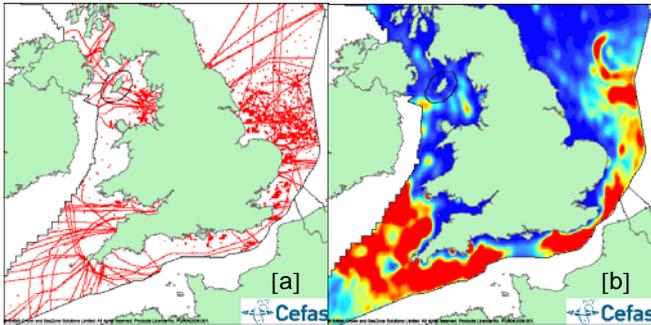


Marine Planning



The UK's marine resources have substantial economic, environmental and social value. However, increasing demand has led to concerns over their degradation. The Marine and Coastal Access Act (2009) set out the mechanism for marine planning in UK waters and aims to help tackle these concerns. It combines the management of activities and conservation of the marine environment. This POSTnote describes the marine planning process and considers the challenges it will face.

Background

The UK marine area extends over some 867,400 km², an area equivalent to some 3.5 times the UK terrestrial extent¹. It is rich in marine life and natural resources², which form the basis of human economic activities estimated to be worth £46 billion in 2005-06³ (Box 1). Some of these pose a risk to the integrity of marine ecosystems⁴, with impacts growing due to additional pressures such as large scale marine renewable energy developments. Current activities have resulted in a crowded marine area, including licensed developments (map [a]) and areas of high fishing effort (map [b])⁵ (Box 1). Concerns over the degradation of the marine environment have led to a range of policy tools being developed to address this. The UK government and devolved administrations have set out a joint "UK Marine Vision" to achieve "clean, healthy, safe, productive and biologically diverse seas" and to plan for marine activities⁶ as defined in EU legislation (Box 2).

Marine Planning

Marine planning aims to help to achieve the UK Marine Vision by providing a framework for decisions on marine activities, reducing user conflict and encouraging an "ecosystem-based approach" (POSTnote 377). This is defined as integrated management of human activities, based on best available scientific knowledge about the ecosystem, with the intention of identifying and taking action on factors which are affecting ecosystem health, thereby achieving the maintenance of

Overview

- Marine plans will contribute to more effective management of marine activities and reduce the degradation of marine habitats.
- However, the integration of social, economic and environmental considerations will be critical to helping to achieve desired outcomes.
- The limited evidence-base may impact on planning decisions, particularly over the next few years.
- Marine plans will undertake a risk-based approach to accommodate uncertainty.
- Revision of plans to achieve desired outcomes will be dependent on well funded monitoring programmes and mechanisms to respond to any adverse change.

ecosystem integrity⁷. Planning therefore aims to promote economic activity as well as to integrate environmental protection into decision making.

Box 1. Selected Marine Industries: Gross Value Added (GVA), Employment, Output and Environmental Pressure

Activity	GVA ⁸ £ b	Output ⁸	Employment ³	Pressure ⁸
Oil and gas	37.00	↓	290,000	↔
Ports	5.05	No data	54,000	No data
Telecom & Power Cables	2.70	↑	26,750	↑
Leisure & Recreation	1.29	↑	114,670	↑
Aggregate Extraction	0.54	↔	1,670	↔
Fisheries	0.20	↔	31,633	↔
Aquaculture	0.19	↑		
Renewable Energy	0.05	↑	4,000 ⁹	↑

The Marine and Coastal Access Act (MCAA) 2009 established a framework for marine planning in UK waters, which enabled the creation of marine plans and outlined the direction for marine licensing. The MCAA also created a new type of Marine Protected Area (MPA), known as Marine Conservation

Zones (in English waters) which will be integrated into marine planning and contribute to an “ecologically coherent network” of MPAs in the UK by 2012 (Box 2) (POSTnote 310).

The MCAA applies to UK waters and establishes devolved administrations as the responsible marine planning authorities for their seas. This excludes the Scottish and Northern Ireland inshore regions, which are covered by other or proposed legislation (Box 3), but applies to the offshore waters of these regions. While the MCAA devolves planning responsibility, the UK-wide Marine Policy Statement of March 2011 aims to keep policies consistent at a UK level. It sets the framework for preparing marine plans, which will be prepared from 2011 (Box 3) and will have to contribute to the delivery of UK and national policy objectives. They will provide “detailed policy and spatial guidance” encompassing all current and future marine activities and taking account of marine protected areas¹⁰. They will obtain government clearance before adoption. However, the content, detail and structure of plans will not be prescribed by government prior to this¹¹.

Box 2. International Commitments to Marine Management

- The Convention on the Protection of the Marine Environment of the North-East Atlantic (OSPAR) committed the UK to implementing “an ecologically coherent network of... marine protected areas” by 2012. These are to be “well-managed” by 2016.
- The EU Habitats Directive (92/43/EEC) requires the creation of a network of protected areas, as well as the protection of listed species and the adaptation of planning controls to this end.
- The EU Integrated European Maritime Policy and the Marine Strategy Framework Directive (MSFD) together aim to deliver “sustainable development” to Europe’s seas and implement an ecosystem approach to marine environmental management. The MSFD sets targets for “good environmental status” (GES) to be achieved in EU waters by 2020 to protect ecosystem functioning and provision of resources. By 2012, the UK must establish what GES means, setting specific targets and indicators to ensure its achievement. A programme of measures to achieve the targets has to be in place by 2016.

Licensing

Established by the MCAA and the Marine (Scotland) Act, new marine licensing regimes were introduced by devolved administrations in April 2011, aiming to streamline licensing. However, in the UK, not all licensing is brought under the umbrella of the marine planning authorities and internal organisational connection between planning and licensing may be lost. Oil and gas extraction or fishing (from 12-200 nautical miles, or 22-370 km, from the shore) for example, are covered by the Department for Energy and Climate Change or the Common Fisheries Policy (POSTnote 357) respectively. In an already busy marine environment, issues associated with cumulative impacts of activities could be exacerbated by separate licensing regimes. Assessing cumulative risk is currently carried out by a combination of regulators and developers but will have to be addressed as part of the development of indicators for the MSFD (Box 2). Licensing and development is continuing prior to the production of marine plans, including large renewable energy developments on scales never witnessed before. The Scottish Association of Marine Science has expressed concerns that marine planning will have to “pick up the pieces”¹², especially since English

plans may not be complete until 2021 (Box 3). However, licensing authorities do need to ensure that licence applications are in accordance with the MPS.

Box 3. Devolved Marine Planning

England

The Marine Management Organisation (MMO) brings together planning, licensing and enforcement in England. English seas are split into 10 plan areas. Planning for the first two of these – the East inshore (0-12 nautical miles; nm) and offshore (12-200 nm) areas - was launched in April 2011 and will take two years to complete. A further two regions will be planned every two years. “A Description of the Marine Planning System for England” and Impact Assessment of the Marine Planning System were published in March 2011 by Defra.

Scotland

The Marine (Scotland) Act 2010 provides the framework for marine planning in Scotland. A National Marine Plan is expected in spring 2012, which will set out social, economic and ecosystem objectives. Regional planning will be implemented within Scottish marine regions by Marine Planning Partnerships (MPPs), composed of marine users with delegated planning powers. Work is under way to establish the boundaries of these regions and the structure of MPPs.

Wales

The Department of the Environment and Sustainability will lead on the preparation of an offshore and an inshore plan, covering all Welsh waters. A consultation on the approach of marine planning in Wales closed in May 2011 and plans are to be adopted in 2012/13.

Northern Ireland

The Northern Ireland Department of the Environment is preparing the Northern Ireland Marine Bill. This will contain provisions for marine planning and nature conservation within the inshore region and is anticipated to be introduced by 2012. The department is already designated as the marine plan authority for the offshore region under the MCAA. Once the Bill is enacted, a single marine plan covering both regions will be prepared within the same timeframe as other UK administrations.

Challenges

While the marine planning system is intended to achieve UK marine objectives, there are significant long term challenges to be addressed, including:

- the integration of planning across management areas, including across UK borders
- the uncertainties in planning decisions as a result of knowledge gaps, as well as continuing to build an evidence-base
- resolving the conflicts between policy objectives to ensure the integration of social, economic and environmental needs.

Integration of Planning Across Management Sectors

Ecosystems cut across traditional management sectors¹³, including marine and terrestrial boundaries, administrative borders and territorial waters (Box 4). The MCAA and MPS make clear the commitment from each administration to work together to ensure compatibility between plans. However, differences between planning systems could bring confusion to marine planning.

Uncertainties from an Incomplete Evidence-base

Effective marine management requires sound evidence and monitoring¹⁴. The Marine Management Organisation (MMO) has launched a web portal to collect data relevant to planning in the East of England. A 2010 report for Defra identifies a shortage of data necessary for marine planning¹⁵. These

include habitat distribution (Box 5), species distribution and the quality and resolution of maps that predict habitat based on modelled data, which are often inadequate for effective management and planning¹⁵. In addition, while there is some information about direct environmental impacts of individual human activities, there is uncertainty about combined impacts. For example, approximately 90% of the evidence underpinning decisions about whether or not a habitat is sensitive (to a wide range of pressures or impacts) for the MCZ process has either low or medium/low level of confidence¹⁶.

Box 4. Integration of Planning Across Management Sectors Marine and Terrestrial Planning

Activities on land can have direct impact on the sea and *vice versa*, emphasising the importance of links between marine and terrestrial planners. Marine plan boundaries extend to mean high water spring tides while terrestrial plan boundaries generally extend to mean low water. This overlap, 22,000 ha¹⁷ in the case of the Severn Estuary, is intended to ensure compatibility between plans. The MMO is working with local authorities (LAs) in the East marine planning areas of England to identify local policies of relevance to the marine area in local development frameworks and to ensure compatibility between plans. The latter will become more difficult because the Localism Bill will give plan-making powers to neighbourhoods/ parishes. The Royal Town Planning Institute is concerned at the lack of guidance on integrating planning regimes and that producing more plans could lead to inconsistencies across coastal boundaries. The Department of Communities and Local Government (CLG) states that, in line with decentralisation, CLG is moving away from providing policy and guidance to local planning authorities and that the interface between terrestrial and marine will be addressed through a "duty to cooperate" given to LA's in the Localism Bill. The 2008 Planning Act sets out a separate system for applications to build nationally significant infrastructure projects, including energy production and ports, with the need for such facilities set out in National Planning Statements.

Devolved Administrations

Legislation requires these to co-ordinate plans across administrative boundaries. Marine plans are at different stages throughout the UK (Box 3), and timing differences, different evidence-bases and individual plans could cause inconsistencies, especially if multiple approaches to aspects of the marine environment arise, e.g. seascapes and wind-farms. In some cases, such as the Solway Firth, non-statutory cross-boundary partnerships will input to discussions on intentions for planning and share evidence, which could potentially provide a useful mechanism to facilitate integrated planning. However, close collaboration between the MMO and devolved administrations will also be required.

Europe

Planning needs to ensure there is co-ordination between European states to ensure that the cumulative effects of activities and plan areas do not jeopardise GES. The Dutch-led "Fisheries Management in MPAs" and the French-led "Channel Arc Manche Integrated Strategy" projects are creating management plans to deal with trans-boundary industries on the Dogger Bank and in the English Channel respectively. These aim to inform planning decisions in individual states. Member states need awareness that with language such as "good environmental status", "risk-based approach" and "evidence-based action", there is room for interpretative differences that relate to human values, public understanding and involvement in planning that may cause inconsistency between plan outcomes.

The UK has a wealth of marine data compared with many other countries. Current limitations may not impede planning, although the MMO states that there is a need to strengthen the evidence underpinning its decision making and to collect further high quality empirical evidence to steer policy and to ensure quality decision making. The importance of coordinating the monitoring effort and of focusing funding to fill

gaps is highlighted by a report by the UK Marine Monitoring Assessment Strategy (UKMMAS) Evidence Groups¹⁸. This provides a baseline for the MSFD (Box 2), and highlighted gaps in data, the need for better assessment tools, better use of existing data and better accessibility to information. The Marine Science Coordination Committee (MSCC) is working with UKMMAS to address some of these issues, such as ensuring key long-term monitoring programmes are maintained and determining indicators and targets needed for "good environmental status" (Box 2). However, addressing gaps in knowledge is slow due to funding constraints.

Better Use of Existing Data

The Marine Environmental Data and Information Network (MEDIN) aims to provide a "single point of access for UK marine data and information" and "priority datasets to underpin UK and EU legislative and policy requirements". MEDIN has established a network of linked accredited Marine Data Archive Centres and a library of standards and guidelines for the storage and exchange of data. They have also commissioned research into the approaches to data policy in the marine sector, although focused primarily on public sector data¹⁹.

However, not all data are accessible, it is often too expensive for organisations to archive and data needs interpretation (Box 6). When data are available they are often under commercial licence conditions. The MMO confirms that this restricts its ability to share them with marine users, other government departments and devolved administrations. It suggests that coordinated inter-government "group-buys" of key UK marine data products with more permissive licence conditions for use would improve this situation. MEDIN is currently encouraging accessibility, standardisation, open availability and archiving of data, but clearer licensing and guidance, co-ordinated data activities and increased funding are all required¹⁹.

Box 5. Availability of Habitat Data

There is a shortage of reliable habitat data for marine planning. Currently, about 10% of the UK continental shelf is mapped in detail by survey and observation¹⁵. To fill gaps, projects such as UK SeaMap (2010) produce broad scale predictive habitat maps based on "best available data", but the confidence in some of the designations is as low as 20%. The MMO states it is reliant on this tool as "best available evidence", however the low confidence levels associated with some of these modelled data will limit the effectiveness of early marine plans. Incorrect habitat designations using modelled data have already caused problems in allocating sites for Marine Conservation Zones, resulting in the general approach of favouring more detailed local information where possible.

Direct mapping is expensive, estimated at £210 million over 7 years to map the rest of the UK's regional seas at scales relevant to marine habitats¹⁵ and there are limited funds available to undertake such surveys. However, modelled data are less reliable due to their uncertainty and the loss of detail at habitat boundaries. One example where modelled data suffer is in identifying transitional habitats, which are likely to be biologically diverse and could be functionally important.

Marine Users Evidence and Understanding

While evidence-based policy must be based on the best science, it is important to take into account other types of social and economic knowledge and views²⁰. The MMO has commissioned research into the social impacts of marine planning to help to understand the benefits that planning could have on coastal communities. It has also published a

“Statement of Public Participation” for the East area to determine engagement throughout planning.

The MMO recommends that it is essential that the marine planning system includes user involvement from the start. The ecosystem-approach (POSTnote 377) is also inherently participatory. Limited resources for enforcement of marine planning suggests that achieving marine user understanding of planning decisions, with consistent engagement, would be the most effective way to gain compliance in decisions made²¹. They are sometimes involved only after initial models for planning are developed and it is often unclear how their input and information will be used. Without transparency and provision of information at the outset trust can be lost. Lessons can be learnt from the MCZ process in England where this has been a real issue²². The Statement of Public Participation aims to address the involvement of marine users from the outset in England.

Box 6. Data Issues

Public Data

The EU INSPIRE Directive and the UK Location Programme made it necessary for all publicly-funded data to be made accessible, although practical issues cause delay. The interpretation and delivery of advice means that maintenance of data is not always given priority in some institutions and it is often difficult to find funding for data management. In addition, researchers need time to work on and publish data, and specific timelines are not being allocated in policy or legislation.

Industrial Data

Industry drives the collection of marine data through Environmental Impact Assessments, except for fishing, which is exempt from such assessment. Industry has increasingly been involved in the provision of evidence to identify potential MCZs as well. However, there is currently no commitment to share data, and confidentiality agreements mean that data can be of limited use to end users. MEDIN would like to see this commitment as part of new marine licences and others would like to see fishermen provide the same sort of data. The Crown Estate (who lease the seabed to commercial interests) has included a data clause in leasing agreements to make some data available. Examples of industrial data do exist, e.g. the COWRIE database (The Crown Estate) which provides data from wind-farm developments, However only 50% (from Round2) is currently available. For industry to volunteer data it needs more assurances that extra survey effort or exclusion from sites would not occur.

Transfer of Data to Information for Management

While raw data may be made available, they are often derived or interpreted data (such as a map or chart) that are most valuable to researchers, policy makers and stakeholders, but these are ‘derived’ products that still need to be purchased or licensed giving rise to unavoidable costs of using and capturing this data. Caution must also be taken in the use of interpreted spatial data; a knowledge of analysis and confidence in data layers being essential.

Social, Economic and Environmental Needs

Near-term social and economic considerations need to be integrated with long-term environmental targets in marine planning, to help to achieve sustainable use of marine resources. Where environmental protection is prioritised, users may not comply with regulations and management success may be compromised²³. Marine Protected Areas are a key conservation tool, but marine planning can also play an important role in steering development away from the most sensitive and valuable areas of marine habitats. The recent National Ecosystem Assessment provides information on the value of the marine environment. However, it will be important

to understand further the links between social, economic and environmental factors and how they can be integrated to improve the outcomes of marine management approaches.

Adaptive Management

The Marine Policy Statement calls for marine plans to be developed using a risk-based approach when evidence is limited. This means planners should consider the risk of adverse effects on environmental, social and economic factors when designating activities. However, to achieve the UK Marine Vision, government policy acknowledges that marine planning will also need to ensure flexibility, through monitoring and review. This requirement is emphasised by several factors that increase uncertainty about the outcome of planning decisions. Examples include:

- the current lack of data for planning
- difficulties in ensuring and measuring how equitable and integrated plans are
- the Common Fisheries Policy (POSTnote 357)
- the impacts of climate change.

An adaptive management approach accepts that, although knowledge of complex systems is always likely to be incomplete, as knowledge of the managed system accumulates uncertainty can be reduced and targets can be refined. However, this is dependent on well-funded and consistent monitoring programmes. These will need to provide information about the outcomes of decisions and potential new risks involved in the interaction of changing social, economic and ecological conditions²⁴. It is also dependent on consistency in political will and momentum, the change of which has resulted in stalled delivery and setbacks in achieving effective implementation in some countries, such as Australia and Belgium²⁵. Adaptive management also requires a mechanism to respond to any detected changes or new evidence. Marine plan authorities have a duty to look at plans after 3 years and a statutory commitment to review them after six years. However, it is not clear if this is sufficient to deliver the flexibility required to implement adaptive management approaches.

Endnotes

- 1 Russell, M, 2010, *A Sea of Change for the Marine Aggregate Sector*.
- 2 Austin *et al*, 2011, *National Ecosystem Assessment Technical Report*, Ch12.
- 3 Pugh, D, 2008, *Socio-economic Indicators of Marine Related Activities in the UK*, Final Report, Crown Estate Project OSR 07-04
- 4 Defra, 2005, *Charting Progress Executive Summary*
- 5 Coggan, R & Vanstaen, K, 2011, *Cefas Illustration*
- 6 Defra, 2002, *Safeguarding Our Seas*,
- 7 OSPAR Commission;
http://www.ospar.org/content/content.asp?menu=00430109150000_000000_0000
- 8 Defra, 2010, *Charting Progress 2 Feeder Report: Productive Seas*
- 9 Barham, P, Seabed Users Development Group, personal communication
- 10 HM Government, 2011, *UK Marine Policy Statement*
- 11 Defra, 2011, *Description of the Marine Planning Area in England*
- 12 Laurence Mee, personal communication.
- 13 Frid, C *et al* 2006, *ICES Journal of Marine Science*, Vol. 63, 9, p1567-1572
- 14 HM Government, 2002, *Our Seas - a shared resource*
- 15 Cefas, 2010, ME5408: *Marine Survey Needs to Underpin Defra Policy*
- 16 The Marine Management Organisation, personal communication.
- 17 English Nature, 1997, NA116 - *Severn Estuary Natural Area Profile*
- 18 Defra, 2010, *Charting Progress 2*
- 19 The Crown Estate, 2010, *Approaches to data policy in the marine sector*
- 20 MacLeod *et al.*, 2010, *Food Security*, Vol. 2, p 49-70.
- 21 Walmisley & White, 2003, *Environmental Conservation*, Vol 30, p388-407
- 22 Robin Henry, July 17th, 2011, *The Sunday Times*, p17
- 23 Teh, L & Teh L, 2011, *Environmental Management*, Vol. 47, p536-545
- 24 POST Report 370, 2011, *Living with Environmental Limits*
- 25 RSPB, 2010, *Mobilising the Marine Act Report*