

Pathways for effective governance of the English Channel

PEGASEAS

ENGLISH



Acknowledgements

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Citation

J. Skinner, D. Bailly, M. Le Coz, W. Dodds, S. Fletcher, G. Glegg, H. Glenn, L. Herry, C. Molfese, J. Sewell, and A. McQuatters-Gollop. 2014. Pathways for effective governance of the English Channel. Sir Alister Hardy Foundation for Ocean Science, Plymouth, UK, 50pp.

The PEGASEAS project

Promoting Effective Governance of the Channel Ecosystem.

The PEGASEAS project is funded through the INTERREG IVa programme France (Manche) – England and aims to promote the effective governance of the Channel marine ecosystem through the identification and capitalisation of key lessons drawn from the programme.

www.pegaseas.eu

ISBN 978-0-9566301-2-4

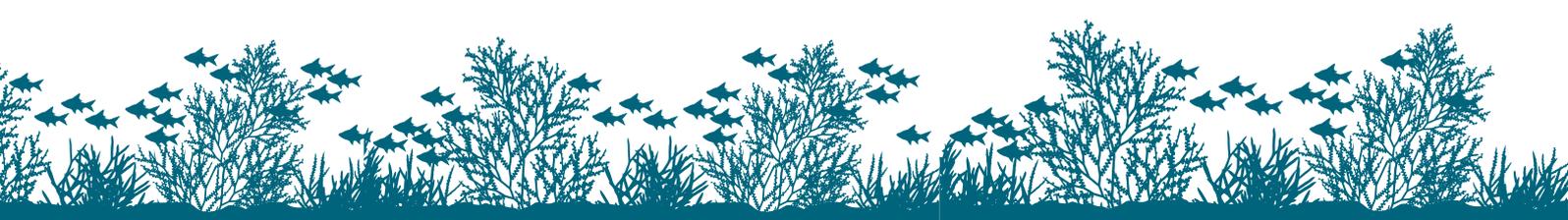


ChannelIS



Promoting Effective Governance
of the Channel Ecosystem

Promouvoir une gouvernance efficace
de l'écosystème de la Manche





Pathways for effective governance of the English Channel

Introduction

1

Marine Strategy Framework Directive

2

Maritime Spatial Planning Directive

11

Common Fisheries Policy

17

Next steps for effective Channel governance

23

References

25





Introduction

The English Channel (*la Manche* in French) is used intensively for a diverse range of activities, including energy production, aggregate extraction, commercial fishing, tourism and recreational pursuits, all of which compete for limited marine space. It is a vital shipping and transport route and Channel activities are significant contributors to Europe's blue economy. However, the Channel's marine ecosystem, upon which much of the economy relies, is threatened by a combination of cumulative pressures of use and inadequate governance. Despite the Channel forming a single marine ecosystem, it is not managed as such. Instead, due to its role as an international boundary, the Channel is governed as two distinct systems, each of which has, inter alia, different resource use regulations, planning priorities, and conservation arrangements. The uncoordinated approach to the governance of this shared space presents a risk to the long-term viability of the ecosystem and threatens social and economic blue growth opportunities.

Over the period 2008-2015 the INTERREG IVA France (Channel) England Programme has supported projects that sought to generate a better understanding of how to govern the Channel in a manner that safeguards our collective environmental, economic and social interests in the long-term. This guide, prepared as part of the INTERREG IVA project 'Promoting Effective Governance of the Channel Ecosystem', presents a distillation of the key findings from these projects. In order to ensure the guide is relevant to contemporary policy challenges, it has been structured around three of the most significant legal and policy instruments relevant to the Channel: the Marine Strategy Framework Directive, the Maritime Spatial Planning Directive and the Common Fisheries Policy. These are part of EU Integrated Maritime Policy, which aims to increase coordination between different policy areas in order to develop a more coherent and integrated approach to addressing maritime issues.

The experiences and reflections contained within this guide are evidence-based, comprehensive, and measured. They seek to maximise the advantages of the cooperative governance of the Channel and minimise the problems caused by a lack of coordination. The key message throughout the guide is that in order to safeguard the long-term environmental, social and economic benefits provided by the Channel, it is necessary to govern this single marine system in a holistic and coordinated manner. This will require cooperative goals, effective communication, and most importantly, joined-up governance mechanisms. The guide is essential reading for those with an interest in the long-term sustainability of the Channel.





Biodiversity and the Marine Strategy Framework Directive

The European Union's Marine Strategy Framework Directive (MSFD) seeks to achieve Good Environmental Status (GES) of European seas by 2020 through application of an ecosystem approach to marine management. The Directive requires indicators to be developed and monitored towards environmental targets which represent GES. The aspects of the ecosystem required to meet GES are broadly described through eleven general Descriptors:

1. Biological diversity
2. Non-indigenous species
3. Commercial fish
4. Marine food webs
5. Anthropogenic eutrophication
6. Sea-floor integrity
7. Hydrographic alterations
8. Contaminant concentrations
9. Seafood contamination
10. Marine litter
11. Energy and noise

Descriptors 1, 2, 4, 5 and 6 represent aspects of marine ecosystem state. These are collectively referred to as the 'biodiversity descriptors' and are being implemented jointly. Implementation of the MSFD is taking place at both the Member State and the regional seas levels; in the Northeast Atlantic, the Oslo-Paris Convention (OSPAR) is responsible for regional coordination. Although the MSFD provides qualitative descriptors of GES, the Directive does not explicitly describe the vision of GES for these descriptors. Moreover, the Directive itself offers very little guidance on how to select indicators, set targets and articulate a vision for GES. The European Commission's 'Decision of 2010' ¹ and additional work by European Task Groups and OSPAR have provided some further criteria and direction, but, as with deciding what constitutes GES, the actual development of relevant indicators and the setting of targets has been left to the discretion of the Member States, and at the regional scale, the Regional Seas Commissions ². A significant challenge, therefore, is ensuring indicators and targets are regionally cohesive.

The MSFD focuses only on changes caused by manageable anthropogenic pressures – climate change is a long-term issue outside the scope of the Directive. This means that ecosystem responses to climate change must therefore be considered and accounted for when defining GES and setting targets for the MSFD. In other words, targets must be constructed to accommodate climate-driven changes but trigger management action when they fail because of anthropogenic activity. Separating ecosystems responses caused by anthropogenic pressures from those that are climate-driven is thus a key challenge for implementation of the MSFD ².

Ecosystem approach

The ecosystem approach is a management methodology which looks at a system holistically, considering both its ecological and biological components as well as its human constituents. Indeed, a key characteristic of the ecosystem approach is that humans are included as a part of the natural ecosystem, but the approach recognises that human activities must be managed in a way that promotes sustainability in the long-term, without compromising any ecosystem components that contribute to the overall ecosystem's structural and functional integrity³. An understanding of the relationship between human society and the ecosystems that support it is thus integral to the successful delivery of the ecosystem approach.

The EU's Marine Strategy Framework Directive requires an ecosystem approach to management to deliver Good Environmental Status (GES) of marine waters at a pan-European scale. The ecosystem approach is still a novel management methodology, particularly at such a large spatial scale; the MSFD's execution is therefore a learning process for scientists, practitioners and policy makers.

What are the governance needs in the Channel?

The ecosystem approach aids in the identification of sustainable uses of the marine environment, however, insight into regional socio-ecological systems is first needed. Application of the ecosystem approach in the Channel requires an understanding of both the marine ecosystem and the needs of its stakeholders. More specifically: i) how ecosystem services are generated and their sustainability; ii) the roles of policy actors (local, regional, national and international) who have jurisdiction over different areas or activities; and iii) the economic and social benefits and costs of the activities taking place in the region.

Significant scientific knowledge and data gaps exist. Time-series data are needed to assess the past and current states of species and habitats in the Channel to help inform a better understanding of how ecological processes underpin ecosystem services. Further research incorporating experiments, models and time-series data is necessary to separate ecological responses to climate change from those occurring due to short-term anthropogenic pressures. This data and knowledge are needed to support decision making and provide a baseline against which the effectiveness of future management decisions can be measured.

Any vision of Good Environmental Status for the Channel must also incorporate an element of societal choice – what are the priorities of Channel users and residents? An informed choice relies on an understanding of the benefits provided by sustainable management through the ecosystem approach⁴. This understanding must be transboundary and trans-sectoral in nature.

Recommendations

A thorough understanding of changes and trends in the marine environment is required. Time-series data, particularly datasets spanning the Channel (such as the Continuous Plankton Recorder survey and Brittany Ferries ferrybox) or created from methodologies applied consistently on both sides of the Channel (for example, intertidal assessment protocols developed through the Marine Biodiversity and Climate Change (MarClim) programme) are most urgently needed to determine long-term changes and provide an evidence base for decision making.

Links between marine and coastal processes and ecosystem services require better understanding and should be a key focus for future research. Such research endeavours should be long-term with a transboundary focus and should feature social-ecological tools such as ecosystem services assessments, cost-benefit analyses, multi-criteria analyses, and stakeholder-driven scenario building exercises.

Overcoming transboundary and multiple scale barriers through the implementation of an integrated cross-sectoral governance approach is key to delivering the ecosystem approach in the Channel. Mechanisms for cooperation and coordination between British and French authorities and stakeholders should be improved to enable consistent implementation of regulatory measures and ensure coherent cross-Channel governance.

Since the ecosystem approach considers humans as part of the ecosystem, a better understanding of public perceptions of Channel issues by scientists and policy makers, together with an increased awareness of benefits of sustainable use by the public, is necessary. This might be achieved by communicating to the public the costs and benefits of sustainable use, and fostering open dialogue between the public and scientists and policy makers (for instance through Cross Channel Forums). These steps will help articulate societal choice and garner support for management measures.

The value of long-term monitoring to marine management



Intertidal species, such as *Patella depressa*, have experienced significant changes in their geographical distribution. (Copyright N. Mieszkowska).

Monitoring plays a key role in advancing our understanding of the marine environment by providing important information on how ecosystem components interact and change over time. Multi-decadal observations are essential to separate long-term global climate change from the effects of natural variability in regional seas. Although uniquely valuable in the information they provide, long-term biological monitoring programmes are scarce, partly due to difficulties in securing funding. Many government-funded monitoring programmes are set up as part of short-term projects which are discontinued when the project ends. Government policy typically operates on short (3-6 year) time-scales and ecological changes may not be observed over just one political term, making it difficult to justify continued investment.

The MSFD relies on monitoring programmes to assess the current status of the marine environment and to monitor progress towards achieving GES. The MarClim project aims to better understand climatically driven changes in the intertidal marine environment. By using a > 60 year historical time series, a baseline can be created against which biodiversity response to rapid climate change can be measured. A key finding is that the biogeographic limits of some southern intertidal species have extended polewards to cooler waters at a rate of up to 50 km per decade, far exceeding the global average of 6.1 km per decade in terrestrial systems⁵. Only through sustained monitoring programmes can important changes such as these be recognised, contributing to the separation of the effects of global environmental change from natural variability in marine ecosystems.

Projects such as MarClim illustrate the significant value of maintaining long-term data sets, particularly during this period of unprecedented climate change. These changes can be identified and mapped using sensitive marine species, supporting cost effective and accurate indicators of environmental change that can directly help inform policy drivers, such as the MSFD, and consequently influence management decisions. Long-term monitoring programmes provide a vital component of an integrated approach to investigating and monitoring the impacts of climate change, however, without stable long-term funding, this contribution may be compromised. Correctly identifying ecosystem responses to anthropogenic or climatic drivers is essential if we are to select appropriate indicators, set attainable environmental targets and ultimately allocate management resources most effectively².



Conservation

The establishment of Marine Protected Areas (MPAs) is an important step towards achieving GES by 2020. With the inclusion of the Natura 2000 protected areas network, MPAs aim to protect the marine life and habitats within them by regulating their sustainable use, or in some cases, by banning human activities, such as fishing, entirely⁶. However, the designation, implementation and management of MPA networks is challenging, particularly in cross-border shared marine areas such as the Channel, where multiple authorities and management bodies are involved.

For protected areas to achieve their ecological and social goals, they must be designed, managed and enforced properly. This requires detailed scientific and socio-economic knowledge and understanding, which are often lacking⁷. In addition, the success of MPAs relies on the development of a coherent network of sites; yet of the 127 marine conservation zones proposed to the UK government only 27 were designated in 2013, resulting in a fragmented approach. In addition, none of the 65 reference areas that would have prohibited all human activity to provide useful benchmarking were approved⁸. Without adequate restrictions on human pressures, MPAs in their current format may not constitute an effective conservation measure⁹.

What are the governance needs in the Channel?

Under regional, national, and international agreements, MPAs must form an 'ecologically coherent' network; however, considerable uncertainty exists about what exactly constitutes 'coherence'. OSPAR has developed a series of principles in an effort to address this¹⁰ but there remains no single definition that is recognised by scientists and policy makers on both sides of the Channel.

When establishing individual marine and coastal protected areas, it should be recognised that boundaries are dynamic due to both natural variation of the environment and as a consequence of marine climate change impacts¹¹. Greater scientific and socio-economic understanding of the marine environment is essential in designating protected areas that will promote effective conservation in the Channel. Predictive models have been used when selecting MPA sites to identify the locations and ranges of habitats and the biology they contain; however, these models are expensive and have proven unreliable⁹. In order to successfully protect vulnerable marine habitats, we need to know where and how commonly they occur. Climate change is a 'prevailing condition' under the MSFD, and cannot be actively managed at the MSFD's time-scale, but it is imperative that conservation measures take into account expected effects of this phenomenon. For example, temperature-driven poleward shifts in the distributions of marine species have been documented^{12,13}, and should be accounted for in conservation efforts.

Existing policy drivers refer to the creation of an ecologically coherent network; however, MPAs throughout UK and French waters have not been designated as a result of a common mechanism. Different designation types (e.g. Marine Conservation Zones, Parc Natural Marins etc.) have been established through a variety of processes using different selection and design criteria, each with different conservation objectives, levels of protection, and management approaches. As a result, not all MPAs within the network will be managed in a way that protects at risk features within the wider Channel area.

Recommendations

Long-term monitoring programmes offer significant value in developing our understanding of habitats, species and ecosystem services and provide a sound foundation to support evidence-based marine governance. Bridging the gap between projects and policies is a considerable challenge, but can be encouraged by a move away from temporary projects to long standing arrangements that are able to take into account the growing body of scientific knowledge¹⁴. Links between marine and coastal processes, functions, and ecosystem services remain poorly understood and should be a key focus for future research.

Defining clear goals and objectives for MPAs is essential (what exactly do we want to protect?) and should be supported by detailed ecological and socio-economic knowledge, with realistic targets and management criteria.

Protected areas within the Channel region have not been established with a transboundary coherent MPA network in mind. Cross-border cooperation is essential to implement an effective conservation approach in this shared marine space, where ecological frontiers do not abide by administrative boundaries¹⁵. In order to ensure appropriate management of Channel resources, links between stakeholders, including policy makers, scientists, business representatives and local populations, should be strengthened. In addition, the development and dissemination of best practices in marine management should occur at a Channel scale.

Fishing down the food web in the Channel

There have been significant and profound changes to the ecology of the Channel during the past 90 years. Fisheries landings data show that since the 1920s we have been “fishing down the food web” (Figure 1). Landings of large predatory fish such as cod have decreased markedly in recent decades, with those that are caught being of a significantly smaller size, while landings of invertebrates, such as scallops, have increased (Figure 2). These changes have occurred due to the over exploitation of large fish and because heavy types of fishing gear only allow survival of strong shelled animals like scallops. When fishing gear is dragged across the seabed it can profoundly affect the different species living on it, destroying long-lived organisms and creating a simplified, less diverse ecosystem. Trawling and dredging activities are also fossil fuel expensive and can have implications for important nursery areas for fish.

If the Channel is to be managed in a way that promotes the recovery of large fish and seabed habitats then pressures from trawling and dredging should be alleviated¹⁶. Targets for these environmental goals would need to incorporate information about what the seas were like before they were so heavily fished. An effort to reconstruct ecological baselines that go back further than the past few decades is vital to understand the real magnitude of change in today's system. Areas with a ban on trawling and dredging would allow seabed recovery. Ceasing fishing within these areas would help improve food security by providing brood stock and improved catches outside the recovery zones¹⁶.

Figure 1
Annual landings from the Channel, excluding pelagic species, redrawn from Molfese et al (2014).

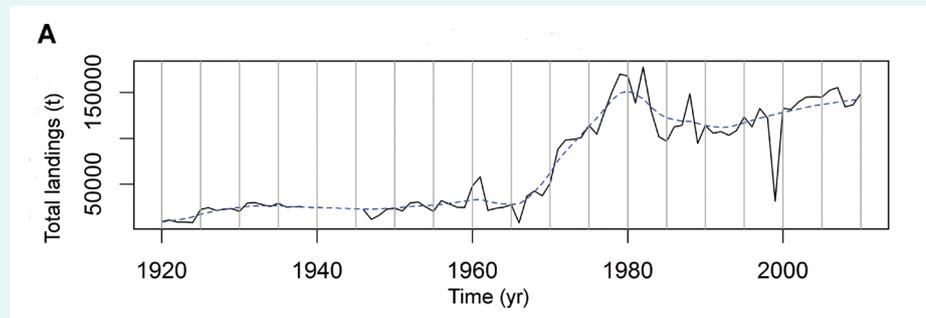
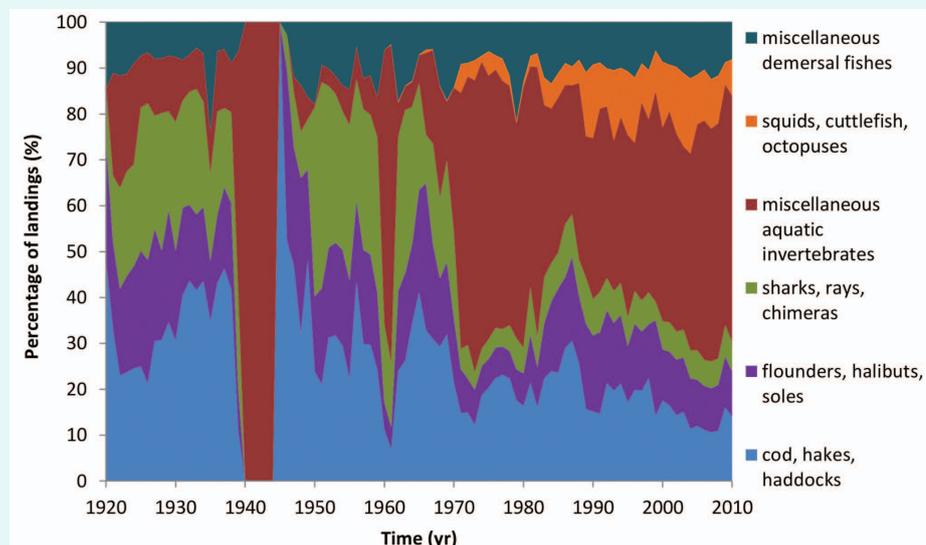


Figure 2
Change in catch composition for the Channel, redrawn from Molfese et al (2014).





Biodiversity

Biodiversity is the variety of life on earth, from genes to ecosystems, encompassing all life forms and habitats, and the complex relationships between them. Despite growing evidence highlighting the importance of biodiversity to human welfare, loss of biodiversity, particularly through habitat loss and ecosystem degradation, continues to occur on a large scale ^{17,18}.

The marine environment provides a wide range of goods and services, including food, recreation and flood protection ^{9,19}, all of which are products of a biologically diverse environment. Pressure on the marine environment is likely to intensify with an increasing human population; therefore maintaining biodiversity is predicted to become ever more challenging. Direct pressures such as pollution, fishing and coastal development can affect marine biodiversity, but indirect pressures, like climate change, can also cause biodiversity to decline ²⁰. The Channel is one of the busiest seaways in the world, providing a vital trade-route for essential commodities; this intense level of use puts pressure on the marine environment which can negatively impact biodiversity. Human survival and associated well-being depend on a biologically diverse natural environment and the services it provides; therefore the effective management of the Channel should be a priority.

Biodiversity was first placed on the political agenda under the Convention of Biological Diversity in 1992, and is now a predominant feature on the political landscape. Under the MSFD, the marine environment is recognised as a “precious heritage that must be protected, preserved and, where practicable, restored with the ultimate aim of maintaining biodiversity” ²¹. Biodiversity is the first of the Directive’s eleven Descriptors which must meet GES.

What are the governance needs in the Channel?

A significant proportion of the human population lives in close proximity to the coast, so any changes to services, such as flood protection and waste disposal, for instance, have the potential to cause disastrous consequences ²². The loss of species and habitats may not only impair the ability of marine ecosystems to feed a growing human population, but will also likely disrupt their stability and recovery potential in a rapidly changing marine environment ²⁰.

In addition to its intrinsic value, biodiversity and its associated services have significant economic value that is seldom captured in markets ¹⁷. Ecosystem services are often public goods with no markets or prices; therefore, their loss is not detected by our current economic incentive system, which means their decline continues unchecked. In order to meet nature conservation aims it is essential that we articulate the value of biodiversity and healthy ecosystems ¹⁸. However, attributing value to ecosystem services is challenging as most are public goods, and use levels are notoriously difficult to regulate, even when they are at, or near the point of, exhaustion ^{1,23}. Despite considerable knowledge gaps, there is an emerging scientific consensus of the need to sustain biological diversity to protect the delivery of ecosystem services ¹⁷. A greater understanding of the importance of biodiversity to ecosystem functioning in the Channel is critical and requires an evidence-based approach rather than theoretical modelling ⁹.

Recommendations

A detailed understanding of changes and trends in the biology and ecology of the marine environment is essential in order to support its effective governance. Long-term monitoring programmes within the Channel are the only means of determining these often gradual changes and are crucial to provide the level of detail required to help support an evidence-based management approach.

The implementation of decision-making tools, such as ecosystem services assessment and valuation, should be based on long-term considerations relevant to marine ecosystems. Evidence-based modelling allows a variety of processes and causal relationships to be better understood, and can help improve the value of biodiversity indicators for decision making.

Attributing financial value to ecosystem services is vital when communicating their importance to a wider audience. Only when there is an agreed consensus that something is worth protecting will suitable protection be afforded to it. A key focus for future research should be on improving our understanding of links between marine and coastal systems and the ecosystem services they provide, and in progressing our ability to assign value to these services, and by extension to biodiversity as a whole.

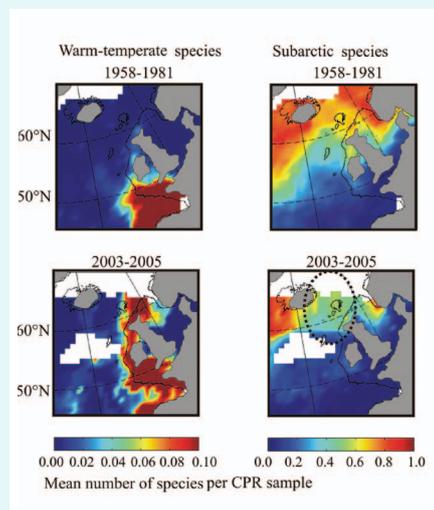
The role of taxonomy in policy

Understanding species composition is important as species play different ecosystem roles. Knowing which species occur where, how they relate to and interact with each other, and recognising their distinguishing features is essential to further our understanding of how ecosystems function, and so provide the benefits, such as food, on which we depend. Despite recent technological advances, trained scientists continue to provide high resolution taxonomic information that instrumentation alone cannot match. While technologically-derived bulk indices, such as satellite estimates of phytoplankton biomass, undoubtedly provide useful information, it is the fine detail of community composition that is essential to understand ecosystem dynamics which is needed to help inform policy decisions.

The Continuous Plankton Recorder (CPR) survey has monitored phyto- and zooplankton (microscopic plants and animals that support the entire marine food web) in the North Atlantic for more than 80 years and is the longest, most geographically extensive macroecological marine dataset in the world. Plankton are highly sensitive to changes in their environment and therefore make excellent indicators of climate change. CPR data have revealed significant changes in biodiversity, particularly in the last 50 years. For example, a cold water, highly nutritious species of small crustacean (*Calanus finmarchicus*) has been replaced, and in fewer number, by a less nutritious sister species (*C. helgolandicus*), a change which may contribute to the decline in the Atlantic fish stocks they support¹². In addition, some species have shown a northward shift in their range of up to 1000 km, as a result of warming seas (see Figure 3)¹². Only through detailed taxonomic monitoring programmes can changes such as these, which are dependent on the dynamics of individual species, be revealed and accounted for in management scenarios.

Taxonomic expertise is integral for developing MSFD plankton indicators for biodiversity and foodwebs, which will be monitored towards GES in the North Atlantic. For pelagic habitats, plankton taxa have been grouped into ecologically meaningful lifeform pairs which respond to specific anthropogenic pressures; supporting taxonomic information provides clues to species-level changes in the lifeforms. Underlying taxonomic data also provide detailed insights into observed ecological changes, for example, identifying and tracking the introduction of non-indigenous species, and supporting blue skies research by aiding identification of emerging issues that may be policy relevant in the future.

Figure 3
Decadal changes in groups of crustacean zooplankton. Over the past five decades warm-temperate species have moved northward while sub-Arctic species have moved polewards Adapted from Beaugrand et al (2002).



Non-indigenous species



Non-indigenous species (NIS) are those which have been introduced by humans, outside their natural past or present distribution²⁴. Species can be introduced accidentally (e.g. through biofouling and ballast water) or deliberately (e.g. through the import and release of fish and bivalves for commercial purposes). NIS may be 'invasive' if they have a negative impact on the ecology of their new location and negative economic and social consequences. Such species comprise approximately 10 -15% of known NIS in the EU²⁵ and are considered to be one of the most important drivers of biodiversity loss globally²⁶, with the financial cost of invasive NIS across the EU in excess of €12 billion²⁷.

Marine organisms are naturally limited in their distribution by factors such as land masses, currents, winds, and temperature. However, anthropogenic vectors, including shipping and aquaculture, have markedly increased the introduction of NIS to the Channel. Warming seas caused by climate change are also affecting geographical distributions of species^{12,28}, enabling the establishment and spread of NIS previously inhibited by climatic conditions.

European initiatives including the Water Framework Directive, Marine Strategy Framework Directive, Habitats Directive, Birds Directive, and the EU Biodiversity Strategy to 2020, specify the need to monitor and reduce the impacts associated with invasive NIS. The proposed EU Invasive Alien Species Regulation²⁵, adopted in September 2014, will require Member States to address additional pathways of introduction, including shipping fouling and ballast, key vectors in the Channel²⁹.

What are the governance needs in the Channel?

Once an invasive species is established it can be difficult, if not impossible, to eradicate. Interception and control of newly introduced species may be feasible, although the nature of marine systems makes early interception difficult. Microscopic, highly mobile life phases, characteristic of many marine species, may result in multiple undetectable introductions prior to their discovery. Regulation of pathways is the most practical and affordable method through which the spread of NIS can be controlled.

NIS can impact entire coastlines and ecosystems and are not restricted by political boundaries. Measures tackling the spread of NIS need to occur at an international rather than national scale, as reinvasions and recolonisation by species previously eradicated from neighbouring countries may take place²⁴. Several species are present on the French coast of the Channel, but are not yet recorded for the UK³⁰; this illustrates the need for collaborative working between countries to manage potential pathways and identify threats.

In 2004, the International Maritime Organisation adopted the Ballast Water Convention, which aims to prevent the spread of NIS by establishing standards and procedures for the management and control of ships' ballast water and sediments. However, the convention will not come into force until it has been ratified by a minimum of 30 Member States representing at least 35% of the world's registered merchant shipping tonnage; currently this figure stands at 30.25%. France has signed up, but the UK has not yet done so.

Recommendations

Long-term monitoring programmes play a significant role in recognising introductions of NIS, and determining whether they are one off recordings or the introduction and subsequent establishment of new populations. Programmes that operate at a high taxonomic resolution are essential in order to detect changes in community composition. In addition, multi-decadal monitoring programmes, such as the CPR survey and MarClim, provide invaluable information on understanding the impact of introduced species; the significant value of these programmes should be recognised, and support given to maintain them. Monitoring programmes must operate at a cross-Channel, transboundary level and data and knowledge shared across the Channel.

Preventing the transfer of non-indigenous marine species and coordinating a timely and effective response to such introductions requires multi-sectoral, transboundary cooperation. Recent research in the Channel highlights the importance of involving stakeholders, including the public, in increasing understanding of the potential problems associated with invasive species. For eradication campaigns to be successful and cost-effective, they need to be timely, informed by good evidence and funded for sufficient time to ensure complete eradication is achieved.

Non-indigenous species monitoring: getting involved



A large, mature blade of the invasive Japanese kelp 'wakame' (*Undaria pinnatifida*) found during a Wakame Watch volunteer survey on the foreshore in the Plymouth Sound, UK. (Copyright J. Sewell).

Under the MSFD, Member States are required to ensure that populations of non-indigenous species are "at levels that do not significantly alter ecosystems" by means of monitoring and surveillance programmes. Forthcoming EU regulation ²⁵ also includes a requirement for Member States to carry out both targeted and general surveys that "benefit from the involvement of difference sectors and stakeholders, including local communities". In order to fulfil these obligations, it is important to support existing suitable monitoring schemes but also to develop new ones to meet these objectives.

Citizen science projects, such as the The Shore Thing and ShoreSearch in the UK and BioLit in France, allow students and volunteers to collect data on the presence and distribution of non-indigenous coastal species. These projects have been developed with verification and validation procedures in place to ensure that information collected can make a useful contribution to monitoring programmes. Initiatives undertaken as part of INTERREG IV programmes Marinexus and Panache have engaged boat owners and marina operators in monitoring settlement panels, placed strategically in marinas and harbours, in order to intercept new arrivals introduced by recreational and commercial vessels. Such projects have the potential to generate early warning and to support interception and early eradication and control measures in order to limit future impacts on natural ecosystems.

Despite concerns that information generated by citizen science projects is unreliable, it is possible to develop such projects, which collect information useful in policy implementation and planning processes ³¹. Citizen science projects are not always a low cost option and it is important to weigh up the costs against the expense of establishing monitoring by trained experts. If successful, however, projects will not only generate useful and much needed data, but will also raise awareness of the issue of NIS and encourage support for management and prevention measures.



Maritime Spatial Planning Directive

The Maritime Spatial Planning (MSP) Directive, like the MSFD, is part of the EU's Integrated Maritime Policy. The MSP Directive³² was adopted by the European Commission in July 2014, and is expected to come into force by September 2016, with maritime spatial plans established by March 2021. The Directive defines maritime planning as "a process by which the relevant Member State's authorities analyse and organise human activities in marine areas to achieve ecological, economic, and social objectives"³². Such activities include, for example, transport, fisheries, and renewable energy production, all of which should be managed using an ecosystem approach. This will ensure the best use of marine areas in the interests of economic development and Good Environmental Status as defined in the MSFD.

MSP aims to contribute to the effective management of maritime activities and sustainable use of marine and coastal resources by creating a coherent decision-making framework that is transparent, sustainable and based on robust scientific data. The Directive sets minimum requirements for the maritime spatial plan development process, but it does not impose new obligations on Member States concerning their sectoral policies (such as those for energy, transport, fisheries and the environment). A key challenge for MSP is to ensure coherence between sectoral policies and management of terrestrial (coastal) and maritime areas including both formal and informal processes, such as Integrated Coastal Zone Management (ICZM).

In France and the UK national marine planning tools already exist although they are not directly comparable nor are they yet fully implemented. The Directive aims to harmonise these plans across borders and between the maritime and terrestrial environments.

Key points of the Directive

- The maritime area should be planned according to region and type of usage, but the format and content of these plans are the Member State's responsibility
- Plans must be adaptive and take into account long-term environmental changes such as climate change effects
- Implementation of MSP will be coordinated nationally and based, as far as possible, on existing rules and mechanisms. This will ensure that plans are proportionate (i.e. that the scale of the task matches the expected benefits), and that they avoid excessive, additional administrative costs. It will also ensure that the principle of subsidiarity (i.e. that tasks are devolved to the national or regional level wherever appropriate), which is fundamental to the EU's decision making, is met.
- MSP implementation must comply with an ecosystem approach and take into account land-sea interactions
- MSP should enable an integrated and strategic view. The plans are intended to promote consistency between the planning of maritime space and other processes, such as ICZM, or equivalent formal or informal practices
- MSP must contribute to the integration of sectoral policies without imposing new obligations
- The plans must be developed transparently: the communication of data, consultation, and participation should be organised with stakeholders, relevant authorities and the general public from the start of the process; these parties should also be guaranteed access to the plans upon completion
- Plans need to be developed using the best available data
- There should be cross-border cooperation
- Plans must be reviewed every ten years and their implementation monitored

These key points reveal a number of issues that need to be considered through the implementation of the MSP Directive. They also underlie the governance issues involved in maritime areas. MSP development assumes a mechanism for local and international dialogue exists and that discussion forums dedicated to the maritime area are active, or will be set up; however, in the Channel they are currently lacking.

The UK has recently launched a formal process of planning in English waters following the adoption of the Marine and Coastal Access Act in 2009. In France, the principal marine legislation is based around the recommendations of the *Grenelle de la Mer* which was introduced in 2009 as a mechanism to bring together the relevant parties to identify actions required to enable sustainable development in the marine environment. As a consequence, the governance of the sea and coasts has been reorganised. Four areas, called maritime *façades*, have been recognised for the continental part of France as the basis of the new local governance. The east and west parts of the Channel belong to two different *façades*: the *Manche Est – Mer du Nord* and the *Nord Atlantique- Manche Ouest*. The state administration is in charge of establishing a national strategy for the sea and coasts and a strategic planning document for each *façade* (decree 2012-219). A national council for the sea and coasts has been established, as well as four continental *Conseils Maritimes de Façade* (Maritime Coastal Councils) and one for the overseas territories.

These councils, which are jointly chaired by the Maritime Prefet and the Prefet for the region, are formed of representatives from many sectors and act as a stakeholder forum to advise on the development of strategic documents for the use, protection and development of their area. The Agency for Marine Protected Areas (AAMP) is responsible for coordinating the network of marine protected areas around France, creating and managing Marine Natural Parks and providing technical support for all other types of MPAs. As far as MSP is concerned in France, this comes in addition to the planning instruments and processes already in place such as the Schemes for the Development of the Sea (SMVM) under the Coastal Law (1986) or the Local Urban Plans (PLU) and Schemes for Territorial Coherence (SCOT) for which a maritime component is optional.

Marine planning in English waters

The legal basis for marine planning in English waters is the Marine and Coastal Access Act 2009, with the UK Marine Policy Statement³³ (MPS) providing the context and policy framework. The MPS lays out the objectives for the marine environment, while the Marine and Coastal Access Act 2009 lays out measures by which the UK government intends to deliver those objectives, including marine planning. Marine planning is a key tool for delivering the MSP Directive and for achieving Good Environmental Status under the MSFD. The marine planning authority for England is the Secretary of State for Environment, Food and Rural Affairs. However, many of the marine planning functions in England have been delegated to the Marine Management Organisation (MMO).

The development of marine plans for 11 areas around England is currently underway, with the government committing to delivering all these plans by 2022. The plan areas are being addressed in turn, with the first marine plans for East Inshore and East Offshore completed and published in April 2014. South Inshore and South Offshore, including a large portion of the Channel waters, are the next marine plans to be developed (Figure 4). The process for the South Plans started in August 2012, and by July 2014 had reached the stakeholder consultation stage on draft visions and objectives, as the precursor to options development. The 12 stages in the plan development process are shown in Figure 5. Once complete, the marine plans will guide the activities of those who use and regulate the marine area to encourage sustainable development while considering the environment, economy and society.

Figure 4
Map showing the South Inshore and South Offshore marine plan areas (MMO).



Marine planning in English waters

Marine planning in England extends from mean high water mark to the limit of UK waters. As the land-use planning system extends down to the low water mark, it should be noted that marine planning shares responsibility with land-use planning across the inter-tidal zone. Public bodies and councils associated with both marine and land-use planning are also required to engage constructively on an ongoing basis for the effectiveness of this shared responsibility. In addition, the MMO are holding a range of events to draw in wide participation from stakeholders in this coastal area. While these events do not exclude stakeholders from France it may be expensive and difficult for them to attend especially if they do not speak English. Some meetings with the equivalent planning authorities on the French side of the Channel have however been convened.

Figure 5

The 12-stage process on how a marine plan is made in England, from selection to implementation and monitoring (MMO).



Challenges for MSP implementation

Implementing Article 11 of the MSP Directive (Cooperation among Member States) to achieve coherency has the potential to be amongst one the greatest challenges for MSP implementation in the Channel. Member States will have to pro-actively work via ongoing bi-lateral discussions. At a minimum such dialogue should result in both Member States being fully aware of each other's respective activities concerning strategic management of their marine areas, both currently and prospectively. It would be advantageous for Member States to open communication channels that can facilitate the exchange of information, allow discussion and debate and foster coherence. Whilst Article 11 contains suggestions for how to achieve cooperation, it is clear that a shared sea area such as the Channel requires cooperation at a number of scales and across sectors. The Cross Channel Forum presents itself as an extremely valuable tool for such necessary transboundary cooperation within the Channel.

Consistency with sectoral policies and terrestrial planning

An important aspect of MSP is to align sectoral policies which have been developed independently thus developing a coherent approach to maritime issues, and increased coordination between different policy areas within the coastal interface between land and sea. In coastal areas, ICZM approaches are often limited to the terrestrial coastal areas or semi-enclosed sea areas (e.g. bays and estuaries) and MSP can enable ICZM to expand offshore. At the same time, at sea, MSP enables integration of coastal and ocean management. Thus the MSP process as outlined in the MSP Directive (Article 7 Land-Sea Interactions) provides an opportunity to strengthen the links between terrestrial and maritime authorities, essential to the development of plans and consistent and functional management programs.

MSP as a framework for coordination of the Water Framework Directive (WFD) and the Marine Strategy Framework Directive (MSFD)

The impact of catchment water quality on downstream marine waters is well known; however, the sources of pollution are not always easy to determine. In addition to consistency with terrestrial planning, MSP can, if designed well, improve policy coordination between the WFD and the MSFD, both of which aim to achieve and preserve the quality of aquatic environments. Differing legal boundaries of the WFD and the MSFD will need to be addressed by Member States to harmonise physical overlaps or gaps.

Stakeholder engagement and coordination of governance bodies

Good governance includes stakeholder engagement from a very early stage and throughout the process, not just during a consultation period. To reduce conflict between stakeholders, the spatial dimension of planning must be the subject of a discussion and arbitration process. Experience shows that there will be better agreement and adoption of marine spatial plans by stakeholders if they are created through a participatory process. In addition, the consistency of policies at different scales requires clear coordination between the associated maritime sectoral bodies and the marine and terrestrial governance authorities.

A number of Articles within the MSP Directive not only support stakeholder engagement but stipulate it as a requirement. Article 9, for example, states that stakeholders are to be informed and consulted at an early stage in the development of maritime spatial plans and Member States are to ensure that relevant stakeholders and authorities, and the public, have access to the plans once they are finalised. Wider legislation also advocates stakeholder engagement, such as the on Public Participation in Decision-making and Access to Justice in Environmental Matters.

Cross-border coordination

Cross-border coordination is necessary to ensure MSP plans are coherent within the marine region concerned. Because MSP is part of the ecosystem approach, it should be implemented using a transboundary approach. In reality, however, there is strong resistance to international application despite the fact that European law seeks to develop cross-border consistency of MSP and thus greater cooperation. This is explained by the fact that cross-border cooperation requires investment in terms of time and money and, in some cases, faces practical difficulties such as language barriers, the need for regular contact and the difficulty of agreeing the management scale³⁴. However, more informal approaches support informal partnerships (e.g. the coastal forums initiated by the CAMIS project and continued under PEGASEAS) that reinforce public authority-stakeholder cooperation. Partnerships such as these are valuable sources of innovation, especially in terms of governance but they will not in themselves enable cross-Channel maritime spatial planning as is required to ensure adoption of an ecosystem approach to Channel governance.

Other difficulties in cross-border coordination may arise due to differences in terms employed by different countries. The English term “marine planning” has been translated to French as “*planification de l’espace maritime*”; these may not have identical meanings, and could be a source of misunderstanding and confusion. It is important to consider these differences as developing a shared understanding between France and the UK is a key element of successful cooperation.

Data sharing and data management

Spatial development plans must be based on data that is up-to-date and robust. Extensive datasets collected within projects or as part of the implementation of other policies already exist, but need to be applied to MSP. Access to these datasets, however, can be challenging as can their joint use if they have been collected independently, using different approaches. These aspects are being addressed through SeaDataNet, the European Marine Use and Data Network (EMODnet) and the EU’s INSPIRE Directive concerning common metadata standards for Member States. The VALMER and PANACHE projects are acting as exemplars for developing common standards for data storage or onward dissemination.

MSP and Integrated Coastal Zone Management (ICZM) in the Channel

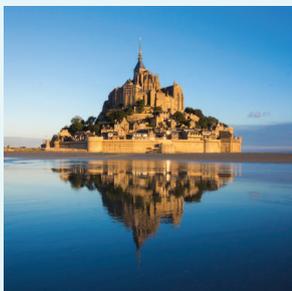
Europe's coasts are facing severe pressures and problems, for example, coastal erosion, habitat destruction and loss of biodiversity and water contamination, that can both undermine the viability of economic activities and lead in many cases to conflict between uses. ICZM intends to establish sustainable levels of economic and social activity in coastal areas while protecting the environment. Improved management of Europe's coastal zones is a necessity, particularly given the demonstrable relationship between many marine and terrestrial activities and resources.

In the context of the Channel, an ICZM Strategy for England was published by Defra in 2008, entitled, "A strategy for promoting an integrated approach to the management of coastal areas in England". This document whilst still in existence, has received little political interest of late, as more recent marine and coastal policy developments have diverted away attention and resources. However, regional ICZM strategies applicable to the English side of the Channel also exist and are active in their implementation, for example, the Dorset Coastal Strategy that seeks to integrate management of Dorset's coast and inshore waters. Furthermore, there are a number of coastal partnerships in existence such as the Dorset Coastal Forum and the Devon Maritime Forum.

France is a signatory of the Mediterranean ICZM Protocol that came into force in 2011 (ratified by France in 2009). This is the seventh Protocol in the framework of the Barcelona Convention (Protection of the Marine Environment and the Coastal Mediterranean Region). It provides a strong model for countries around the Mediterranean to better manage in a pro-active manner and in doing so, protect their coastal zones. In light of the Protocol's statutory nature it is a unique legal instrument that sets a precedent for other regional sea areas and basins, and areas such as the Channel. The associated Action Plan focussed on country-based planning and regional coordination.

Given that specific legislation relating to coastal and marine areas is largely absent from terrestrial planning and where it does exist, it is restricted, generally optional and lacks a mechanism for implementation, the English experience in ICZM through coastal fora and the ICZM Protocol in France could be harnessed to the advantage of the Channel's management. In doing so, it could address inappropriate and uncoordinated sectoral legislation and policy that have often worked against the long-term interests of sustainable management of coastal zones. Such lessons learned from various attempts to develop ICZM in France and United Kingdom would be important to help implement MSP. The difficulties of addressing maritime issues in the Mont Saint-Michel area from an ICZM perspective illustrate this challenge.

History of integrated management in the bay of Mont-Saint-Michel



Located in the Normano-Breton Gulf, the Bay of Mont-Saint-Michel, a UNESCO World Heritage site since 1979, is situated in an area of outstanding natural beauty that gives the bay a strong heritage and important ecosystem, landscape and cultural values and makes it a popular tourist site. The bay has many environmentally protected areas with its environmental quality being strongly influenced by several small coastal rivers. It is also renowned for its shellfish production, fisheries and multiple leisure activities.

Although the bay is a clearly identifiable entity from an ecological standpoint, its catchment is divided between two regions, three départements and two water management agencies (Loire-Bretagne and Seine-Normandie). This administrative division forms a major obstacle to the consistent management of the bay. Since 1998, catchment management has been coordinated by an inter-basin commission, called InterSAGE of the Bay of Mont-Saint-Michel. The creation of InterSAGE has had a strong impact on the management of the rivers, but has not fulfilled the hope for coordinated maritime governance. In 2005, an inter-département association was formed to steer and coordinate coastal governance throughout the area. The aim of the association was to improve coordination of the patchwork of existing protection and management tools. But achievements were not considered sufficient and the association was dissolved in 2011.

The possible creation of a Normano-Breton natural marine park in a wider area, including the Bay of Mont Saint-Michel, is now under discussion. This would result in an effective form of maritime governance on a relevant scale and involving all stakeholders. However, the project does not have unanimous support among local stakeholders, so its implementation remains uncertain.

Recommendations for MSP in the Channel

- Maritime spatial plans must be developed with a strategic and adaptive dimension, suited to the territory in question and to existing governance bodies and in the case of the Channel, the marine waters across the whole Channel should be considered
- Maritime spatial plans should consider and be coordinated with coastal zone management processes in place
- Marine planning authorities on both sides of the Channel need to a) need to take an ecosystem approach that looks at the whole Channel ecosystem and b) commit to planning jointly in cross-border areas where practicable
- Stakeholders should be invited to take part in the process as early as possible in its development, and remain a part during all stages of implementation, to ensure the best possible coordination
- Stakeholders from throughout the Channel region should have the opportunity to contribute to the marine or maritime planning process, including those involved in governance and those representing the various sectors of interest in the Channel.
- Sharing of existing data and updates of contemporary research must be facilitated for example through the development of common cross-Channel databases populated by authorities on either side of the Channel
- Stakeholder engagement and interaction between individuals and policy makers should be encouraged through forums and other events to facilitate international cooperation. There are a number of examples of the benefits of this from the Cross Channel Forum created by the INTERREG project CAMIS, and continued through PEGASEAS





Common Fisheries Policy

Managing European fish stocks and fishing fleets is an ongoing balance between sustainability and social requirements. Effective management needs a structured approach, which is found in the Common Fisheries Policy (CFP). The CFP was formally introduced in 1983 and provides a management framework for the fishing and aquaculture sector in Europe. The most recent version of the policy was introduced through the December 2013 Regulation of the CFP³⁵, commonly known as the CFP reform, which came into force on 1 January 2014. It aims to ensure that fishing and aquaculture are environmentally, economically and socially sustainable, and that they provide a source of healthy food for EU citizens. The CFP is a multi-faceted policy that addresses fisheries management across the whole EU, including the Channel.

The main fishery management tools defined at European or national level are:

- Restricting access through licence or permit systems and temporary fishing bans
- Defining technical measures on minimum conservation reference sizes for fish species (any fish below a certain species specific size may not be sold at market for human consumption but must be landed), and on the characteristics of fishing vessels and gear
- Establishing Total Allowable Catches (TACs) for main commercial fish species. These are then shared between countries by fishing zone in the form of quotas, whose distribution between professional organisations or individual fisheries is left to the Member States' discretion. For the Atlantic-North Sea zone, TACs are principally based on the scientific evaluation of stock status carried out by the International Council for the Exploration of the Sea (ICES) and on the advice of the Scientific Technical and Economic Committee for Fisheries (STECF). In the Channel, 24 fish species are regulated by the quota system³⁶
- Fisheries management in territorial waters (out to 12 nautical miles) for species not under an EU quota is delegated to Member States who may declare their own management measures for their national fleet, provided that they do not contradict European-wide measures

The CFP is reformed every ten years. Over the last 20 years, ecosystem-based management, regionalisation of fisheries management, and multiple-species and multi-annual management have underpinned CFP reforms. Ecosystem-based fisheries management includes Maximum Sustainable Yield (MSY), the highest theoretical equilibrium yield that can be continuously taken on average from a stock under existing average environmental conditions without affecting significantly the reproduction process³⁵, as one aspect within a wider framework of environmental sustainability. In addition, consideration is given to other ecosystem impacts of fishing, such as habitat destruction and impacts on non-target species.

The latest CFP reform, introduces, for the first time, legally binding requirements for commercial stocks to be fished at MSY by 2020³⁵. The reform emphasised the commitment by the EU and its Member States to act against the continued global decline of fish stocks. The reform notes that exploitation rates to produce MSY should be achieved by 2015, unless doing so would seriously jeopardise the social and economic sustainability of fishing fleets; MSY should be achieved for all stocks no later than 2020. In addition, the reformed CFP has a fixed objective to facilitate healthy fisheries products while reducing fisheries subsidies. A further aim is to contribute to the creation of jobs and growth in coastal regions.

The reformed CFP also intends to promote accountability within the sector so that fisheries become integrated into an ecosystem-based management approach. For this, the reformed CFP focuses on the following objectives:

- Introducing a landings obligation for all commercial stocks, on a fishery by fishery approach
- Increasing autonomy in the sector by decentralising decision-making
- Giving aquaculture more importance
- Supporting small-scale fisheries
- Improving scientific knowledge
- Developing multiple-species and multi-annual approaches to the establishment of TACs

CFP key points

Key areas addressed:

- Fisheries management
- International policy (including fishery agreements with third party countries)
- Markets and trade policy
- Policy funding: EFF (European Fisheries Fund) (2007-2013) replaced by the EMFF (European Maritime and Fisheries Fund) (2014-2020)

Key EU principles concerning the CFP are:

- The EU has exclusive competence for resource management matters – Member States are unable to act independently
- Equal access to EU waters and resources for all Member State fisheries
- Relative stability (the proportion of the total allocation of each stock that different EU countries are allowed to catch) based on the recognition of historic rights

The CFP guarantees that fishery and aquaculture activities are environmentally sustainable in the long-term through:

- Application of the precautionary principle to fisheries management with the objective of achieving MSY by 2020. The precautionary principle is applied in circumstances where there are reasonable grounds for concern that an activity is, or could, cause harm but where there is uncertainty about the probability of the risk and the degree of harm
- Implementation of the ecosystem approach to fisheries management which requires sustainable management of fisheries stocks as well as the limitation of other fishery-driven negative impacts on the marine environment



Challenges

The challenges facing European fish stocks are great; one of the most challenging is the increased catch ability by vessels which results in landing more fish than can be safely sustained. The reformed CFP objectives are ambitious and demand enhanced cooperation within the profession and with the relevant authorities, fishermen and scientists. Changing objectives, governance frameworks and instruments all present challenges to effectively implementing the reformed CFP and achieving fishing practices that are environmentally, economically and socially sustainable.

Ecosystem approach

The ecosystem approach is now a well-integrated dimension of fisheries management. It provides a coherent link not only to other major components of the EU Integrated Maritime Policy (IMP), the Marine Strategy Framework Directive and Maritime Spatial Planning, but also conservation instruments (e.g. Natura 2000 protected areas and the Birds and Habitat Directives)³⁷.

Indeed, as underlined in the 2009 Green Paper for the Reform of the Common Fisheries Policy³⁸, “capture fisheries and aquaculture compete increasingly with other maritime sectors for marine space”. An ecosystem-based approach to fisheries management means that the impact of by-catch of non-target fish species, in addition to cetaceans and sea birds, can also be incorporated.

The basic objectives of the CFP include the application of both the precautionary principle to fisheries management, and the progressive implementation of an ecosystem approach. As such, the European Commission defined two key objectives for CFP management decisions: the first calls for the best available knowledge of the interactions between fishing and ecosystems to be used in decision making. This also includes minimising the direct and indirect impacts on the marine environment, in particular by reducing the overall fishing pressure. The second seeks to ensure that the fisheries measures employed fully support the cross-sectoral approach defined by the EU’s Marine Strategy Framework Directive and the Habitats and Birds Directives³⁷.

Landing obligations

Discards are marine organisms that have been rejected and thrown back into the sea due to quota limitations, their lack of commercial interest or low value. To fully evaluate the impact of fishing pressure on ecosystems, and to encourage the development of practices that are more selective and clearly targeted, the entire catch must be landed and declared for commercial stocks.

The landing obligation will be gradually phased in according to a timetable specific to the different areas and types of fisheries. To give fishermen time to adapt, the reform allows an authorised percentage of discards that is limited and subject to certain conditions. Two solutions offered to fishermen are: sorting during fishing through the use of adapted equipment (such as square mesh panels) or sorting on the deck. The latter option poses several difficulties: (i) there are currently few industries that put these previously discarded products to an applied use, (ii) if sorting is carried out after fishing, this does not erase the damage on the ecosystem caused by this harmful form of exploitation and (iii) this practice means extra work for fishermen. Therefore, this measure involves both technical and social challenges; in addition to the need to develop tools to limit or even avoid by-catch, reliable catch data must also be obtained.

Multi-annual plans

Multi-annual plans are a key component of managing important stocks and fisheries; they contain the goal for fish stock management expressed in terms of fishing mortality and/or targeted stock size. Plans should be based on scientific, technical and economic advice with the aim of restoring and maintaining fish stocks above levels capable of producing MSY. Multi-annual plans may also include measures to minimise negative impacts of fishing on the ecosystem and indicators for the monitoring and assessment of the progress to achieve the targets of the plan³⁹. Under the reformed CFP, EU fisheries will be managed by multi-annual plans and governed by the ecosystem approach and the precautionary principle; these approaches provide improved environmental protection and a sound foundation from which fishermen may plan their activity and investments in the long-term⁴⁰.

Fleet management

Management of the European fleet is a key challenge for fisheries in Europe, as its overcapacity is responsible for the overfishing of stocks. If the fleet is not managed sustainably, the renewal of stocks and the future security of the fishing industry will be compromised. The 2002 CFP reform had flagged this problem; however, the consequent measures taken failed to resolve this issue. This is because, due to fleet modernisation, a reduction in the number of vessels does not automatically equate to a reduction in fishing effort. The pressure on resources has not, therefore, sufficiently diminished, and in 2012 many fish stocks were still exploited to levels in excess of MSY³⁷. The challenge is, therefore, to reduce fishing mortality to MSY levels while avoiding extreme economic and social impacts³⁷. In fact, during the 2015-2020 transition period required for fish stocks to meet MSY limits, catch levels will diminish for certain stocks. Several tools have been developed to improve fleet management, and include:

- The development of multi-annual plans – these long-term management plans for fisheries or specific fish stocks are based on scientific advice and stakeholder consultation. The plans include environmental, social and economic impact assessments and take into account regional specificities.
- The Transferable Fishing Concessions (TFC) scheme, introduced in 2014, enables fishing vessel owners to plan their fishing activity along market developments, land all catches and plan their investments. Member States allocate TFCs to vessel owners or groups of fishermen for a limited time, after which they return to the Member State to be reallocated. They may be transferred under strict conditions between owners of registered and active vessels only. Initially planned as compulsory, the TFC scheme, which already exists in some EU countries such as Denmark and Estonia, is now merely optional. Member States should work closely with stakeholders so that the national TFC system is adapted to national specificities and accepted by those involved. National or regional priorities should be fixed and a percentage of national quotas reserved for small-scale fleets⁴¹.

Decentralisation of governance and regionalisation

Regional Advisory Councils were established after the 2002 CFP reform and, following the 2014 reform, became simply Advisory Councils (ACs), which provide a consultative role. Their role is to make recommendations and lead proposals with the European Commission and the relevant national authorities according to their field of expertise and geographical area. ACs are an important tool in the decentralisation of fisheries management. Regionalisation, where Member States have greater freedom to implement measures to meet targets defined by EU legislation, helps provide a solution to the management of shared stocks⁴². The new CFP calls upon Member States to agree between themselves on the adoption of common CFP application measures.

Transnational cooperation is an important aspect for sustainably managing shared stocks in regions such as the Channel. Increased stakeholder participation would enable elements that are not currently taken into account to be integrated into the development of management strategies.



Seabass fishing in the Channel



The European seabass (*Dicentrarchus labrax*) is an economically important species for professional fishing, but it is also particularly targeted by recreational fishermen on both sides of the Channel. This species has a relatively high commercial value and is often present in landings of different commercial fisheries. In fact, although it is targeted all year round by fisheries using hook and line gears, it is also found in trawler and driftnet by-catch. During the spawning season between November and April in the Channel and the Bay of Biscay, seabass is targeted by pelagic trawlers and ringnet seiners. Whether caught from shore, vessel or underwater fishing, seabass is also a highly prized species for recreational fishermen in both France and the UK, and preliminary catch estimates show that catches from recreational fishing are close to those from commercial fisheries, particularly in France.

With the exception of minimum conservation reference size, seabass fishing is still largely unregulated at the European level; existing management tools are mainly derived from national regulations (e.g. weekly catch thresholds for pelagic trawlers, the closure of seabass nursery areas in Britain), and even initiatives from fishermen themselves (biological rest periods). The latest scientific assessments from ICES detected the beginnings of overexploitation of seabass in some parts of the Northeast Atlantic area and in 2013 even recommended a 36% catch reduction in this region. ICES also noted, however, that there was not enough scientific knowledge to improve the management of this species and recommended the strengthening of scientific monitoring and studies in Member States. Discussions are underway in the European Commission and with Member States to implement management measures for seabass fishing, as the species does not currently have a quota under the CFP. Such measures, however, will rely on cooperation between commercial fisheries and scientists in order to gather more data on this species and its exploitation.

European Maritime and Fisheries Fund (EMFF – 2014/2020)

The EMFF replaces the European Fisheries Fund (EFF-2007/2013) and all the other financial instruments involved in funding the CFP and the Integrated Maritime Policy (IMP). It provides funding to the fishing industry and coastal communities to aid in adaption to changing conditions in the sector, and to encourage economic resilience and ecologically sustainable practices. The EMFF must support their implementation and meet the following objectives ⁴³:

- To promote sustainable and competitive fishing and aquaculture
- To promote the development and implementation of the EU's IMP
- To promote a balanced and cohesive territorial development of fisheries-dependent areas (including aquaculture and fishing areas in inland waters)
- To contribute to the implementation of the CFP

The EMFF funds ⁴⁴:

- Sustainable development of fishing and aquaculture (including adjustment of the fleet, such as scrapping of fishing vessels)
- Storage aid
- Financial compensation for additional costs in Outermost Regions (island or island groups in mid-ocean, e.g. the Azores)
- Monitoring
- Data collection
- IMP direct management provisions (funds managed by the European Commission)
- IMP shared management provisions (funds managed by Member States)

As a financial instrument, the EMFF is an important accompanying mechanism for the CFP and IMP. Its implementation raises several governance issues, one of which concerns the involvement of beneficiaries, fishermen, and other governmental and non-governmental stakeholders in the development of operational programs and the creation of funded activities. Another issue, regarding the share of the funds managed by Member States, is the possibility for national authorities to delegate fund management to local authorities, such as the *régions* in France. This should allow the development of fund-use strategies that are closely in line with sector needs, but that are also consistent with the other structured funds that are managed in a decentralised way. Finally, recognition by the actors of the long-term negative impacts of certain subsidies is important if the EMFF is to contribute to achieving the general objectives of the CFP.

The EMFF is not only about support for adaptation and development of fishing and aquaculture production tools, it is also about profitable applications for aquatic products and the balanced development of fishery- and aquaculture-dependent regions. In aquaculture, there are important governance issues involved in ensuring effective coordination with other European funds to enable the integrated local development of coastal and maritime regions.

Recommendations

- To develop scientific knowledge on the functioning of the Channel ecosystem and promote data sharing in transnational frameworks
- To gain understanding on the impact that fisheries have on marine ecosystems and the effect of climate changes and natural variability on stocks
- To strengthen technical and scientific support for changes in fishing practices resulting from the CFP objectives
- To promote partnerships with industry to test selective fishing techniques
- To help stakeholders fully invest in advisory committees, commissions, scientific and technical organisations to help encourage buy-in
- To integrate fishing and aquaculture activities into management plans at multiple spatial and political scales
- To be aware that the sustainability of the fishing industry is also based on social issues such as training for young people and job attractiveness
- To take into account the specific constraints of small-scale fisheries
- To improve communication between scientists, decision-makers and stakeholders



Next steps for effective Channel governance

This guide has identified specific measures within three key policy areas that support the effective governance of the Channel ecosystem. Allied to these specific measures, there are two broader cross-cutting lessons that can be taken from the examples presented in the guide and from the wider experiences of the INTERREG IVA projects involved in the governance of the Channel. It is crucial that in order to promote the effective governance of the Channel ecosystem:

- Effective integration of governance approaches is required
- Effective cross-Channel stakeholder communication is required

Integration of governance

It is clear from all of the projects that contributed their experiences to this guide, that to govern each side of the Channel independently risks eroding the current and future environmental, economic and social benefits available from the Channel. It is widely recognised that ecosystem functions, economic opportunities, and social benefits operate at a whole-ecosystem scale and it is only through coordinated governance at this level that the contribution of the Channel to the long-term prosperity of both the UK and France will be secured and enhanced. To achieve this, a spatially integrated approach to Channel governance is required in which shared aspirations are articulated and concrete co-ordinated measures established. With appropriate political support and resources, such a plan or strategy could prove a powerful driving force for the coordinated and effective governance of the Channel.

Cross-Channel stakeholder communication

It is vitally important that there is an open and low cost opportunity for Channel stakeholders to meet and discuss shared concerns and opportunities related to its current and future governance. Such communication enables trusted relationships to be formed, strategic opportunities to be seized, decisions to be coordinated, and promotes a truly cross-Channel view of shared issues. The Cross Channel Forum, initiated during the CAMIS project and continued through the PEGASEAS project, has proven to be an effective mechanism to enable stakeholder communication and has been widely supported by Channel stakeholders. The Cross Channel Forum would be a credible vehicle to host many of the discussions necessary to implement the recommendations in this guide.

These recommendations represent a step change in the governance of the Channel and would, if delivered, provide tangible benefits for Channel residents, the Channel marine ecosystem, and the wider European economy. Their delivery would also represent a fitting legacy from the INTERREG IVA programme's focus on marine governance in the Channel.





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