises from situations where you are telling people what to do, when to do it and where to do it, when often the knowledge base is not there. Focus your efforts on filling the gaps in knowledge.

To bring about change, there needs to be a move from data collection and representation to the spatial allocation within marine plans. This is seen as the long-term rational response, but do not try and do this too early in the planning process.

An effective marine planning process system should: (1) deliver a fast process for developers and regulators to work through, (2) deliver a licencing process that is less burdensome, and (3) elicit a coordinated response from regulators to deliver the underlying goals of the plan.

The planning process needs to enable regulators to discern the acceptable impacts from a development in the area and whether that is compatible with the underlying goals of the plan.

Data is policy neutral; therefore, seek to put data collection at the heart of marine planning and then use it to develop evidence-based policies that can be defended.

The ultimate goal of marine planning is to make explicit and informed management decisions that are spatially explicit.

Marine planning means identifying challenges and opportunities that you state you want to address.

Data portals in their first form were seen as regional atlases of human activity. However, this was not their intention. The intention was to identify key data sets and work with industry so that they could provide data with the most utility to end-users. The key output from these data portals should be the development of products that address key issues.

The tiered approach to marine planning in the case study area enables greater protection of the environment at a more discrete scale. This is only possible where the lower level of planning body exists. This level of planning is better suited to enabling local populations to engage with marine plans, but also can lead to protectionist positions.

Speeding up development consents and creating stakeholder dialogue were identified as the key benefits of the marine planning process.

The creation of extensive data layers and a data portal were viewed as helping the delivery of the ecosystem-based approach throughout all layers of planning.



The Netherlands

The origins and evolution of marine planning in the Netherlands

In 2005, the Ministry of Housing, Spatial Planning and the Environment published a chapter in the national Spatial Planning Policy Document on the North Sea. The marine spatial planning policy aims at preventing fragmentation and promoting the efficient use of space, while giving private parties the scope to develop their own initiatives in the North Sea. This overall goal is elaborated in more detail in the [Integrated Management Plan for the North Sea 2015](#). The three goals are:

- 1) spatial management to foster a ‘healthy sea’,
- 2) spatial management to foster a ‘safe sea’, and
- 3) spatial management to foster a ‘profitable sea’.

The government initially took an approach that defined ‘use zones’ only where necessary (e.g. shipping routes, military exercise, ecologically valuable areas). This approach allowed a considerable amount of freedom to the private sector by giving them the latitude to develop initiatives within certain constraints. In 2009, the [Policy Document on the North Sea 2009–2015](#) was published. The Policy Document put greater emphasis spatial development. It became part of the National Water Plan (NWP) in 2010. The NWP replaced policy sections of the Spatial Planning Policy Document, including the spatial plan for the North Sea. The NWP was updated in 2015 ([National Water Plan 2016–2021](#)) and provides a policy framework for MSP based on the Water Act. The updated NWP includes the [Policy Document for the North Sea 2016-2021](#) as an appendix. The updated NWP creates the legal requirement for a marine spatial plan for The Netherlands. This policy document includes The Netherlands’ Maritime Spatial Plan (fulfilling the requirements of the [EU Directive on Maritime Spatial Planning \(2014/89/EU\)](#) and reflects the government’s policy choices for the North Sea. The [North Sea 2050 Spatial Agenda](#) developed in 2013–2014 constitutes a longer-term vision for the North Sea. This vision was integrated into the Policy Document for the North Sea 2016–2021. The Spatial Agenda specifically looks at the opportunities presented by the sea, dovetailing with the ‘Blue Growth’ strategy. In addition, it examines the opportunities and problems of multiple use of the sea.

Planning responsibilities

Responsibility for developing an overall spatial plan for the Netherlands lies with the [Ministry of the Interior and Kingdom Relations](#), however the responsibility for the development of the marine plan lies with the [Ministry for Infrastructure and Water Management](#). In terms of regulating sectors, the [Ministry for Economic Affairs and Climate Policy](#) is responsible for the implementation of the Mining Act which regulates oil, gas and carbon capture sectors. They are also responsible for the implementation of the Wind at Sea act, together with the Ministry of the Interior and Rijkswaterstaat (agency of the Ministry of Infrastructure and Water Management). The [Ministry of Agriculture, Nature and Food Quality](#) is responsible for fishing and nature conservation whereas the Ministry of Infrastructure and Water Management is responsible for the implementation of the Water Act (under which falls the Maritime Strategy Framework Directive). The Minister of this Ministry is responsible for the coordination of



North Sea Affairs. The [Interdepartmental Directors North Sea](#) consultative body (IDON) with representatives for all relevant ministries is the coordinating body to prepare this. A data portal for marine spatial planning has been developed and a spatial planning tool is in development, by Rijkswaterstaat and available at [Noordzeeloket.nl](#)

Spatial extent of marine plans in The Netherlands

The extent of the sea area covered by the marine plan is circa 58,000 km². The plan extends throughout the Territorial Sea and the EEZ and extends from coastal baselines. The area 0–1 km from baselines is managed through shared jurisdiction between Local Authorities (LA), with central government having sole jurisdiction beyond 1 km. The Eems-Dollard and the Western Schelde are regarded as transitional waters, and the Wadden and the Eastern Schelde as coastal waters under the Water Framework (they are not considered to be part of The Netherlands Marine Strategy). Terrestrial spatial planning policy applies to these areas. The spatial planning aspect of the Policy Document on the North Sea 2016–2021 applies to the EEZ and territorial waters outside of LA jurisdiction, whereas non-spatial aspects may be appropriate to areas where there is LA jurisdiction.

Allocation of marine space

The Netherlands identified six clear marine national planning priorities (Fig. 3):

- 1) oil and gas installations and infrastructure,
- 2) carbon capture and storage requirements,
- 3) renewable energy installations and infrastructure,
- 4) shipping lands,
- 5) military exercise areas, and
- 6) sand and aggregate extraction.

MPAs are a further example of boundary constraints identified within the policy plan 2016–2021. As a matter of principle, there is currently no development of OWF within Natura 2000 sites (marine protected sites protected under the EU Birds and Habitats Directives).

Marine space in The Netherlands is considered to be multiple use. However, when there is conflict between sectors, then decisions are taken in favour of the priority sectors; therefore, there is a clear overall hierarchy of special allocation. This hierarchy is further refined because there is an established methodology to follow in cases of conflicting demands by the priority sectors to determine which sector has primacy.

The expansion of the OWF network is likely to result in an increase in the conflict between existing users of the marine site, this has the potential to hamper the development of this strategic priority. Where this occurs, efforts are taken to remove the conflicting existing use (i.e. commercial fishing) from the proposed OWF site, or to modify the operations of the existing use to enable the OWF development. There exists the ability of the government to modify existing permits/licences to operate held by other sectors. This is accepted as a general business risk.

The Netherlands is explicit in its Policy Document (by not identifying within the planning priorities commercial fishing as an activity of strategic priority) that fishing is in fact of secondary importance. Limited engagement by the fishing industry when marine planning was



initiated is identified as one of the factors that has resulted in the current situation. Since the establishment of [VisNed](#) in 2010 (a Dutch fishermen’s association), engagement between the industry and government has improved. The current situation is one where fishing (unless prohibited for safety or environmental reasons) can occur throughout Dutch waters.

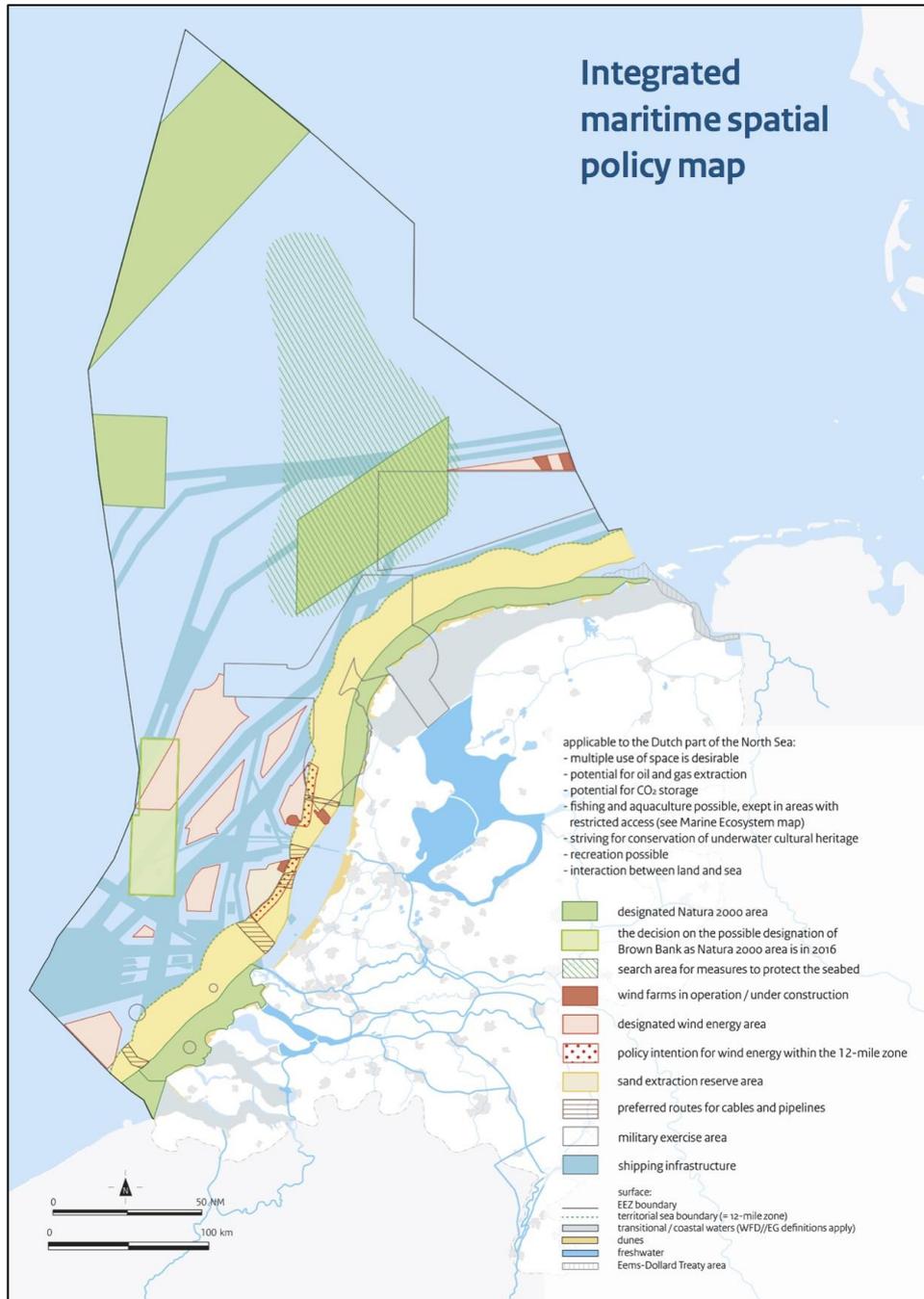


Figure 3. Spatial allocation of priority sectors throughout The Netherlands marine spatial plan area. Source: Policy Document for the North Sea 2016–2021.



At present, this does not create significant problems for the commercial fishing industry because the areas allocated to the priority sectors within the plan are not developed yet and nor does some of the development preclude collocation of activities (Fig. 4). Concerns regarding spatial restrictions that may constrain fishing operations in the future have led the commercial fishing sector to explore how they can influence the siting of OWF developments. VisNed is also analysing Vessel Monitoring System (satellite tracking required under the Common Fisheries Policy [CFP] for monitoring, control and enforcement purposes) data to identify core fishing areas that can be incorporated into the marine policy and planning process. At present (unlike in the UK), commercial fishing is prohibited from occurring within OWFs. However, there are ongoing discussions regarding the partial lifting of this restriction to allow non-demersal fishing, e.g. lining within OWFs. However, there are concerns regarding the ability of fishermen to insure vessels in order to access fishing grounds within OWFs.

Offshore aquaculture, identified by the European Commission as a blue growth sector, has not been allocated marine space as the assumption in The Netherlands is that this activity (anticipated to be seaweed harvesting) will be collocated within OWF developments. When or if OWF developments come to fruition, the displacement of commercial fishing activities could direct additional fishing pressure into previously lightly fished or unfished locations, resulting in increased environmental impact (Vaughan 2017).

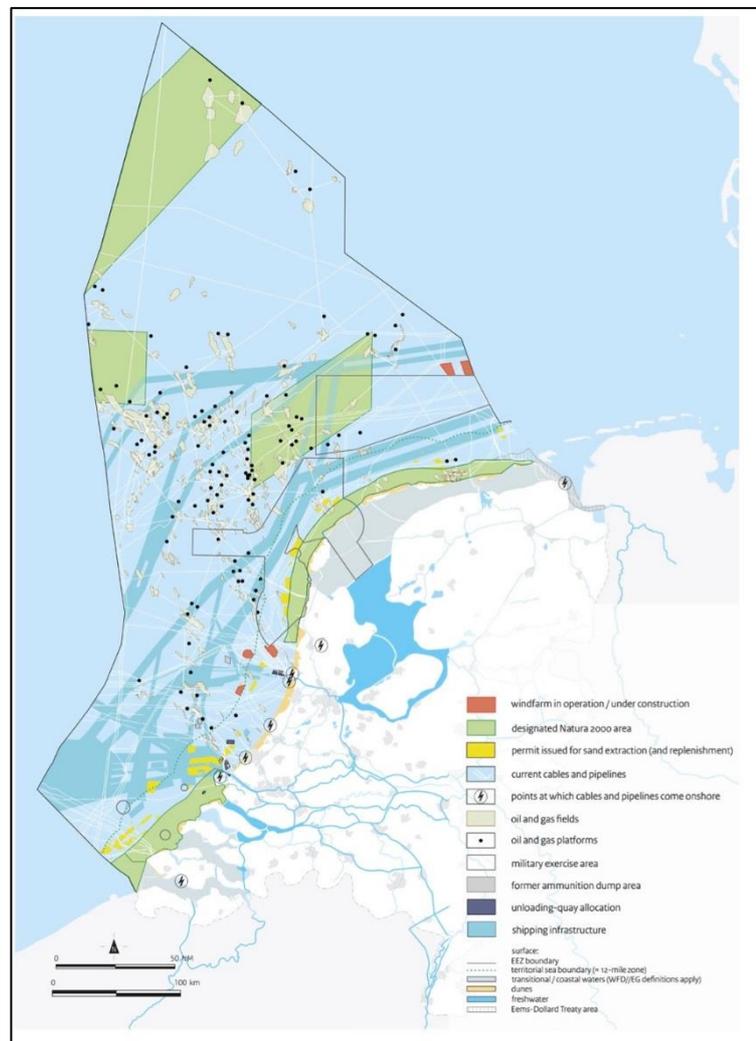


Figure 4. Current use of The Netherlands marine spatial plan area by different sectors. Source: Policy Document for the North Sea 2016–2021.



Review of the maritime spatial plan

The plan is intended to be revised every six years.

Incorporating marine protected areas

The Netherlands MPA network principally relies on the designation of sites to protect species and habitats protected through the EU Birds and Habitats Directives. The sites form part of the European Marine Site, Natura 2000 network. There are no additional formally designated protected areas (Fig. 5). Additional protection of the marine environment is provided for through MSFD marine protected area measures (Art. 13) when the habitats do not qualify for protection through the Habitats Directive. In this situation, fisheries management measures can be introduced (there are proposals to protect parts of Frisian Front and Central Oyster Ground against habitat damage by demersal fishing activities). Where these management measures are proposed for locations that are accessed by other Member State (MS) fishing vessels, then these fishery management measures are agreed through the use of the CFP Article 11 process to develop Joint Recommendations that are submitted to the European Commission for adoption. This is a lengthy process.

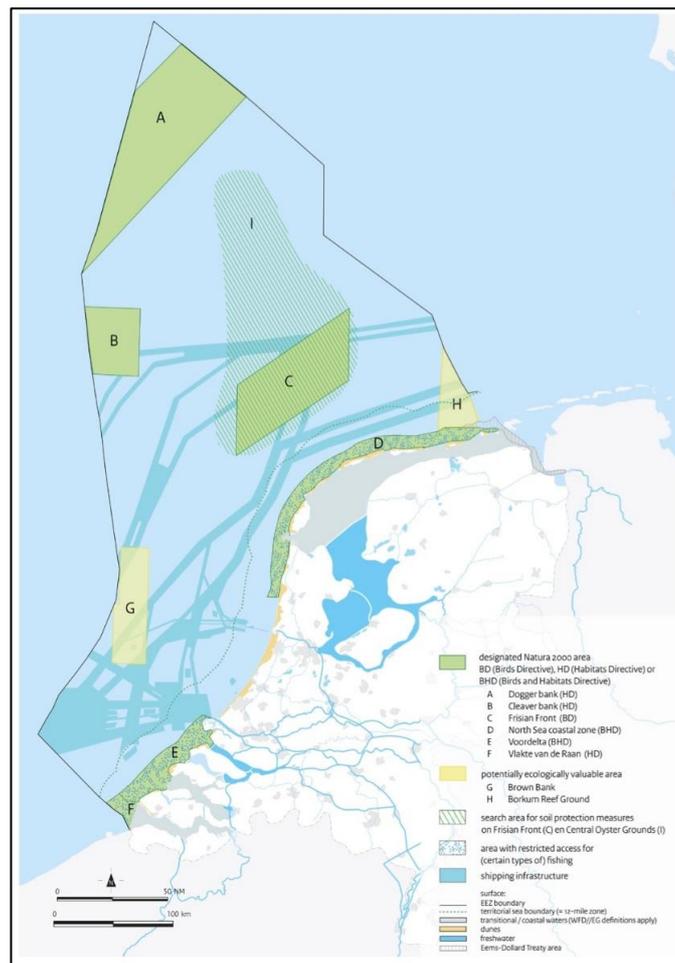


Figure 5. MPA distribution in The Netherlands. Source: Policy Document for the North Sea 2016–2021.



Offshore windfarm licencing rounds

There have been several rounds of OWF development to date in The Netherlands. They are detailed below.

Round 1 (2006): ostensibly a technical/feasibility exercise.

Round 2 (2009): during this round, an approach was taken to identify where OWFs cannot be located. Developers were required to conduct all required environmental and feasibility assessments. Eighty-two permits to operate were submitted to the government by developers for consideration. The combined anticipated output of these submissions was 21 GW/yr. Twelve of the submissions were deemed potentially feasible. Three permits to generate a combined output of 3 GW/yr were issued based on the available government funding when the strike price¹ for the developments was agreed. Developers were requested to withdraw the outstanding nine submissions by the government so that it could develop a further licencing round.

Round 3 (all OWFs under this round are expected to be operational by 2023): a fundamentally different approach was taken by the government. The government identified the locations for future developments. It then undertook the environmental and technical feasibility assessments. This cost, previously met by the developer, was now taken on by the government. By adopting this approach, the government de-risks the development for investors. OWF developers are guaranteed that they will receive a permit to operate and they do not need to conduct expensive technical, feasibility and environmental assessments. This approach speeds up the consenting process and enables comprehensive cumulative impact assessments to be developed by the government (because it knows the extent of developments to be permitted). This approach also allows the spatial impacts of developments to be coordinated and minimised. To further assist developers and to streamline the consenting and construction process, the government has taken on the responsibility for developing both the offshore power transformer connections and the cabling required to bring the electricity ashore (Fig. 6). This removes the requirement for each OWF developer to install their own power transmission network, thus reducing costs and physical infrastructure, thereby reducing environmental impacts. This cost, borne by the government, is recouped as the strike price is then at or near zero.

Round 4 (to be completed by 2030): A decision on whether to progress with Round 4 is anticipated shortly. It is anticipated that the assessment and consenting process will be similar to Round 3.

¹ The 'strike price' is the agreed price that the OWF developer/operator will be paid for each unit of electricity produced for the duration of the agreement – this is in essence a subsidy paid for by the government to encourage development and to reduce risk exposure by the developer. The strike price is agreed through competitive auction.

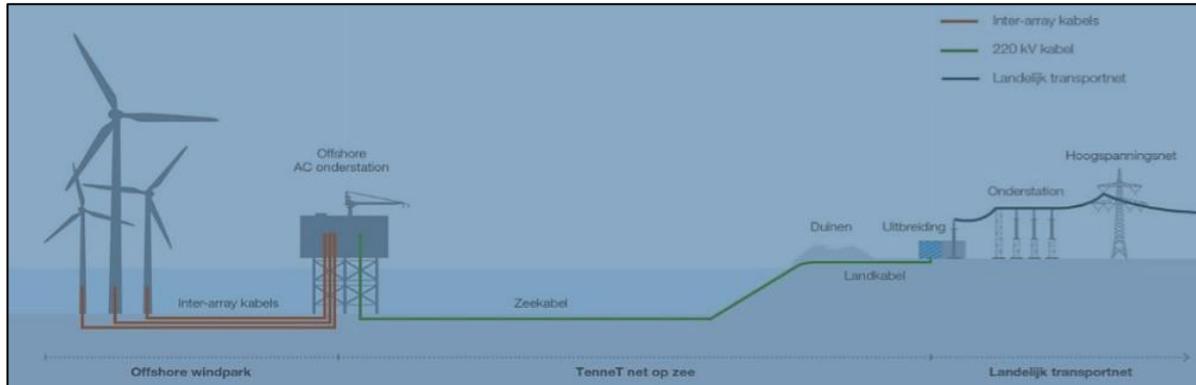


Figure 6. Development responsibilities of the government and OWF developers. The turbines and the inter-array cabling identified in red are the responsibility of the developer. All other infrastructure development is the responsibility of the government. Source: Wilbrink 2018.

The scale of demand for marine space for OWF developments becomes clear

Following the [Paris Agreement](#), energy requirements to meet the targets in the agreement were developed by [IBAR](#) in collaboration with the Ministry of Infrastructure. The report ([2050 An Energetic Odyssey – The North Sea and Energy Transition](#)) identified that the equivalent of twenty-five thousand 10 MW turbines with inter-array spacing of 1 km would be required. Clearly, delivering even a fraction of that number of turbines would require not only significant international cooperation, but also choices to be made that detail how marine space should be allocated in the future.

A [Political Declaration on Energy Cooperation between the North Sea Countries](#) was signed by (amongst others) The Netherlands and the UK governments in 2016 to cooperate in order to facilitate the transition to renewable energy. This declaration was a recognition that the expansion of the OWF sector on the scale required to meet the Paris Agreement was unlikely to be feasible without significant cooperation. This declaration had a work programme relating to marine spatial planning, of which the elements most pertinent to this report are:

- coordinating the planning and development of offshore wind and grid projects beyond national borders, including area mapping;
- developing a common environmental assessment framework;
- increasing the availability and interoperability of marine data for planning, impact assessment, licensing and operations; and
- exchanging best practices on permitting procedures and work on the modalities of a coordinated permitting process for concrete regional or sub-regional joint offshore projects.

A common assessment framework is required because different countries conducting cumulative impact assessments in the North Sea take different approaches to licensing and consenting. This makes it difficult to identify various sectoral developments that are likely to be consented in the future, thereby rendering cumulative impact assessments obsolete. To focus the work streams, the following key taxa have been chosen for study: the harbour porpoise,



bats and four bird species. The [Joint Nature Conservation Committee](#) (JNCC) is the lead UK conservation advisor participating in this project.

The Policy Document for the North Sea 2016–2021 is already considered obsolete because of the pace of OWF development and the government’s ambition to make progress with meeting the Paris Agreement on climate change and the requisite development/expansion of renewable energy. In order to reflect these ambitions, an overall vision is in development. The publication of this report is anticipated to be during 2019. The vision will then be subject to a Strategic Environmental Assessment (SEA). The SEA will then be reviewed by the [Netherlands Commission for Environmental Assessment](#), which will then provide independent advice to the government on environmental constraints.

Once the SEA has been completed and advice taken, an updated Policy Document can be introduced and in place by 2021. The current assessment on the additional OWF development that can occur without having an adverse effect on the environment is calculated to be circa 6.1 GW. However, the ambition is to generate substantially more energy than this. There is now, unsurprisingly, increasing awareness that there is a potential accumulation of impacts that could limit developments – contrary to political ambition.

Similar to the UK, at the point of making a decision to consent to a development where there is likely to be adverse impact on protected species or habitats, the appropriate minister can still consent to a development citing Imperative Reasons of Overriding Public Interest. However, this decision is open to legal challenge and alternatives must first be sought and compensation measures taken to mitigate the impacts of the development. Significant compensatory measures have not been identified to date by the government for OWF developments.

Scenario analysis as a tool to test the robustness of marine plans

The official advisory body independent of the government, the [PBL Netherlands Environmental Assessment Agency](#), recently published a scenario analysis for 2030–2050 with four scenarios: high/low economic development and stronger/weaker sustainability policies. The report is clear that under both the high economic development and stronger sustainability scenarios (driven by increased OWF and nature protection) there will be significant change in the allocation of marine space and that there will be sectoral winners and losers. The scenario analysis will be used to assess whether the planning policies developed in the updated Policy Document are robust.

Future developments

Work is ongoing to develop a Policy Document to replace the 2016–2021 version; this will also form part of a new overarching spatial plan for The Netherlands being developed by the Ministry of the Interior and Kingdom Relations. This work is being completed through the [2030 North Sea Strategy](#) development process. It is anticipated that a preliminary plan will be published later in 2018. The intention of the document is to establish a strategic agenda for future development.



The Netherlands: insights developed through discussions with scientists, managers and regulators.

Up to a point, there have been two separate discussions to date in terms of marine planning in The Netherlands: (1) how to manage impacts of the seabed and (2) how can windfarms and fishing co-exist? There appears to be a desire to combine these discussions within government and it is recognised that there will be altered opportunities for future use of marine space as The Netherlands embraces the OWF element of the blue growth and climate change action agendas.

There is a growing realisation within The Netherlands that there is an urgency to approach the question of how marine resources can be developed while ensuring that the environment is also protected, in a coherent manner. This realisation stems from concerns that cumulative impact assessments are not identifying the acceptable levels of activity within the planning area. How to manage the allocation of marine space and combine uses of marine space is thus considered by The Netherlands to be extremely pertinent.

The current cumulative impact assessment process in The Netherlands considers within-sectoral cumulative impacts (i.e. windfarm A + windfarm B impacts) to be part of the environmental impact assessment of a project. There is no consideration of cross-sectoral cumulative impacts (i.e. windfarm impacts + commercial fishing impacts).

The Netherlands cumulative environmental assessments consider OWF developments but do not incorporate terrestrial windfarm developments. This approach reduces the collision mortality rates but possibly underestimates the impact on protected bird species.

There are growing concerns in The Netherlands regarding stakeholder fatigue. Stakeholders are regularly consulted at political, sectoral and project levels. This requirement to engage can result in the interests of strong sectors dominating discussions – in essence, the development of a ‘pay to play’ situation, where smaller sectors are unable to represent themselves adequately.

There is an assumption that ‘new’ marine space will be generated over time as the existing oil and gas developments within the North Sea decline. This assumes that (in line with current OSPAR requirements) the infrastructure of the development, such as well heads, are removed in their entirety. However, this is significantly harder than originally envisaged (when the developments were initiated). Moreover, this ‘new’ space may not materialise if these sites become suitable for carbon capture and storage as this technology matures and the existing infrastructure is repurposed.

Other than coastal aquaculture developments, there has not been a consideration of offshore aquaculture and how to incorporate the envisaged significant growth of this sector in the future, other than to assume that it can be co-located with OWFs.

Fishery measures to provide environmental protection have to be undertaken in offshore situations through the CFP Art. 11 process (which may then preclude commercial fishing in certain locations and potentially at certain times of the year). Marine space can be reallocated to enable other sectors to operate (i.e. OWF sites are identified which preclude fishing) without going through the Art. 11 process. Therefore, the question is whether securing environment



protection from fishing activities (by precluding fishing from an area) has to meet higher thresholds for action. For example, windfarms can be established and preclude fishing activities without requiring other Member States' approval. There is also the possibility that fishery management measures derived through the Art. 11 process may lead to compromises that deliver sub-optimal environmental protection because the development of agreed Joint Recommendations requires negotiation between countries.

The public consultation on The Netherlands MSFD Strategy Actualisation is imminent. There will be a six-week public consultation period. Following this, the Actualisation document will be adjusted during April and May 2018 before being sent to ministers for approval and then submission to the European Commission. This review is based on the OSPAR Intermediate Assessment for the North Sea with additional national data. It considers the appropriateness of the definition of GES as well as the associated targets and indicators. The definition of GES is expected to be tightened after feedback from the European Commission that the existing version is too vague. There is an assumption that through the existing MSFD Programme of Measures (POM), GES will be achieved by 2020 for most of the descriptors.

The MSFD assessment is seen as the key mechanism by which to assess the effectiveness of the marine plan. It is anticipated that the assessment will be used to identify where sectoral action needs to be taken to deliver GES and also how marine space should be allocated in the future. However, for the assessments to drive change and additional management measures delivered by the sectoral regulators, there is the recognition within the government that the MSFD descriptor needs to be very clearly articulated.

An assessment on the current progress of MSFD is being conducted at present. A progress report on this work is expected in autumn 2018. The impact of the POM on the environmental status will be assessed in 2019–2020 as part of the update of the POM (Marine Strategy Part 3) due during 2021.

Commercial fisheries operate under the assumption that they can fish throughout Dutch waters unless prohibited (due to fisheries management measures); however, the strong spatial allocation agenda within The Netherlands is likely to constrict their activities in future. As The Netherlands confronts this problem, this may provide an opportunity for the UK to learn from (there is greater marine space within English waters and therefore the issue is pressing, but less so than in The Netherlands).

It is anticipated that the acceptable level of bird collisions will be reached by the Round 3 OWF developments and this will create a barrier for further development. Bird collisions are not considered problematic for migratory species because models are being developed that will predict migration patterns up to three days in advance. This will enable OWF operators to disable those turbines for the duration of the migration activity. A three-day notice warning that a shutdown will be required will provide enough time for the power companies to source/route energy from elsewhere on the international grid. The modelling technique will also be combined with the use of radar to identify migrating birds to deliver an effective mitigation measure.

The Netherlands government is considering the collision incidence data for Round 1 OWF installations to be incorporated into the current population assessments of bird species as these



OWF developments have been operating for in excess of ten years. This then provides additional capacity for collisions in assessment models.

The Netherlands has a strategic research programme ([Dutch Governmental Offshore Wind Ecological Programme - WOZEP](#)) similar to the UK [Offshore Renewable Joint Industry Programme](#). The programme in The Netherlands is funded by the government.

Recognising the tension between achieving the Paris Agreement and individual species protection, the government of The Netherlands has approached IUCN to facilitate a discussion with eNGOs on 1 March 2018 with a view to identifying how these tensions can be reconciled. Similar discussions are anticipated across various EU Directorates General (Energy, Climate Action, Environment, Maritime Affairs and Fisheries).

Concerns have been raised that allowing fishing within the OWF developments may increase bird collisions when gull species follow fishing vessels into the OWF. There are also concerns that the Demersal Landing Obligation (discard ban) may result in declines in protected seabird populations. If this is to occur, this may result in a reduced acceptable bird collision mortality rate – NB the number of collisions will also decrease in number if the population declines.

The University of Utrecht has been commissioned to review how different EU MS implement the Birds and Habitats Directives. This research will have relevance to the UK.



Norway

The origins and evolution of marine planning in Norway

The origins of marine planning in Norway can be traced back to governmental commitments to meet international obligations identified at the Johannesburg and Rio Summits. During this period there, was an increasing public understanding of the importance of the marine environment and a developing political basis for its protection. The system with integrated management plans and the first management plan for the Barents Sea–Lofoten area was first announced in the white paper [Protecting the Riches of the Sea](#) [Report No. 12 (2001–2002) to the Storting (Parliament)] in 2002, and followed up with the first management plan in 2006.

The incorporation of an ecosystem-based approach to the management of wild living marine resources was introduced through the [Marine Resources Act 2009](#). In addition, new management tools have been developed to promote an ecosystem-based approach of fisheries management. Prior to this, concerns regarding the exploration and exploitation of petroleum reserves within the Lofoten Islands area was gaining attention. A new coalition government coming to power in 2001 with a strong environmental agenda led to the development of an integrated approach to marine management in Norway. Ministries and executive agencies were tasked with developing Integrated Management Plans (IMPs). Annually, the government directs the Ministries to carry on their work on integrated management. Funding for IMPs was initially provided. The further development of IMPs and marine planning in general in Norway is now considered as business as usual.

An ecosystem-based approach to marine environmental policy exists in Norway. IMPs have been established for each of the three marine areas (Large Marine Ecosystems) (Fig. 7) that are identified in Norwegian waters. The first IMP was developed for the Barents Sea–Lofoten Islands area in 2006, and it was updated in 2011 and 2015.

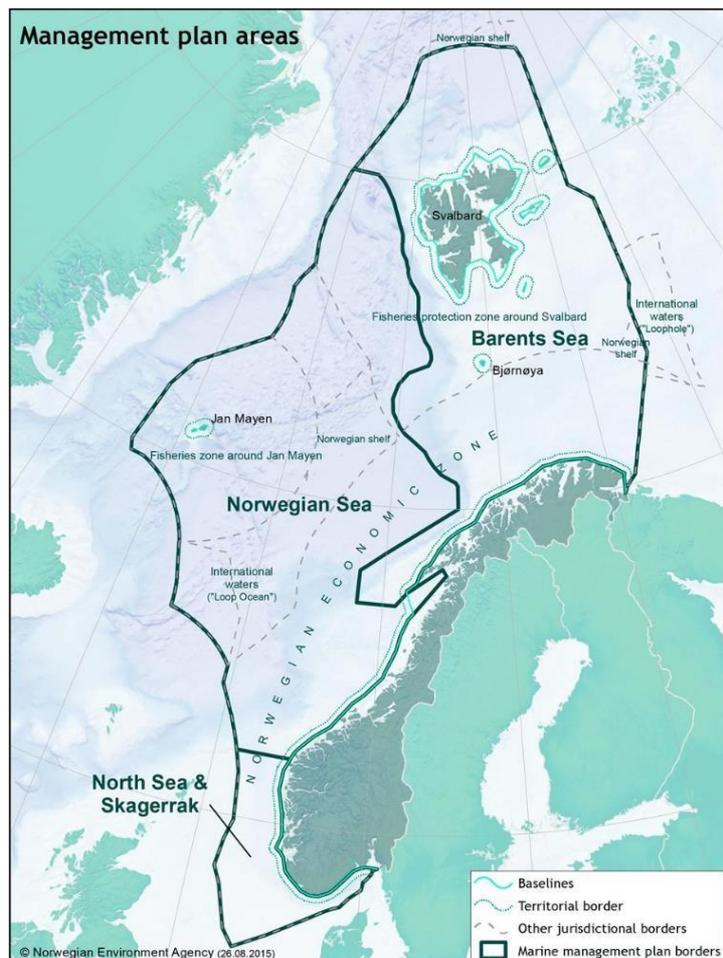


Figure 7. Extent of Integrated Management Plan areas in Norway. Source: Norwegian Environment Agency



IMPs were subsequently developed for the Norwegian Sea in 2009 (updated in 2017) and the North Sea–Skagerrak area in 2013. The IMPs provide a framework for the sustainable use of natural resources and ecosystem services while maintain the structure, functioning, productivity and diversity of the marine ecosystem.

Elements of strict spatial allocation are incorporated into the IMPs, with areas identified for petroleum exploitation and shipping clearly set out. In principle, commercial fisheries have access to all areas. In 2002, there were initial discussions about the locations at which oil and gas developments and fishing could occur – these agreements still stand. Where these areas were in conflict, the IMP process looked at why these areas were important to the fisheries and sought resolution. Although Norway has an extensive sea area, part of its continental shelf is very narrow in places, which often precludes the ability to co-locate activities.

In Norway, IMPs are not used to regulate the fisheries management process at present, although there are calls for this to be the case as it is anticipated that this will aid the delivery of ecosystem-based management across sectors. Although fisheries management is not directly influenced by the plan, in reality it is. The petroleum exclusion areas within the IMPs reflect that in these areas, ecosystem function and fisheries activity are the prioritized purposes. Various plan objectives are delivered through fisheries management, i.e. Norwegian red list species based on the IUCN criteria are considered in fisheries management plans. [The Institute of Marine Research](#) (IMR) is now asked more frequently to focus on these ecosystem-based issues. The [Directorate of Fisheries](#) has also developed an ecosystem-based assessment tool to aid in their decision-making processes. As well as important areas for specific maritime sectors being identified within the plans, there has been the identification of particularly valuable and vulnerable areas (VVAs) within the various IMPs.

These VVAs are areas that, on the basis of scientific assessments, were of great importance for biodiversity and biological production in the entire sea area. The criteria used to identify VVAs were broadly based on those of the Convention of Biological Diversity for areas of [Ecologically or Biologically Significant Marine Areas](#).

These VVAs are not formally protected, yet the IMPs require that proposed development within these areas should pay special attention where they are identified. Commercial activities occurring within VVAs should demonstrate *special caution*; however, special caution is not defined. The extent of VVAs varies between the three IMPs (Fig. 8). An area identified as a VVA which prohibited petroleum exploitation was opened up to this activity following review of the scientific identification of the area. Formal legal status of VVA status may have restricted this reclassification of this area.

Norway, as a Member of the European Economic Area but not a European Union Member State (MS) in its own right, complies with the Water Framework but not the Marine Strategy Framework, Marine Spatial Planning or Habitats and Birds Directives. It does, however, seek many of the outcomes of these directives as these focus on the delivery of international agreements and treaties to which it is a signatory. Many of these treaties and agreements require transboundary co-operation and, therefore, there is a degree of alignment between



Norway and Member States. Norway is also a party to OSPAR – the mechanism by which 15 countries and the EU cooperate to protect the marine environment in the North East Atlantic.

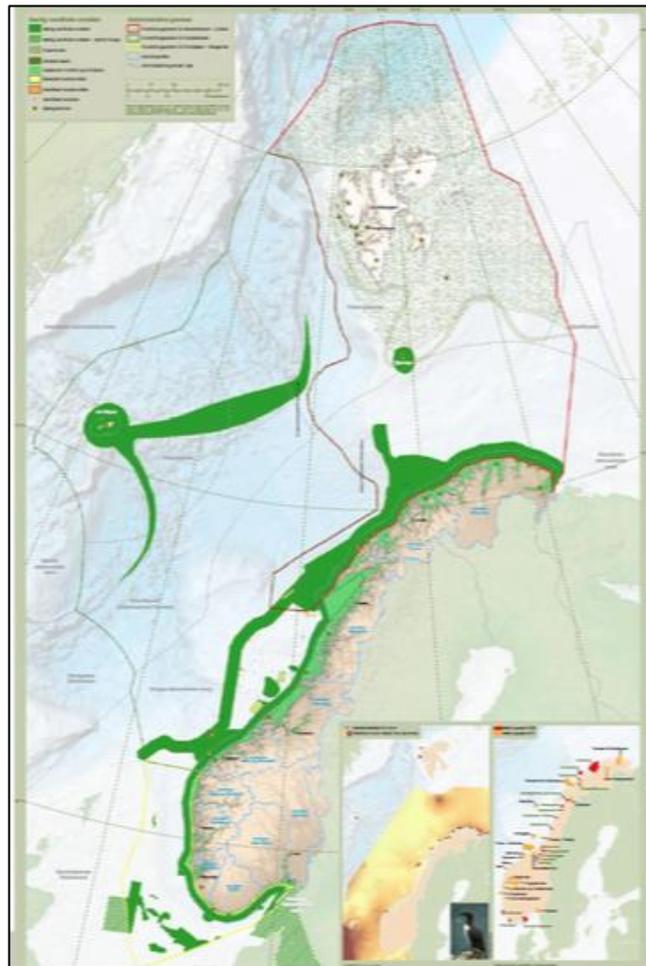


Figure 8. Spatial extent of marine plans in Norway and locations of particularly valuable and vulnerable areas (dark green). Source: Norwegian Environment Agency

Spatial extent of marine plans in Norway

The IMPs initially covered the sea area from 1 to 200 nm from the coastline, but they now extend from the baseline to 200 nm (territorial sea + EEZ) and the Norwegian continental shelf (Fig. 9). The use of this area is regulated by numerous sectoral laws, principally covering oil and natural gas resources, and fisheries. A decision not to cover the 0–1 nm zone in the IMPs was taken as this would add a further layer of complexity to plan development and, in any event, this area falls within the remit of the terrestrial planning legislation. In practice, this is not a problem, since the thematic scope (and scale) between the management regimes has not been in conflict with each other. Within this area (0–1 nm), planning law provides rights to Local and Regional Authorities (LAs and RAs) with both being able to develop marine plans. There are significant tensions with this situation, not least where RAs seek to develop binding



legislation (fettering the ability of the LAs to develop policies). As such, this has not occurred to date.

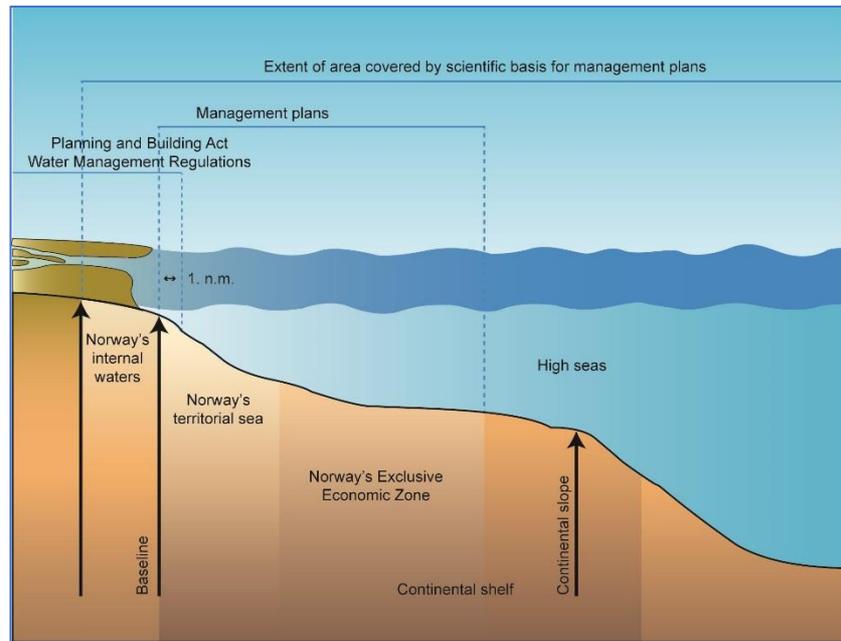


Figure 9. Marine planning boundaries in Norway. Source: Ministry of Climate and Environment, Norway. Adapted from OSPAR QSR 2010.

There is not a legal requirement for an LA to have a plan unless there is a need for a plan; if this is the case, then they must develop a plan. Where an LA does have a plan in place, there is no legal requirement for a plan to be reviewed, which in many cases has resulted in plans that are outdated. The LAs (approximately 280) are, in many cases, small municipalities with limited resources and expertise to develop and review the plans.

Aquaculture development in Norway has outstripped the ability of LAs to effectively plan for these developments (for which there is significant government support); therefore, although aquaculture developments are not exempt from compliance with the plans, there is a process that developers can follow to secure the relevant consents for their aquaculture operations. New, larger RAs are being created and there is an expectation that these may be able to aid the development of local marine plans.

There has been extensive mapping of seagrass beds, principally because these areas are important fish nursery grounds. When local plans are developed, these areas have to be taken into account (in accordance with the [Nature Diversity Act](#) even if the areas are not formally protected). If they are not suitably protected then local Governors can take action to prevent development that will impact these areas.

The planning ability of LAs in relation to aquaculture operations relate to where a farm can be located and not how it can operate. This causes tensions as farms can alter their production processes and stocking rates for instance once consented which can lead to increased



environmental impacts that were originally anticipated. Management restrictions can be placed on these operations, but by other relevant authorities.

Integrated Management Plan – planning responsibilities

The [Ministry of Climate and the Environment](#) leads the marine planning process and is directed by the Ministerial Steering Group (Fig. 10). The scientific basis for the IMPs is coordinated by the Management Forum of the Norwegian Sea Areas, in collaboration with an Advisory Forum on Monitoring, which is led by the IMR. [The Norwegian Polar Institute](#) was initially responsible for the production of the common factual basis of the integrated management plan for the Barents Sea–Lofoten area. The Norwegian Environmental Agency is the Head of the Management Forum and shares the Secretariat of this group with the Norwegian Polar Institute.

Management plans – organisation

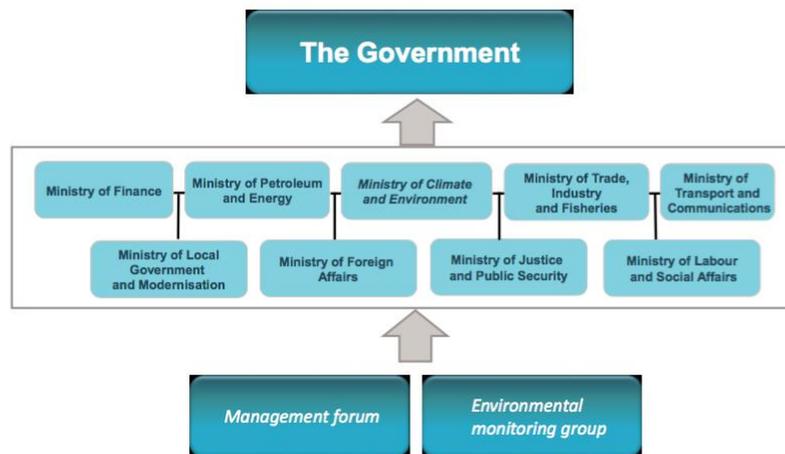


Figure 10. Integrated Management Plan governance in Norway. Source: Ministry of Climate and Environment, Norway.

It is the role of the Management Forum to set out the factual basis for the IMPs, which includes the state of the environment, current use and future threats; however, the decision-making and direction setting is provided through the White Paper – the IMP that the Government presents/proposes to the Parliament.

Stakeholder engagement

Stakeholder engagement is primarily facilitated through conferences, oral hearings and consultations which invite comment (Fig. 11). The conferences are used primarily to discuss the factual basis for the marine plans and to supply or challenge datasets, give their views and propose measures. There is the expectation that stakeholders will engage in the general planning process through the most relevant government agency and that this agency will consider and reflect the views of the stakeholders as they see appropriate. Once the factual basis is agreed, the marine planning process progresses to the political phase.

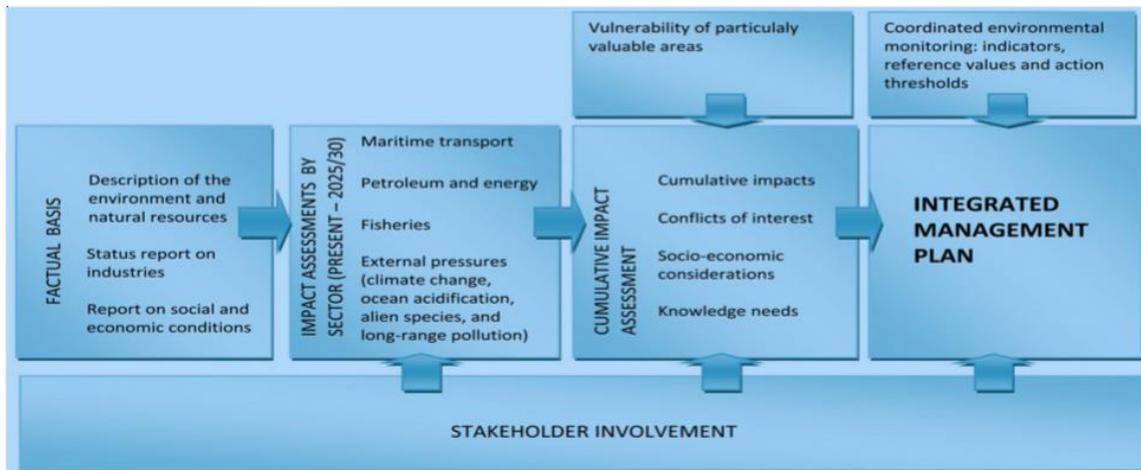


Figure 11. Norwegian process for developing the Integrated Management Plan. Source: Ministry of Climate and Environment, Norway.

The status of the Integrated Management Plans

The IMP is in essence a steer from government to its Ministries on how they should go about business. The IMPs are political policy documents and do not have formal legal status. A consensual approach to politics and management in Norway has led to the reliance on policy statements rather than legislation directing management bodies to implement measures in order to deliver the IMP objectives. As such, a change of parliament could see the IMPs being altered; however, this is thought unlikely due to the consensual and collaborative approach taken to develop the IMPs. The IMPs are explicit that management bodies should take into account the marine environment during their decision-making process.

Review of marine plans

Initially, the intention was to have a four-year update period with a major revision at 20 years. It is now the intention that the IMPs will be updated every four years with a major review at 12 years. The updating frequency is not set out in legislation but has been formally requested by the Parliament. The Management Forum has recently been tasked with identifying all of the management actions identified in the three IMPs along with the government body responsible for delivering the actions. A report will be produced and submitted to the Steering Committee setting out the delivery to date of management actions. This will be a publicly accessible document.

Incorporating marine protected areas

Nature protection zones are defined for the coastal region. Some special protection zones have been defined for sensitive benthic areas. A mapping project ([MAREANO](#)) instigated in 2005 is systematically improving knowledge of the benthic habitats and is focused on VVAs. There is a presumption that throughout Norwegian waters that there should not be development if there is a lack of knowledge about the habitats that could be impacted by developments. The principle MPAs in Norway are located around Svalbard, where National Parks have been designated. These are principally terrestrial designations; however, due to there being a



significant terrestrial/marine overlap in terms of resource use by marine mammals and seabirds, the protection area extends seaward to 12 nm from the baselines. In essence, all extractive and damaging activities are prohibited within these areas other than fishing for shrimp (this is only authorised in waters of depth greater than 100 m).

Environmental protection through proxy marine protected areas

Environmental benefit can be derived from management measures introduced to achieve other purposes, as is the case in most other countries. Closure of areas for various purposes is a widely used regulatory measure in Norwegian fisheries management. Over the years, large areas in the Barents Sea have been closed (using a Real Time Closure scheme) due to too high intermixtures of undersized fish. At Bear Island, for example, a temporary demersal trawling prohibition was introduced with the explicit intention of protecting juvenile fish. This demersal protection (from the islands out 12 nm) has resulted in the proxy protection of the seabird populations on the island from disturbance. It has also provided protection for the important prey species of these seabirds. Although a fishery management measure (the demersal trawling prohibition) was introduced as a temporary closure, it is, in all intents and purposes, a permanent closure as the multiple benefits of closing this area to this demersal trawling are accepted by the fishing community.

Concerns regarding the status of seabirds have been raised because in the early 2000s, existing population data were 10–15 years old and a paucity of knowledge regarding their foraging locations/ranges was hampering efforts to improve management of these species (which in some cases were experiencing population declines). A commitment to improve the knowledge of the seabird populations and also to improve habitat mapping, articulated in the IMPs, resulted in the establishment of two projects: (1) [SEAPOP](#) (seabird tracking) and (2) MAREANO (habitat mapping). The locations of seabird populations are now taken into account during oil and gas drilling and exploration operations as part of the licencing of these operations.

Future developments

It is anticipated that there will be a migration of inshore aquaculture operations offshore and that there will be the development of an OWF sector. Areas suitable for OWF have been identified.

There is a conference scheduled for September 2018 for stakeholders with an interest in VVAs to discuss how these areas are identified and how the information on them is updated. The conference also seeks to improve knowledge regarding how the VVAs are used, and how the environmental status of these areas has altered over time.



Norwegian Integrated Management Plans: insights developed through discussions with scientists, managers and regulators.

As the marine planning process and the data layers upon which marine plans are based matures, it is likely that the audience for the marine plans may be required to pivot towards the end-users of the marine plans. Stakeholder engagement with the general public in Norway is limited as the need for marine plans has already been articulated and is accepted. The focus on stakeholder engagement with the public instead may need to focus on what the marine plans are, how they developed to this point and how they are taken into account during decision-making.

As marine plans develop, there is a tendency to further improve the data the plans are based upon. However, a focus on this activity can detract from the more difficult task of effecting change through the plan and the policies associated with it.

There is a need to incorporate more explicitly the social and economic goals of society for marine planning to ensure that outcomes from the plans reflect policy and societal needs.

In Norway, it is implicit that development that delivers societal benefits over and above commercial fishing will override the public right to fish. Identifying core commercial fishing grounds and prioritising the presumption on the right to fish in those areas in order to protect fishing should be considered in the UK.

Throughout the marine plan development in Norway, there has been a concentration of management effort on the main areas and topics where there is potential for conflict – this has principally been related to the commercial fishing sector. This approach negates, to a degree, a piecemeal approach to the consideration of impacts from this sector. By consciously focusing on these topics, difficult decisions regarding marine use have to be addressed. This enables questions such as ‘how do we value the environment in this scenario?’ to be addressed.

Set aside proportions of fishable stock for environmental purposes – either for the public good or the speed up environmentally recovery (see Appendix IV for further information).

Develop ecosystem models for tactical purposes, i.e. to move away from expert judgement to a best evidence output from models.

The mapping portal pulls data from government institutional datasets in real time as data are input. This ensures that the data portal is continually updated and there is not a requirement to periodically update the underlying data.

There is a drive for managing marine resources in a sustainable manner and reducing the impacts from the production of petroleum. However, there is a paradox because Norway exports 10–11 times the quantity of oil it uses. ENGOs are raising the issue that Norway is in part responsible for the CO₂ emissions produced by countries using the exported oil. It could be prudent for the UK to assess the extent (if any) of fossil fuel exports to determine its exposure to this criticism. This concern relates not only to the exporting of fuels but also to the export/import of other marine resources. By strengthening environmental legislation, is the UK exporting environmental degradation if there are no requirements for imports to have been produced to similar standards?



The plans are strong in that they explicitly state ‘what the government will do’. These statements are then used to drive the delivery of projects and to secure funding for specific projects.



Discussion

Each of the areas covered by case studies have developed marine plans to meet their own requirements, and this is achieved through their own particular legal and political systems. There are differences in the extent of marine space that a country has, the uses of that marine space (both historical and current) and the strategic priorities for the future use of that space. There are no overarching binding international frameworks for marine planning with the highest order framework, which is the EU Maritime Spatial Planning Directive (Directive 2014/89/EU). There are, however, multiple international treaties and conventions that obligate nations (see Appendix I) to manage their marine resources, although in most cases they do not set out how a nation is to achieve these obligations. While this Directive sets out the framework that a MS must follow, i.e. have marine plans in place by 2021, it is not prescriptive.

Marine planning can, at one end of the spectrum, simply be a data collection and presentation exercise that aids developers and regulators to permit developments in an expeditious manner. Alternatively, the marine planning process can be extremely prescriptive in terms of the spatial allocation and hierarchical use of marine space. The extent of marine space that a plan covers may dictate how directive a plan can be. The prescriptiveness of goals within a marine plan area can also drive high spatial allocation. For example, it is extremely difficult to be highly directive in a plan covering a large area, as high spatial prescription lends itself, in most instances, to smaller plan areas where there are very specific objectives to be delivered and there is considerable knowledge available upon which to base decisions. In this way, marine plans are more akin to zoning. It is therefore important to first establish what a plan is trying to achieve and then establish the plan area appropriate to those goals.

Plans and the processes by which the plans are developed need to be adaptable to reflect change – be it legal, climate, political or technological. Our understanding of the environment and how it is changing as a result of climate change is developing all the time. How marine use will change over time is also unclear, but that change is likely to be quicker than we anticipate. Two examples illustrate this clearly:

- 1) The Barents Sea IMP in Norway in its first iteration considered climate change as an issue to address in the future; however, the update of the IMP brought that consideration forward.
- 2) The Netherlands Policy Document 2016–2021 is already considered obsolete as the government's ambitions in delivering its commitments to the Paris Agreement in relation to climate change have necessitated a significant review.

If marine plans are to articulate a clear vision and priorities are set around this vision, conflict will be at the heart of the plan. Douvère and Ehler (2008) set out that two types of conflict take place in marine planning, the first where different uses of marine space compete with each other and the second where the user and the environment are in conflict. Thus, it is extremely difficult to account for and manage the cumulative impacts of developments in the marine environment.

Although conflict in marine planning can be significant, this conflict can be reduced by ensuring that the marine plans are based on (1) a common understanding on what the plans are to deliver and (2) an agreement of the factual basis for the plans, such as where activities occur



and where important habitats and species are located, i.e. the data layers. By securing consensus and understanding amongst stakeholders, areas or topics of disagreement can be focused upon. Effort can then be spent identifying how the objectives of the plan are to be achieved – and this, in many cases, comes down to political decision-making. As problems concerning congestion, contamination and conflicting needs in sea areas are better understood, then willingness to address them becomes of added importance (Haanpää and Kanninen, 2012). Because the decision-making is often political, a very important role in planning is to ensure that policy makers are basing their decisions on the best available data, which is presented in a manner that they can understand. If marine planning fails to achieve this, then marine planning can be considered a failure.

In each of the case studies, the lack of commercial fishing integration into the plans was identified as a weakness. Commercial fishing was perceived by many individuals interviewed to be highly regulated, well managed and, therefore, largely outside the planning process. This approach runs contrary to one of the key intentions of marine planning – achieving sustainable use of the marine resources in a holistic manner. This is particularly pertinent as there may be trade-offs in the future use and protection of fisheries resources in order to deliver environmental benefits or to enable other sectoral developments to progress and deliver wider societal goals that may include wider environmental benefits.



Conclusions

Marine plans are not a panacea that will deliver environmental protection and sustainable use of the marine environment. For them to be effective there needs to be clear societal direction on how the seas should be used. The plans then are required to provide the clarity that sets what we use our seas for and why we do so, while also setting out our current and future needs.

Marine planning in England has benefited by learning from those countries that have developed marine plans to date. Marine planning in England is in a strong position because it has:

- 1) a clear legal framework (unlike Norway or the USA),
- 2) it is directive,
- 3) it is time bound in terms of delivery,
- 4) there is a single layer of planning (unlike all the case studies),
- 5) accountability for marine planning is clearly defined,
- 6) review periods are stipulated and a legal requirement and
- 7) stakeholder engagement is central to the development of the plans.

The delivery of marine plans in England within the time frame specified is highly ambitious, as the requirement to deliver the plans has and will continue to coincide with review of the plans as they are introduced. The plans cover the entirety of the English seas and all marine sectors; therefore, there is the real opportunity of delivering blue growth and the sustainable use of marine resources throughout English waters. That England benefits from an extensive and legally protected MPA network and also a requirement to manage its wider seas to achieve GES is highly significant and underpins the aim of sustainable use of English waters. The extensive development of targets and indicators for the health of English (UK) waters is extremely important and relevant to marine planning. Marine planning is identified as a key tool in delivering GES through UK waters. To be effective, marine planning will need to continue to evolve in order to support a transition from a sectoral management and regulation of the marine environment to one that takes a more integrated approach.

It is anticipated that the continually evolving nature of the marine plans in England will settle down, but this may not occur until later iterations. At this point, the utility of the plans will become clearer.

There needs to be acknowledgement that it will not be possible to continually develop English waters without determining an overall and detailed vision on how we want these waters to be used in the future. This may mean that existing uses of marine space may not be compatible with that vision.

Just as the attention on MPAs in England is moving from the designation stage to the introduction of management measures stage, i.e. the phase at which environmental outcomes are sought and achieved, there will, over the next ten years, need to be a focus on the delivery of outcomes rather than marine planning outputs (stakeholder engagement, identification of objectives, the marine plans themselves, a data portal, reviews and reports, etc.).



References

Douvere, F. and Ehler, C.N., 2009. *New perspectives on sea use management: initial findings from European experience with marine spatial planning*. Journal of environmental management, 90(1), pp.77-88.

Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 establishing a framework for maritime spatial planning.

Haanpää, S. and V. Kanninen. 2012. *Maritime Spatial Planning in the Nordic context*. Project Report. YTK Land Use Planning and Urban Studies Group.

Vaughan, D., 2017. *Fishing effort displacement and the consequences of implementing Marine Protected Area management—An English perspective*. Marine Policy, 84, pp.228-234.

Key resources used to develop the case studies

The United States of America

Marine Spatial Planning Programme. UNESCO. World applications. Accessed: 28/02/2018. Available at: <http://www.msp-platform.eu/msp-practice/countries>

The White House Council on Environmental Policy. *Final Recommendations of the Interagency Ocean Policy Task Force*. July 19, 2010.

https://www.nsf.gov/geo/opp/opp_advisory/briefings/nov2010/optf_finalrecs.pdf

Executive Order 13547. *Stewardship of the Ocean, Our Coasts, and the Great Lakes*. <https://obamawhitehouse.archives.gov/the-press-office/executive-order-stewardship-ocean-our-coasts-and-great-lakes>

National Ocean Council. 2013. *National Ocean Policy Implementation Plan*. <https://www.boem.gov/national-ocean-policy-implementation-plan/>

Northeast Ocean Plan. 2017. 17th January.

https://neoplan.org/wp-content/uploads/2018/01/Northeast-Ocean-Plan_Full.pdf

Executive Office of Energy and Environmental Affairs. 2015. *Massachusetts Ocean Management Plan. Volume 1. Management and Administration*.

<http://www.mass.gov/eea/docs/eea/oceans/ocean-plan/2015-ocean-plan-v1-complete-low-res.pdf>

Executive Office of Energy and Environmental Affairs. 2015. *Massachusetts Ocean Management Plan. Volume 2. Baseline Assessment and Science Framework*.

<http://www.mass.gov/eea/docs/eea/oceans/ocean-plan/2015-ocean-plan-v2-complete.pdf>

Cape Cod Commission. 2012. *Cape Cod Regional Policy Plan*.

http://www.capecodcommission.org/resources/RPP/2012RPP_webJan2013.pdf

Cape Cod Commission. 2011. *Cape Cod Ocean Management Plan*.

<http://www.capecodcommission.org/resources/dcpc/CCOMPfinal10-13-11.pdf>



The Netherlands

Anne Reijbroek. *Dutch fisheries and marine spatial planning*. Ministry of Agriculture, Nature and Food Quality. 26.02.2018. PowerPoint presentation.

Leo de Vrees. *North Sea: management and governance – marine spatial planning*. Ministry of Infrastructure and Water Management. 27.02.2018. PowerPoint presentation.

Bert Wilbrink and Bram du Saar. *Offshore wind energy in the Netherlands: spatial planning and ecological aspects*. 28.02.2018. PowerPoint presentation.

Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 establishing a framework for maritime spatial planning.

European MSP Platform. European Commission. Accessed: 28/02/18. Available at: <http://www.msp-platform.eu/msp-practice/countries>

IBAR. 2016. *2050 An Energetic Odyssey -The North Sea and Energy Transition*. Accessed: 28/02/18. Available at: <https://iabr.nl/en/projectatelier/Atelier2050>

Marine Spatial Planning Programme. UNESCO. World applications. Accessed: 28/02/2018. Available at: <http://www.msp-platform.eu/msp-practice/countries>

Political Declaration on Energy Cooperation between the North Sea Countries. Accessed: 28/02/18. Available at:

<https://ec.europa.eu/energy/sites/ener/files/documents/Political%20Declaration%20on%20Energy%20Cooperation%20between%20the%20North%20Seas%20Countries%20FINAL.pdf>

The Ministry of Infrastructure and Environment & Ministry of Economic Affairs. 2014. *The North Sea 2050 Spatial Agenda*.

The Ministry of Infrastructure and the Environment & The Ministry of Economic Affairs (2015) *Policy Document on the North Sea 2016-2021*.

The Ministry of Infrastructure and the Environment & Ministry of Economic Affairs. 2015. *National Water Plan 2016-2021*.

The Netherlands Government Marine Planning portal. Accessed: 28/02/18 Available at: <https://www.noordzeeloket.nl/en/general/about-noordzeeloket/>

Norway

Geir Klaveness. *Management Plans for Norwegian Sea Areas –implementing the ecosystem approach*. Norwegian Ministry of Climate and Environment. 16.02.18. PowerPoint presentation.

Kristin Nordli. *Coastal planning in Norway Norwegian Ministry of Local Government and Modernisation*. 16.02.2018. PowerPoint presentation.



Anne E. Langaas Gossé. *Some points about the Norwegian model for MSP*. Norwegian Environment Agency. 16.02.18. PowerPoint Presentation.

European MSP Platform. European Commission. Accessed: 28/02/18. Available at: <http://www.msp-platform.eu/msp-practice/countries>

Norwegian marine spatial planning data portal:
<http://www.miljodirektoratet.no/no/Havforum/Forside/English/>

Marine Spatial Planning Programme. UNESCO. World applications. Accessed: 28/02/2018. Available at: <http://www.msp-platform.eu/msp-practice/countries>

Ministry of the Environment. 2006. *Integrated Management of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands*. English Translation of Meld. St. 8 (2005–2006). Available at: <https://www.regjeringen.no>

Ministry of the Environment. 2011. *First Update of the Integrated Management Plan for the Marine Environment of the Barents Sea – Lofoten Area*. English Translation of Meld. St. 10 (2010–2011). Available at: <http://www.miljodirektoratet.no>

Ministry of the Environment. 2013. *Integrated Management for the Marine Environment of the North Sea and Skagerrak (Management Plan)*. English Translation of Meld. St. 37 (2012–2013). Available at: <http://www.miljodirektoratet.no>



Appendix

I. The international context for marine spatial planning and marine plan development

Marine planning and marine plans, have developed to enable countries to meet both their international obligations and also to achieve their own objectives relating to the utilisation of marine resources throughout their seas. Marine planning has to take account of these international obligations. In many cases a country has taken steps to meet these obligations through the designation of protected species or protected areas. Where this is the case, marine protected areas and the distribution of protected species form important data layers in marine plans that can be used to guide licencing decisions regarding development proposals. Marine plans therefore are to some extent a reflection of a countries interpretation and delivery of its international obligations.

This section of the document highlights the key international treaties and conventions that have shaped marine planning to date and will continue to shape marine planning in the future.

The Convention on the Conservation of European Wildlife and Natural Habitats. Bern: 1979

The Bern Convention is a binding international legal instrument concerning Nature Conservation. It covers the natural heritage in Europe. It focuses on the protection of natural habitats and endangered species, including migratory species.

The Convention on the Conservation of Migratory Species of Wild Animals. Bonn: 1979

The Bonn Convention is a binding international legal instrument aiming to conserve terrestrial, marine and avian migratory species throughout their range.

United Nations Convention of the Law of the Sea: 1982

The United Nations Convention on the Law of the Sea of 1982 (UNCLOS), states in its preamble that issues relating to the use of ocean space are closely interrelated and need to be considered as a whole. The European Commission's view is that that MS can best achieve the obligations and of the use of rights granted under UNCLOS through the development of marine spatial plans.

United Nations Convention on Biological Diversity (CBD). Rio: 1992

Conservation of biological diversity is the subject of Chapter 15 of Agenda 21 which was adopted at the United Nations Conference on Environment and Development, in 1992, in Rio de Janeiro (the Earth Summit). The Convention has three main goals including: the conservation of biological diversity (or [biodiversity](#)); the sustainable use of its components; and the fair and equitable sharing of benefits arising from [genetic resources](#). Its objective is to develop national strategies for the conservation and sustainable use of biological diversity. It is often seen as the key document regarding [sustainable development](#) The United Nations Convention on Biological Diversity (CBD), entered into force on 29 December 1993.



United Nations Development Goals. New York: 2000

In September 2000, the [United Nations Millennium Declaration](#) was adopted setting out a series of time-bound targets - with a deadline of 2015 - that have become known as the Millennium Development Goals. Target 7b within the overarching goal - *Ensure Environmental Stability* - is relevant to marine planning:

Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss with 8.4 per cent of coastal marine areas worldwide protected by 2014.

Johannesburg plan of implementation. Johannesburg: 2002

At the World Summit on Sustainable Development, held in Johannesburg 2002, biological diversity was addressed in the outcome of the Summit: *The Johannesburg Plan of Implementation*. The Summit also endorsed the target to achieve, by 2010, a significant reduction of the rate of biodiversity loss at global, regional and national levels as a contribution to poverty alleviation and to the benefit of all life on earth,

Conference on Biological Diversity. Aichi Biodiversity Targets: 2010

The *Strategic Plan for Biodiversity 2011-2020*, set out *Aichi Biodiversity Targets* adopted at the Tenth Conference of the Parties to the Convention of biological Diversity. There were five goals (A-E) within the plan and twenty targets. Most of the targets are relevant to marine planning. The targets provided greater emphasis on the need to engage society in policy and decision making. The key targets under each goal relevant to marine planning are:

- A. Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
 - *By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.*
 - *By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.*
- B. Reduce the direct pressures on biodiversity and promote sustainable use
 - *By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.*
- C. To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
 - *By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other*



effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

D. Enhance the benefits to all from biodiversity and ecosystem services

- *By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.*
- *By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.*

E. Enhance implementation through participatory planning, knowledge management and capacity building.

The United Nations Conference on Sustainable Development (or Rio+20). Rio: 2012

The conference resulted in the development of a document that contained clear and practical measures for implementing sustainable development. Parties to the convention decided to launch a process to develop a set of [Sustainable Development Goals \(SDGs\)](#), which will build upon the [Millennium Development Goals](#).

United Nations Sustainable Development Goals: 2015

On the 25th of September 2015, the United Nations General Assembly passed a resolution to adopt the outcome document of the United Nations summit for the adoption of the post-2015 development agenda: [Transforming our world: the 2030 Agenda for Sustainable Development](#). Within that document were two pertinent Sustainable development goals: [13](#) and [14](#). Targets for each of the goals were established.

Sustainable Development Goal 13:

Take urgent action to combat climate change and its impacts

Sustainable Development Goal 13 – Targets:

- *Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries*
- *Integrate climate change measures into national policies, strategies and planning*
- *Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning*
- *Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible*



- *Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities*



Sustainable Development Goal 14:

Conserve and sustainably use the oceans, seas and marine resources for sustainable development. The increasingly adverse impacts of climate change (including ocean acidification), overfishing and marine pollution are jeopardizing recent gains in protecting portions of the world's oceans.

Sustainable Development Goal 14 – Targets:

- *By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution*
- *By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans*
- *Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels*
- *By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics*
- *By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information*
- *By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation*
- *By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism*
- *Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries*
- *Provide access for small-scale artisanal fishers to marine resources and markets*
- *Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want.*



II. An overview of marine planning in Europe and its future direction

The [Maritime Spatial Planning Directive](#) (MSPD) was adopted by the European Parliament and the Council of the EU in 2014. Member States (MS) were required to transpose the legislation into their national legal framework by 18th September 2016. The Directive and transposed legislation requires that MS have in plan marine plans by 31st March 2021. The Directive imposes an obligation on MS to report to the Commission within three months of the publication of a plan. Copies of the plan are also to be sent to any other Member States concerned within the same timeframe. The Commission is also obligated to submit to the European Parliament and to the Council (at the latest one year after the deadline for establishment of the maritime spatial plans, and every four years thereafter), a report outlining the progress made in implementing the Directive. The MSP Directive was developed following the production of a set of common principles ([Roadmap for Maritime Spatial Planning: Achieving Common Principles in the EU](#)) of relevance to MSP in the EU developed in 2008.

The MSPD is seen as the key element that will enable the delivery of the EUs Blue Growth Agenda (Pers. Comm. Felix Leinemann 15/02/18). The marine plans developed by each of the 23 MS are also recognised as being key to the delivery of the [Marine Strategy Framework Directive](#) (MSFD). The MSFD was introduced on 17th June 2008 and it requires that the all the marine space in MS waters be in Good Environmental Status (GES) by 2020. The MSFD was intended to balance the requirements and impacts from fishing, development and the environment. The MSFD sets out:

- 1) eleven Descriptors (elements that of the marine ecosystems),
- 2) the targets that should be set for MS to strive to meet,
- 3) the indicators that MS will use to know when they have achieved GES and also the type of management measures that MS can introduce to effect change.

Marine planning is recognised as one of these measures. Similarly, the EU [Habitats](#) and [Birds Directives](#) that set out the obligations of MS in relation to the protection species and habitats of conservation importance are considered measures. MS must consider their obligations under the various EU Directives when developing their marine plans.

Following the introduction of the MSPD, there are two areas that the Commission has focusing on to help Member States in relation to marine plan developments. The first is the establishment of an expert group that can provide direction and support to MS, and the second is the financing of projects in different sea basins to further marine plan development and integration between MS. It is anticipated that in ten years' time that there will be marine plans in place across MS and there the plans will be aligned in language within sea basins. It is anticipated that there will be increased cross border collaboration and the development of shared management measures particularly in MPAs that straddle the borders of multiple MS.



European marine spatial planning: insights gained through discussions with policy leaders.

If marine space is allocated to those sectors of blue growth a country wishes to develop, then this can provide economic certainty and enable the easier resolution of conflicts for that marine space in the future.

Stakeholder engagement is key in marine plan development but there is a tension between improving or securing data layers on where activities occur and then either the allocation of marine space to sectors in line with overarching strategic and economic goals for an area. This can lead to stakeholder disengagement and conflict.

There is an expectation that Art. 11 of the CFP will be used more extensively to achieve environmental objectives than is currently the case.

It is not anticipated within the EU that fisheries resources will be directly allocated to deliver environmental outcomes.

The Spanish Administration has developed a GIS tool to aid the allocation of marine space for aquaculture (one of the key objectives for blue growth). The characteristics of their waters are being identified (salinity, water depth, light penetration etc.) and this information is processed and displayed. This information is being used to promote aquaculture development and ease its way through the licencing process.



III. A description of marine planning in England

Following the development of the [Marine and Coastal Access Act 2009](#), the [UK Marine Policy Statement](#) (MPS) 2011 was jointly prepared by the UK, Scottish, Welsh and Northern Ireland governments. The MPS provides the policy framework for the preparation of all UK marine plans and for all decisions capable of affecting the marine area. It reiterates the UK vision for the marine environment which is for ‘clean, healthy, safe, productive and biologically diverse oceans and seas’, and the [UK’s High Level Marine Objectives](#). Marine plans put into practice the objectives for the marine environment that are identified in the MPS alongside the [National Planning Policy Framework](#) (NPPF) and the [Localism Act 2011](#).

Where there is no marine plan in place, the MPS sets the direction for decisions that affect the marine areas, such as the granting of licenses for all public bodies. A public body must explain any decision made that is not in line with an adopted plan or the MPS. The document ‘Marine planning: A guide for local authority planners’ provides more detail on the obligations of Local Authorities. Exceptions do exist that enable decisions to be made contrary to both the MPS and adopted marine plans, for example, a relevant national policy statement carries greater weight so any decision must be in line with that rather than a marine plan or MPS.

In England, the Secretary of State at the Department for Environment, Food & Rural Affairs (Defra) is the statutory body for marine planning for the English inshore and offshore regions, while the body responsible for preparing marine plans is the Marine Management Organisation (MMO). Statutory Nature Conservation Advisors provide advice on the plans through consultation responses and regular liaison with MMO counterparts.

The first plans, the East Marine Plans, were adopted in April 2014. The second set to be adopted will be the South Marine Plans with those being followed by plans for the North West, North East, South East and South West. All plans are due to be in place by 2021. There are two requirements within MCCA 2009 relating to reporting with the responsibility upon Defra to present the reports to Parliament. In the case where a plan has been adopted there is a three-yearly requirement to prepare a report on:

- 1) the effects of the policies in the marine plan;
- 2) the effectiveness of those policies in securing that the objectives for which the marine plan was prepared and adopted are met;
- 3) the progress being made towards securing those objectives;
- 4) if an MPS governs marine planning for the marine plan authority’s region, the progress being made towards securing that the objectives for which the MPS was prepared and adopted are met in that region.

In the second instance there is a six-yearly requirement to prepare a report on:

- 1) any marine plans the planning authority has prepared and adopted,
- 2) its intentions for their amendment, and
- 3) its intentions for the preparation and adoption of any further marine plans

<https://www.gov.uk/government/collections/marine-planning-in-england>



IV. Case study: set aside proportions of fishable stock to achieve cod stock recovery

Following the collapse of cod stocks in their waters, Norway and Russia agreed to protect capelin to aid the recovery of cod. Capelin is a key prey resource for cod. To achieve this, harvest control rules were established bilaterally thus promoting an element of an ecosystem-based approach to the exploitation of cod.

By establishing a Maximum Sustainable Yield (MSY) for capelin and incorporating a proportion of the stock for cod prey, there has been a recovery of cod stocks. This approach to reducing the MSY was accepted by the fishing industry as they understood the basis for this approach. This approach was not challenged (partially because the capelin is only exploited by Norway and Russia). A challenge could have been made by a third country arguing that the available resources of capelin were not being fished at MSY and that they should have access to this fishery resource. This did not occur. The unilateral or bilateral adoption of this approach is not currently possible under the current CFP.

The recovery of the cod stocks was so successful that the stock assessment models needed to be revised to account for older larger cod. These cod had outgrown their role as a prey species (other than for large sharks) and therefore this cohort had very low natural mortality levels. The implication is thus: as stocks recover then:

- 1) understanding of the ecosystem response improves and;
- 2) fisheries models need to adapt to reflect that understanding.



V. Itinerary

Date	Location	Discussions
6/09/17	Washington. D.C.	William Crosse. Senior Manager. Global Monitoring and Evaluation. Rainforest Alliance.
7/09/17	Washington. D.C.	Deerin Babb-Brott. Director. National Ocean Council. Executive Office of the President
8/09/17	Washington. D.C.	Ted Morton. Director US Oceans at The Pew Charitable Trusts.
8/09/17	Washington. D.C.	Amy Trice. Associate Director, Ocean Planning
11/09/17	Boston. MA	Jack Clarke. Mass. Audubon. Director of Public Policy and Government Relations.
12/09/17	New Bedford. MA	Kathryn Ford. Massachusetts Division of Marine Fisheries.
12/09/17	Sicuate. MA	Beth Casoni. CEO. Massachusetts Lobstermen's Association
13/09/17	Sandwich. MA	Fishing with Dave Casoni
13/09/17	New Bedford. MA	Edward Anthes-Washburn. Executive Director. Port of New Bedford.
13/09/17	Boston. MA	Les Kauffman. Boston University.
14/09/17	Boston. MA	Tundi Argady.
14/09/17	Boston. MA	Todd Callaghan. Massachusetts Office of Coastal Zone Management.
15/09/17	East Providence. Rhode Island	Edward LeBlanc Chief, Waterways Management Division. Coast Guard Sector Southeastern New England. US Coast Guard.
15/09/17	Barnstable. MA	Heather McElroy. Natural Resources Specialist. Cape Cod Commission
20/09/17	Portland. ME	Phil Collaruso. Marine Biologist. United States Environmental Protection Agency (via telcon).
21/09/17	Augusta. ME	Meredith Mendelson. Deputy Commissioner. Maine Department of Marine Resources. Kathleen Leyden Director Maine Coastal Program.
22/09/17	Portland. ME	John Weber.
13/02/18	Paris	Charles (Bud) Ehler. Marine planning consultant.



14/02/18	Brussels	Felix Leinemann. Head of Unit. Blue Economy Sectors, Aquaculture and Marine Spatial Planning. DG Marine Affairs and Fishing. European Commission. Juan Ronco Zapatero. Policy Officer. DG Marine Affairs and Fishing. European Commission.
16/02/18	Oslo	Geir Klaveness. Specialist Director. Ministry of Climate and the Environment, Kristin Nordli. Ministry of Local Government and Modernisation. Anne Langaas Gosse. Norwegian Environment Agency.
18/02/18	Bergen	Erik Olsen. Institute of Marine Research. Thorbjørn Thorvik. Senior Advisor. Directorate of Fisheries.
22/02/18	Tromso	Maaike Knol. Norwegian College of Fisheries Science. The Artic University.
22/02/18	Tromso	Gunnar Sander. The Artic University
23/02/18	Tromso	Cecile von Quillfeldt. The Polar Institute.
23/02/18	Tromso	Seminar on the WCTF research to The Artic University – Centre for the Law of the Sea.
26/02/18	The Hague	Bas Weenink. Senior Advisor. Implementation Maritime Strategy Framework Convention. Ministry of Infrastructure and Water Management. Anne Reijbroek. Policy Advisor EU-Fisheries.
27/02/18	The Hague	Leo de Vrees. Senior Advisor MSP and North Sea. Ministry of Infrastructure and Water Management. Caroline van Heurn. Ministry of Infrastructure and Water Management.
28/02/18	The Hague	Bram du Saar. Senior Policy Advisor Offshore Wind. Ministry of the Interior and Kingdom Relations. Bert Wilbrink. Senior Policy Advisor Offshore Wind. Ministry of Economic Affairs and Climate Policy.
01/03/18	The Hague	Pim Visser. Vised. Fishermen’s Association.
07/02/18	Telephone conference	Onni Irish. US Fulbright Grantee. US/Norway Fulbright Foundation.

VI. Marine planning attributes for England, Norway, The Netherlands and the United States of America

Planning attribute	Country			
	England	Norway	The Netherlands	United States of America
Legal basis for planning	Legislation	Policy position/documents	Primary legislation (Water Act) however principally policy documents	National: Executive Order State: Legislation Local: Legislation
No. levels of planning	National: 11 plans	National: 3 plans Regional Authority: unknown Local Authority: circa 280	National: 1 plan Local Authority: unknown	Regional: North East Regional Plan State: Massachusetts Local: Cape Cod Commission
Spatial extent	Total planning area: 253,000km ² Eastern inshore plan: 10,200km ² Eastern offshore plan: 48,500km ²	Barents Sea – Lofoten: 961,000km ² Norwegian Sea: 1,170,000km ² North Sea and Skagerrak: 42,100km ²	Circa 50,000km ²	State (Massachusetts): 5,549km ²
Marine plan boundaries	0-200nm	National: 1-200nm There is no sharp division in practice. Pragmatically, the management plans go to the shore when needed in assessments. However, they contain no spatial planning initiatives which would have fallen under the authority of the local levels of administration according to the Planning and Building Act Regional and local: 0-1nm. However, many of the plans do not extend out to the limit of the Planning and Building Act	National: 0-200nm Local Authorities: 0-1nm apply terrestrial planning law	North East Regional Plan: 0-200nm State plan: 1/3nm from HWM-3nm Local plan: 1/3nm from HWM-3nm or State boundary
Sectoral exclusions	None	National: none (although aquaculture is not covered as this activity is not yet occurring in this area). Regional and local plan: none.	None	North East Regional Plan: none State plan: commercial and recreational fishing Local plan: none

Planning attribute	Country			
	England	Norway	The Netherlands	United States of America
Stage of implementation	Two plans adopted Two awaiting adoption Seven in development	National: plans developed for each sea area. All plans updated Regional/local - unknown	3 rd iteration	North East Regional Plan: implemented State plan: implemented Local plan: implemented
Data portal	Yes	Yes	Yes	Yes
Top down/bottom up process	Top down process with significant stakeholder engagement	National: top-down Coastal: Bottom-up within limitations given by state, which may intervene	Top down	Top down
Degree of stakeholder engagement	Throughout process	Throughout process	Throughout process	Throughout process
Extent of MPA network development	Extensive	Significant	Extensive	Limited. NB SSU significant.
Key elements plan is intended to address	All sectors	National: oil and gas production, fisheries, shipping, external influences RA/LA: use of terrestrial planning law	All sectors	Regional: all sectors State: offshore wind farms, cables, pipelines, sand mining Local plan: As state plan but additional restrictions.
Implementation of plan objectives	By relevant sectoral management bodies	National: by relevant sectoral management bodies	By relevant sectoral management bodies	By relevant sectoral management bodies
Plan review period	Three years – plan Six years – planning progress	National: Update at least every fourth year, revision every 12th	Six years (NB next iteration is being brought forward)	National: five-year review State: five-year review Local undetermined.
Wider seas environmental measures	Yes: MSFD/UK Marine Strategy	Yes: OSPAR indicators/targets	Yes: MSFD	Yes: identification of Important Ecologically Rich Areas
Extent of spatial direction in plans	Varies between sectors	Limited – most prominently for oil/gas developments	Significant	Yes: for offshore windfarms, cables, pipelines, sand mining
Extent of socio-economics sustainable development pillars throughout the plan	Developing	National: Covered in status reports, limited in plan. (Likely to be expanded in 2020 revision of BSMP)	Significant	Regional: Limited. State: Limited Local plan: significant