

## **EU Law and the ecosystems approach: Making it work in practice**

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### **Abstract**

The European Union is currently developing an elaborate regulatory framework for the implementation of an ecosystems based approach to the management of human activities in the marine environment with a view to halting the loss of biodiversity and to conserving functioning ecosystems. This paper explains how this development has its normative basis in a number of international and European legal instruments including: the 1982 United Nations Convention on the Law of the Sea; the 1992 Convention on Biological Diversity; the European Treaties; the Marine Strategy Framework Directive; the Habitats and Birds Directives; the common fisheries policy; the European integrated maritime policy; as well as in several soft law initiatives concerning marine spatial planning and integrated coastal zone management. This paper describes how European law is evolving rapidly and placing new demands on national data collection and marine environmental monitoring programmes, as well as on the institutional structures in the Member States that are responsible for offshore licensing and planning. The paper concludes that significant obstacles remain to implementing the concept in practice by the Member States.

**Keywords** ecosystems-based marine management, Marine Strategy Framework Directive, the Habitats Directive, the common fisheries policy, the European integrated maritime policy

### **Introduction**

This year is the United Nation's International Year of Biodiversity and is aimed at promoting greater public awareness of the importance of biodiversity to our lives and to highlight the various measures that need to be taken at global, regional and local levels to combat its loss.<sup>2</sup> One notable feature of the public information campaign thus far is that it has quickly focused attention on the failure of the world's governments to achieve the biodiversity conservation targets set down at the 2002 World Summit World Summit on Sustainable Development (WSSD) and under the 1992 Convention on Biological Diversity.<sup>3</sup> The scale of this problem should not be underestimated, as noted by the United

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<sup>2</sup> See [www.cbd.int/2010/welcome/](http://www.cbd.int/2010/welcome/)

<sup>3</sup> Johannesburg Plan of Implementation, UN Doc. A/CONF.199/20. CBD approved by Council Decision 93/626/EEC, OJ L 309, 13.12.1993, p. 1.

Nations Secretary General in the third *Global Biodiversity Outlook*, “current trends are bringing us closer to a number of potential tipping points that would catastrophically reduce the capacity of ecosystems to provide...essential services”.<sup>4</sup> This is particularly the case in the marine environment where marine ecosystems are a major provider of ecological services and a fundamental source of biodiversity with 15 of the 33 types of animal life on the planet only found in the ocean.<sup>5</sup> Recent findings of the *Census of Marine Life* support this view and describe life in the ocean as “richer, more connected and more impacted by humans, and yet less explored than we had known”.<sup>6</sup> Incredibly, the proportion of species not yet described is estimated by *Census of Marine Life* scientists to be in the region of 39% to 58% in Antarctica, 38% for South Africa, 70% for Japan, 75% for the Mediterranean deep-sea, and more than 80% for Australia.<sup>7</sup> The *Census of Marine Life* report identifies the principal threats to marine life as overfishing, lost habitat, invasive species and pollution. Emerging threats include: rising water temperature and acidification; as well as the enlargement of areas characterized by low oxygen content (called hypoxia) of seawater. One of the authors of the report believes that “marine species have suffered major declines, in some cases 90% losses, due to human activities and may be heading for extinction, as happened to many species on land.”<sup>8</sup>

The *Census of Marine Life* report is fully consistent with recent scientific findings in the European Union (EU) where there is also increased awareness of the scale of biodiversity loss and the corresponding threat to the provision of ecosystem services. Take for example the report published by the European Commission in 2009 on the first assessment of the conservation status of more than 1,182 species and 216 habitat types protected under the Habitats Directive.<sup>9</sup> This assessment reveals that only a small proportion of species and habitats that are protected under European law are considered to have achieved a favourable conservation status.<sup>10</sup> Most notably, the status of coastal habitat types and species is deemed in the report to be particularly poor. This problem is compounded by a major scientific data deficit with 57% of the marine species assessments and about 40% of the marine habitats

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<sup>4</sup> Secretariat of the Convention on Biological Diversity (2010) *Global Biodiversity Outlook 3*. Montréal, 94pp.

<sup>5</sup> *The Ocean: Our Future*. Report of the World Commission on the Oceans (Cambridge: Cambridge University Press, 1998)

<sup>6</sup> *First Census of Marine Life 2010: Highlights of a Decade of Discovery*. Available at: <http://www.coml.org/Highlights-2010>.

<sup>7</sup> *Ibid*

<sup>8</sup> See *Census of Marine Life Press Release*, October 4, 2010.

[http://www.coml.org/pressreleases/whatlives10/CoML\\_WhatLivesInTheSea\\_Public.pdf](http://www.coml.org/pressreleases/whatlives10/CoML_WhatLivesInTheSea_Public.pdf)

<sup>9</sup> Report from the Commission to the Council and the European Parliament, Composite Report on the Conservation Status of Habitat Types and Species as required under Article 17 of the Habitats Directive, Brussels, 13.7.2009 COM(2009) 358 final. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora OJ L 206, 22.7.1992, pp. 7–50; Council Directive 2009/147/EC of 30 November 2009 on the conservation of wild birds, OJ L 207, 26.1.2010.

<sup>10</sup> Article 17 of the Habitats Directive obliges Member States to submit information on implementation every six years. The European Environment Agency used the national reports to produce an integrated assessment for each geographic region, habitat type and species. The Commission then drew on those assessments for a composite report as required under the Directive.

assessments classified as ‘unknown’ by the Member States.<sup>11</sup> The loss of biodiversity and the information deficit extends to the Mediterranean Sea, the Black Sea, the Baltic Sea, the North Sea, the North-east Atlantic Ocean, including the waters surrounding the Azores, Madeira and the Canary Islands.

On the whole, these findings are a major disappointment in light of the ambitious targets set down by the EU Heads of State to halt the decline of biodiversity by 2010 in line with the 2002 WSSD objectives.<sup>12</sup> For those concerned about the loss of biodiversity in the European marine environment and the corresponding threat to ecological services, some comfort may be drawn however from the gradual and perceptible evolution of new normative tools that are beginning to shape the way the law is applied and interpreted by regulatory and judicial bodies. In particular, the emergence of the ecosystem approach as a key normative concept in European law is to be welcomed as a major step aimed at achieving the high-level political commitments to protect biodiversity and to ensure the sustainable use of natural resources. With this in mind, this paper has the dual aim of outlining, in the first instance, a number of concrete regulatory measures that have been adopted at international and EU levels which provide a legal basis for the implementation of the ecosystem approach in the marine environment, and secondly to identify a number of legal and institutional constraints on implementing the concept in practice in the Member States.

#### **At a glance: what is the ecosystem approach?**

The manner in which the ecosystem approach is being implemented at a global level is enriched by the interdisciplinary and multidisciplinary nature of the scientific work that is being undertaken by international bodies.<sup>13</sup> The absence of a universally accepted definition of the “ecosystems approach” in international or indeed EU law does not appear to have led to any intractable problems in implementing the concept in practice.<sup>14</sup> Indeed, several international organisations have adopted working definitions which have facilitated the development of the law. In this regard, one good starting point is the 1992 Convention on Biological Diversity which defines an “ecosystem” as “a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit”.<sup>15</sup> The marine environment is both an ecosystem and an interlocking network of ecosystems. The International Council of the Seas (ICES) describes the ecosystem approach as:

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<sup>11</sup> Report from the Commission to the Council and the European Parliament, Composite Report on the Conservation Status of Habitat Types and Species as required under Article 17 of the Habitats Directive, Brussels, 13.7.2009 COM(2009) 358 final.

<sup>12</sup> Communication from the Commission Halting the Loss of Biodiversity by 2010 — And beyond sustaining ecosystem services for human well-being. COM(2006) 216 final, Brussels, 22.5.2006

<sup>13</sup> Report of the Secretary-General on Oceans and the Law of the Sea (UN Doc. A/61/63, 9 March 2006), at 46–52.

<sup>14</sup> Report on the Work of the United Nations Open-Ended Informal Consultative Process on Oceans and the Law of the Sea at its Seventh Meeting (New York, 12–16 June 2006) (UN Doc. A/61/156, 17 July 2006) (ICP-7 report). para. 6.

<sup>15</sup> Art.2 of the 1992 Convention on Biological Diversity.

“the comprehensive integrated management of human activities based on the best available scientific knowledge about the ecosystem and its dynamics, in order to identify and take action on influences which are critical to the health of marine ecosystems, thereby achieving sustainable use of ecosystems goods and services and maintenance of ecosystem integrity.”<sup>16</sup>

The rationale for adopting this approach is that while the ecosystem itself may not be managed, the human activities which interact with and impact upon the ecosystem may be managed with a view to conserving biodiversity and ensuring sustainable development. In the words of a study undertaken by the Swedish Commission on the Marine Environment:

“The ecosystem approach implies an integrated, interdisciplinary management system, which on the one hand recognises our right as human beings to use what the ecosystems produce, and on the other ensures that all ecosystem components (i.e. species, habitats, structures, genetic diversity) can be found to such an extent that their survival is guaranteed in the foreseeable future. Ecosystems cannot just be seen as a number of different species, each of which needs to be protected. The interaction among these species must also be safeguarded. The aim is to preserve the structure and function of the ecosystem and hence maintain its capacity to provide us with products and services.”<sup>17</sup>

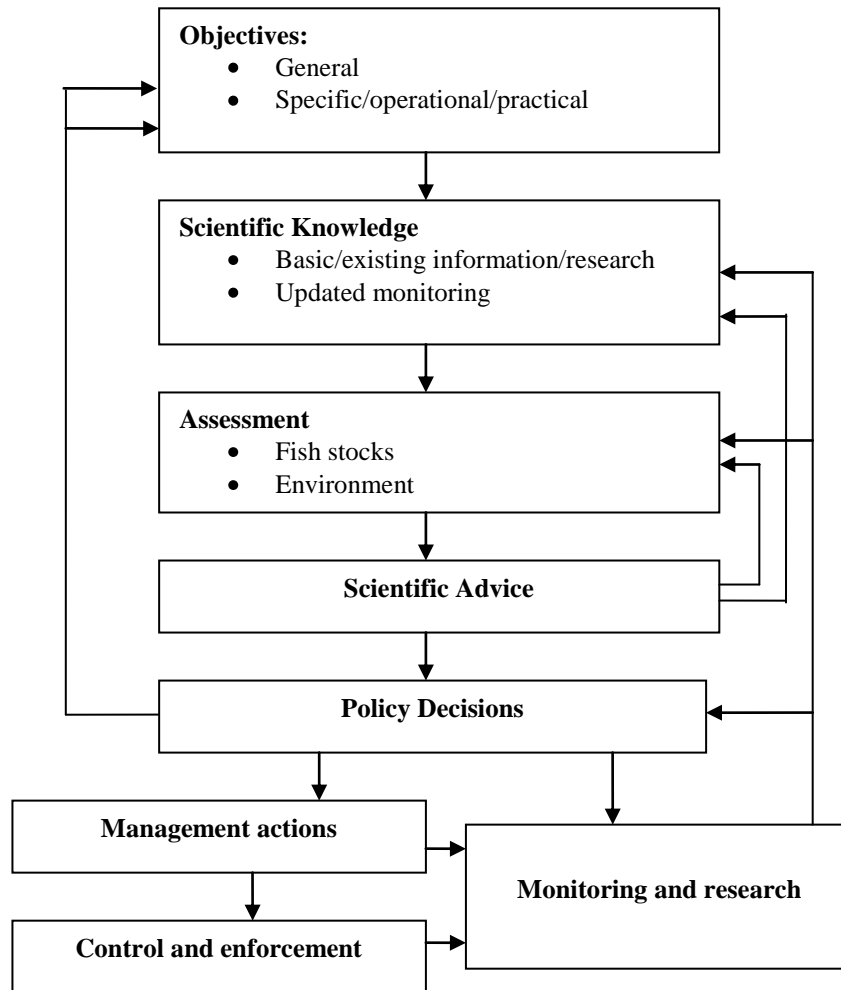
Several international organisations have developed conceptual frameworks for the application of the ecosystems approach to the marine environment. One particular illustrative example is Annex II of the Bergen Declaration which sets out a conceptual framework for the implementation of the ecosystem approach to the management, protection and restoration of the North Sea. This framework, shown in schematic form in [Figure 1](#) below, entails the application of a number of principles in the decision-making process, including: stakeholder consultation, best use of available scientific and technical knowledge about the structure and function of the ecosystem; best use of scientific advice; integrated expert assessment; coordinated and integrated monitoring; as well as the adoption of schemes for control and enforcement.

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<sup>16</sup> Guidance Document - ICES 2005. Guidance on the Application of the Ecosystem Approach to Management of Human Activities in the European Marine Environment. ICES Cooperative Research Report no 273

<sup>17</sup> Swedish Commission on the Marine Environment, *The Sea – Time for a New Strategy* (Stockholm, June 24th 2003), p.61

**Figure 1: Conceptual Framework for the Application of the Ecosystem(s) Approach under the Bergen Declaration.<sup>18</sup>**



From the scheme shown in [Figure 1](#) it is evident that the ecosystems approach entails the implementation of a new management paradigm for the protection of the marine environment and for the utilisation of marine resources. This paradigm focuses on the impacts of human activities on the entire ecological system rather than its component parts.<sup>19</sup> Perhaps a little perplexing from a legal perspective, there appears to be no single way to implement the ecosystem approach as this is very much contingent upon the measures that are required to achieve ecosystem integrity.<sup>20</sup> In a key paper on the subject, one authoritative commentator notes that the ecosystems approach requires extensive stakeholder participation, resilient management institutions, as well as scientific institutions of quality

<sup>18</sup> This Declaration was signed by the Ministers responsible for the protection of the environment of the North Sea and the European Commissioner responsible for environmental protection at the Fifth International Conference on the Protection of the North Sea, Bergen, March 20– 21, 2002. Ireland does not participate at the North Sea Conference.

<sup>19</sup> See J. Brunnée and S.J. Toope, 'Environmental Security and Freshwater Resources: A Case for International Ecosystem Law', 5 *Yearbook of International Environmental Law* (1994), 41, at 55.

<sup>20</sup> See Decision V/6, *ibid.*, Section A, para. 1.

and integrity.<sup>21</sup> In recent years, ICES has provided scientific advice on the conceptual development of the ecosystem approach and a number of practical methodologies for its implementation.<sup>22</sup> Furthermore, they have identified seven practical steps in applying the approach.<sup>23</sup> These are as follows: (1) scoping (evaluate current ecosystem status; evaluate current ecosystem policies; inventory human activities; evaluate social & economic policies); (2) contrasting current situation with the vision; (3) identify important ecosystem properties & threats; (4) setting ecological objectives; (5) derive operational objectives, indicators & reference points (6) design ongoing management; (7) periodic updates. As will be seen below, this methodology is now reflected in the European Marine Strategy Framework Directive.

What is important to note here is that the various methodologies advanced by international bodies for the implementation of the ecosystem approach share many similarities and their ultimate aim is to protect and maintain biodiversity with a view to ensuring that the marine environment is clean, healthy and productive.<sup>24</sup>

### **Normative basis in international law and policy**

The codification and development of the ecosystem approach is closely aligned with the development of new principles and approaches to the protection and preservation of the marine and coastal environment. The origins of the approach may be traced back to the adoption of a number of soft law instruments in the early 1970s. One such instrument was the 1972 Stockholm Declaration on the Human Environment that placed an obligation on States to cooperate in the conservation, protection and restoration of the health and integrity of the Earth's ecosystem. On a similar note, the World Charter for Nature called upon States to manage ecosystems and organisms in such a way as not to endanger the integrity of those other ecosystems or species with which they coexist.<sup>25</sup>

Since the early 1980's, specific reference is made to the ecosystem approach in a number of international treaties and policy initiatives that are applicable to the marine environment including the 1980 Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). The latter provides for the commercial exploitation of marine living resources in the CCAMLR area as long as

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<sup>21</sup>P. Degnbol in M. Nordquist (ed.) *Law, Science and Ocean Management*, (Boston/Leiden, Nijhoff, 2007).

<sup>22</sup> See Report No 267 of the Thirteenth ICES Dialogue Meeting: Advancing scientific advice for an ecosystem approach to management: collaborating amongst managers, scientists, and other stakeholders. Dublin, Ireland 26-27 April 2004.

<sup>23</sup> Guidance Document - ICES 2005. Guidance on the Application of the Ecosystem Approach to Management of Human Activities in the European Marine Environment. ICES Cooperative Research Report no 273

<sup>24</sup> Recital 3 of Directive 2008/56/EC of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive) OJ L 164/19, 25.6.2008.

<sup>25</sup> Principle 4 of the World Charter for Nature adopted under UNGA Resolution, A/RES/37/7, 28 October 1982

such exploitation does not endanger the ecological relationship between the fauna in the marine ecosystem.<sup>26</sup> Importantly, the Convention prohibits changes to the marine ecosystem which are not potentially reversible over two decades.<sup>27</sup>

Reflecting perhaps the un-abiding obsession of States with territory, there is no express mention of the “ecosystems approach” in the 1982 United Nations Law of the Sea Convention which provides the framework for the management of all ocean uses. As is well documented, there are however a number of implicit references to the approach in the Convention.<sup>28</sup> For instance, the preamble points out that the problems of ocean space are closely interrelated and need to be considered as a whole. Similarly, the Convention mandates a science based approach to decision-making regarding uses and conservation of the marine environment. Examples include the express obligation placed on States under the Convention to take into account the effects of fishery management measures on associated or dependent species. Similarly, States Parties to the Convention must adopt fisheries management measures on the basis of the best scientific evidence available and generally recommended international minimum standards.<sup>29</sup>

At the global level, the 1992 Rio Declaration places an obligation on States to cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem.<sup>30</sup> Specific reference is made to the marine environment in Chapter 17 of Agenda 21 which requires states to identify marine ecosystems exhibiting high levels of biodiversity and productivity and other critical habitat areas and to provide necessary limitations on use in these areas, through, *inter alia*, designation of protected areas. In this regard, priority should be given where appropriate to the protection of coral reef ecosystems, estuaries, temperate and tropical wetlands, including mangroves, seagrass beds, as well other spawning and nursery areas.

The ecosystem approach is the primary framework for addressing the three objectives of the 1992 Convention on Biological Diversity (CBD), namely: conservation, sustainable use, and the fair and equitable sharing of the benefits of biodiversity in a balanced way. Considerable progress was made at the fifth meeting of the Conference of the Parties to CBD which adopted operational guidance and recommendations for the application of the 12 principles underpinning the approach in Decisions 5 and 6.<sup>31</sup> These note that:

“The ecosystem approach requires adaptive management to deal with the complex and dynamic nature of ecosystems and the absence of complete knowledge or understanding of their functioning. .... Management must be adaptive in order to be able to respond to such uncertainties

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<sup>26</sup> Adopted on 20 May 1980 , entered into force 7 April 1982, 1329 UNTS47

<sup>27</sup> CCAMLR, Art.II(3)(c).

<sup>28</sup> Y. Tanaka, *A Dual Approach to Ocean Governance*, (Farnham, Ashgate, 2008a and a) pp. 78-82.

<sup>29</sup> Art 119, UNCLOS.

<sup>30</sup> Principle 7 of the 1992 Rio Declaration

<sup>31</sup> COP 5 Decision V/6 and VII/11

and contain elements of "learning-by-doing" or research feedback. Measures may need to be taken even when some cause-and-effect relationships are not yet fully established scientifically."<sup>32</sup>

Much of the heavy-lifting regarding the practical aspects of implementing the ecosystem approach has been undertaken by international bodies responsible for the management of fisheries. This development had an inauspicious start when specific reference was made to the ecosystem approach in a number of soft law instruments concerning fisheries management which were adopted by international bodies during the 1990s including the 1993 FAO Compliance Agreement and the 1995 FAO Code of Conduct for Responsible Fisheries. The latter set down a broad range of principles and practices for the conservation and management of living aquatic resources and acknowledges the transboundary nature of aquatic ecosystems. Since then, the approach has obtained a solid legal basis in Articles 5 and 6 of the United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks. This was followed by the adoption of the 2001 Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem which has been the source of some controversy and called upon States to develop "guidelines for best practices with regard to introducing ecosystem considerations into fisheries management." Subsequently, this led the FAO to update and revise its 1995 Code of Conduct for Responsible Fisheries in the form of a new manual called "Fisheries management: the ecosystem approach to fisheries." In 2002, at the World Summit on Sustainable Development, further political impetus was added with the adoption of the Johannesburg Plan of Implementation that requires the application of diverse approaches and tools, including the ecosystem approach, to fisheries management by 2010.<sup>33</sup> In response to these initiatives, the ecosystem approach has been applied by several regional fishery management organisations including: the Commission for the Conservation of Antarctic Marine Living Resources; the Commission for the Conservation of Southern Bluefin Tuna; the International Commission for the Conservation of Atlantic Tuna, the Indian Ocean Tuna Commission, the Northwest Atlantic Fisheries Organization, and the North-east Atlantic Fisheries Commission.

In Europe, the 1989 Hague Declaration on the Environment codified the "fundamental duty" of States to protect and preserve ecological systems.<sup>34</sup> More recently, as seen above, the adoption of the 2002 Bergen Declaration by the North Sea Ministers is an important milestone as they agreed to implement the ecosystem approach by identifying and taking action on impacts and pressures which are critical to the protection and preservation of the North Sea. This was followed by the first Joint Ministerial Meeting of the Helsinki and OSPAR Commissions and the adoption of the Bremen Statement which set out detailed plans for implementing the approach under the framework of the HELCOM and OSPAR Conventions.

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<sup>32</sup> CBD Decision 5/6.

<sup>33</sup> Para 30 of the Johannesburg Plan of Implementation.

<sup>34</sup> [http://www.nls.ac.in/CEERA/ceerafeb04/html/documents/lib\\_int\\_c1s2\\_hag\\_230300.htm](http://www.nls.ac.in/CEERA/ceerafeb04/html/documents/lib_int_c1s2_hag_230300.htm)



Additional momentum and understanding of the concept has come from United Nations General Assembly Resolutions on the topic and through the work of interested parties who participated at the seventh meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea (UNICPOLOS).<sup>35</sup> The latter recommended that ecosystem approaches to oceans management should be focused on: “managing human activities in order to maintain and, where needed, restore ecosystem health to sustain goods and environmental services; providing social and economic benefits for food security; sustaining livelihoods in support of international development goals, including those contained in the United Nations Millennium Declaration; and conserving marine biodiversity”. The work of UNICPOLOS was followed by the adoption of two UNGA Resolutions 61/222 and 62/215 which provide a political backdrop to the development of the concept in international law. The former recalls that States should be guided in the application of ecosystem approaches by a number of existing instruments including: the 1982 UNCLOS and its implementation Agreements, the 1992 Convention on Biological Diversity, and the objectives agreed at the 2002 World Summit on Sustainable Development. Moreover, it encourages “States to cooperate and coordinate their efforts and take, individually or jointly, as appropriate, all measures, in conformity with international law, including the Convention and other applicable instruments, to address impacts on marine ecosystems in areas within and beyond national jurisdiction, taking into account the integrity of the ecosystems concerned.”<sup>36</sup> In Resolution 62/215, the UNGA reiterated *its concern* at the “adverse impacts on the marine environment and biodiversity, in particular on vulnerable marine ecosystems, including corals, of human activities, such as overutilization of living marine resources, the use of destructive practices, physical impacts by ships, the introduction of invasive alien species and marine pollution from all sources.” At a more practical level, the Division for Ocean Affairs and the Law of the Sea (DOALOS) has published a useful guide on “Ecosystem Approaches and Oceans” based on the outcome and discussions at the seventh meeting of the UNICPOLOS.

The concept has been advanced by the Global Environment Facility under the auspices of the World Bank that provided financial support to 15 large marine ecosystem projects involving more than 100 countries worldwide. These projects develop capacity and infrastructure for integrated management of marine resources and the environment based upon the ecosystem approach.<sup>37</sup> Apart from multilateral and regional organisations, a number of environmental organisations have been active in developing the ecosystem approach including the WWF which has published a guide to ecosystem-based management for fisheries, and promoted a certification program for marine fisheries under the Marine Stewardship Council.

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<sup>35</sup> Resolution 61/222, para. 119. See also A/61/156.

<sup>36</sup> Para. 119.

<sup>37</sup> See, L. Juda, “Considerations in Developing a Functional Approach to the Governance of Large Marine Ecosystems,” *Ocean Development and International Law* 30 (1999):89–125

## **Normative basis in EU law and policy**

The ecosystem approach is not expressly mentioned in the European treaties governing the establishment and functioning of the EU. Nevertheless, there is a clear duty under the Treaty on the Functioning of the EU to integrate environmental protection into the definition and implementation of EU policies “in particular with a view to promoting sustainable development”.<sup>38</sup>

At a political level, the EU has recorded its commitment to implement the ecosystems approach in line with the 2002 World Summit on Sustainable Development (WWSD) and the Johannesburg Plan of Implementation (JPOI) by 2010.<sup>39</sup> In this context it should not be forgotten that the EU and the Member States are international actors in their own right and party to many of the international agreements mentioned above which provide a legal basis for its implementation of the ecosystem approach including: the 1982 UNCLOS, the UN Fish Stocks Agreement, the 1992 Convention on Biological Diversity. Moreover, representatives of the Commission and the Member States have actively participated in the work of several international organisations which have elaborated the legal and scientific parameters for the implementation of the ecosystem approach. This includes the work of the FAO, COFI, UNICPOLOS, and in the expert consultations which lead to the 2001 Reykjavik Declaration.

At an internal level within the EU, the ecosystem approach is implemented through a number of policies and legal instruments including the European Integrated Maritime Policy, the Marine Strategy Framework Directive and by means of a broad range of measures under the common fisheries policy. Additional impetus for the approach is obtained through the establishment of the NATURA 2000 network under the Habitats and Birds Directives, as well as the promotion of various spatial management tools such as marine spatial planning and integrated coastal zone management. In order to provide some context for the discussion at the end of this paper, it is now proposed to say a little more about each of these initiatives in turn as they clearly demonstrate that concerted action is being taken to implement the approach through the progressive development of EU law as it applies to fisheries, marine living resources, marine biodiversity and marine scientific research.

### **(i) European Integrated Maritime Policy**

In 2007, the Commission published a Blue Paper and an ambitious Action Plan for the adoption of an Integrated Maritime Policy (IMP) by the EU.<sup>40</sup> This followed a period of broad public consultation in

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<sup>38</sup> Art 11 of the Treaty on the Functioning of the EU

<sup>39</sup> Communication from the Commission Halting the Loss of Biodiversity by 2010 — And beyond sustaining ecosystem services for human well-being. COM(2006) 216 final, Brussels, 22.5.2006

<sup>40</sup> An Integrated Maritime Policy for the European Union, COM(2007) 575 final of 10.10.2007

the Member States which highlighted that European regulatory measures ought to be focused on the protection of ecosystems and eco-regions to ensure the sustainable management of the sea and coastal areas.<sup>41</sup> Essentially, the IMP has a number of objectives which are aimed at: promoting the integration of governance structures in the Member States by making them more inclusive and cooperative; building scientific knowledge on the status of the marine environment and the resources that it supports; improving the quality of sector policies such as the transport and the CFP; as well as implementing tailor-made integrated solutions to specific problems while taking into account the characteristics and diversity of the European regional seas. Under the IMP, the Commission has taken a broad range of policy initiatives to address specific issues such as climate change, scientific observation of the ocean and the sharing of data, the international dimension and the role of the EU in multilateral and bilateral relations, economic development, marine spatial planning and maritime surveillance. One of the unique features of the IMP has been the establishment of a unique governance structure within the European institutions, as well as the promotion of national maritime policies in the coastal Member States that reflect the ideals underpinning the IMP. In this regard, the Commission has recommended that national policies in the Member States should be guided by the principles of subsidiarity, competitiveness, sustainable economic development, stakeholder participation, and the ecosystems approach.<sup>42</sup> In 2009, the Commission published a progress report which sets out the achievements of the IMP since its creation in 2007. In September 2010, they brought forward a proposal for a Regulation establishing a programme to support the further development of the IMP.<sup>43</sup>

## **(ii) Marine Strategy Framework Directive**

The ecosystem approach is a core feature of the Marine Strategy Framework Directive (MSFD) which constitutes the environmental pillar of the IMP and may in some respects be viewed as a sister or marine “equivalent” to the Water Framework Directive. Both directives are cornerstones of the European *Thematic Strategy for the Protect and Conservation of the Marine Environment*. They share many similar conceptual features and provide a framework for the implementation of an iterative process leading to adaptive management of human activities that impinge upon the quality of the marine environment.

The MSFD is aimed at protecting the resource base upon which all marine-related economic and social activities depend and this requires all Member States to achieve good environmental status of marine waters by 2020 at the latest. Further to the MSFD, the Commission adopted a Decision on the criteria

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and SEC(2007) 1278 of 10.10.2007: and Commission Staff Working Document, SEC(2007) 1278, Brussels, 10.10.2007. This followed the adoption of the Green Paper on a Future Maritime Policy for the European Union by the Commission on 7 June 2006.

<sup>41</sup> Conclusions from the Consultation on a European Maritime Policy, COM(2007) 574 final, Brussels, 10.10.2007

<sup>42</sup> Guidelines for an Integrated Approach to Maritime Policy: Towards best practice in integrated maritime governance and stakeholder consultation, COM(2008) 395 final, Brussels, 26.6.2008 at 9.

<sup>43</sup> COM (2010) 494 final. Brussels, 29.9.2010.

and methodology to be applied in determining Good Environment Status (GES).<sup>44</sup> Clearly, under these instruments, the concept of “good environmental status” includes the conservation of biodiversity and the maintenance of ecosystem health and integrity. As noted in the preamble of the Directive, applying an ecosystem-based approach to the management of human activities entails giving priority to achieving or maintaining good environmental status in the European marine environment.<sup>45</sup>

Under the Directive, marine regions / sub-regions are established on the basis of geographical and environmental criteria. Each Member State is required by 2012 to develop strategies for sea areas under their sovereignty and jurisdiction and these must contain a detailed assessment of the state of the environment, a definition of "good environmental status" at regional level, as well as the establishment of clear environmental targets and monitoring programmes. Each Member State must then draw up a programme of cost-effective measures by 2015 in coordination with other Member States in their marine region. Prior to the implementation of any new measure there is a requirement to undertake an impact assessment which contains a detailed cost-benefit analysis of the proposed measures. Where Member States cannot reach the environmental targets, the MSFD provides a legal basis for the adoption of EU measures.

The Directive has a number of unusual features. Firstly, it does not envisage the adoption of horizontal management measures at EU level but entails the adoption of operational and implementation measures through the Regional Seas Conventions, including: the OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, the Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea, the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, and the Bucharest Convention on the Protection of the Black Sea against Pollution. Secondly, implementation of the MSFD will bring about a major shift in emphasis in European law-making in so far as maritime regulation and decision-making will no longer be organised exclusively along the lines of sector policies but will be more integrated in form and content.<sup>46</sup> As a consequence, regulatory measures will as a matter of practice focus on mitigating the impacts of particular activities on the wider marine environment and not limited by the maritime boundaries of the Member States.

### **(iii). European Common Fisheries Policy**

The ecosystem approach is now a key feature in the European common fisheries policy (CFP) which is made-up of complex legislation regulating the quantities of fish caught by fishing vessels, the number of vessels which may have access to a fishery, the marketing of fishery products, the enforcement of

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<sup>44</sup> Commission Decision of 1 September 2010 on criteria and methodological standards on GES of marine waters, OJ L 232/14, 2.9.2010.

<sup>45</sup> Recital of Directive 2008/56/EC

<sup>46</sup> European Commission Communication. Guidelines for an Integrated Approach to Maritime Policy: Towards best practice in integrated maritime governance and stakeholder consultation. COM (2008) 395 final. Brussels, 26.6.2008, at p.8.

the law, and rules pertaining to the international dimension of the policy.<sup>47</sup> The policy has a long and controversial history. Suffice to note here that one of the longstanding criticisms is that it was traditionally based on single species management and has been slow to embrace new legal principles such as the precautionary principle. That being said, the EU has taken the lead at a global level in implementing the ecosystem approach to fisheries management.<sup>48</sup> This development may be traced back to the review of the CFP in 2002 and the adoption of a new Basic Fishery Management Regulation which provides that one of the aims of the policy is to minimise the impact of fishing activities on marine eco-systems and to ensure the progressive implementation of an ecosystem-based approach to fisheries management.<sup>49</sup>

Much of the momentum for the implementation of the ecosystem approach by means of the CFP has come from the scientific work undertaken by ICES, the various expert working groups within the Commission, as well as international bodies such as the FAO.<sup>50</sup> From a geographical perspective, implementation through European law concerns not only sea areas under the sovereignty and jurisdiction of the Member States but also includes areas beyond national jurisdiction including the areas of the high seas under the remit of Regional Fisheries Management Organisations or sea areas under the sovereignty and jurisdiction of third countries with which the EU has negotiated bilateral fisheries partnership agreements.<sup>51</sup> In 2008, the Commission published a Communication on the role of the CFP in implementing an ecosystem approach to marine management.<sup>52</sup> The Commission's understanding is that:

“an ecosystem approach to fisheries management is about ensuring goods and services from living aquatic resources for present and future generations within meaningful ecological boundaries. Such fisheries management will strive to ensure that benefits from living marine resources are high while the direct and indirect impacts of fishing operations on marine ecosystems are low and not detrimental to the future functioning, diversity and integrity of these ecosystems.”<sup>53</sup>

According to the Communication, the Commission has identified two tasks for fisheries management. Firstly, “to keep direct and indirect impacts of fisheries on marine ecosystems within bounds in relation to healthy marine ecosystems and ecologically viable fish populations by including all the knowledge we have about the interactions between fisheries and marine ecosystems in decisions under the CFP”.

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<sup>47</sup> See R.R. Churchill, D. Owen, *The EU Common Fisheries Policy* (Oxford, OUP, 2010); which follows on from the acclaimed study by R.R. Churchill, *EEC Fisheries Law* (Martinus Nijhoff, Dordrecht, 1986).

<sup>48</sup> See R.R. Churchill, D. Owen, *The EU Common Fisheries Policy* (Oxford, OUP, 2010) at p.76.

<sup>49</sup> Article 2 of Council Regulation 2371/2002.

<sup>50</sup> Guidance Document - ICES 2005. Guidance on the Application of the Ecosystem Approach to Management of Human Activities in the European Marine Environment. ICES Cooperative Research Report no 273

<sup>51</sup> COM (2008) 187, p.2

<sup>52</sup> Communication from the Commission COM(2008) 187.

<sup>53</sup> *Ibid*

Secondly, to ensure that actions taken in fisheries are consistent with and supportive of actions taken under the Marine Strategy and Habitats Directives.

Several proactive regulatory measures have been adopted under the CFP to give effect to the ecosystem approach. Most notably, these include legislation underpinning the establishment of participatory governance structures for stakeholder consultation – the Regional Advisory Councils.<sup>54</sup> Measures aimed at reducing fishing pressure to sustainable levels through the adoption of long-term management plans based on multiple sustainable yield (MSY) concepts and ecosystem considerations for specific fisheries including North Sea herring, northern hake, all cod stocks in EU waters, and bluefin tuna in the International Commission for the Conservation of Atlantic Tunas (ICCAT) area. Other elements with an environmental focus are the protection of habitats and sensitive species under the Habitats Directive such as the deep water coral habitats to the west of Ireland and special measures to protect *Posidonia and mærl beds* in the Mediterranean Sea. Soft law measures include the adoption by the Commission of Action Plans to protect sharks in 2008 and sea-birds in 2009. Similarly, the adoption of a regulation aimed at reducing unintended by-catches of sea mammals by making the use of electronic devices (pingers) compulsory on gill nets, as well the prohibition on fishing of sandeel in certain parts of the North Sea to protect populations of seabirds, are all focused in integrated ecosystem considerations into the CFP. Importantly, measures for the implementation of the ecosystem approach are not limited to EU waters but include the adoption of a regulation on the protection of vulnerable marine ecosystems from the adverse impacts of bottom fishing gears in areas of the high seas not covered by a Regional Fishery Management Organisation.<sup>55</sup> The EU was the first regional entity to adopt such an implementation measure following a UN Resolution on the subject and this perhaps illustrates the influence that the international multilateral process is having on ensuring that the ecosystem approach is implemented by means of EU law. At an internal level within the EU, there has been considerable financial support from the European Fisheries Fund for the development of fishing methods and technologies with a low impact on ecosystems. In this context, one of the most controversial practices in EU fisheries management is the prohibition on discarding unwanted catches. This practice is not consistent with the ecosystems approach to fishery management and the Commission brought forward proposals in 2008 to eliminate the practice of discarding on an incremental basis, fishery by fishery over time.

A number of EU research initiatives are focused in delivering the scientific data and information that is necessary to put into action the adaptive management process that is necessitated by the ecosystem approach. Of particular importance in this regard is the amendment of the Data Collection Regulation to cover the collection of data which can underpin the selection of indicators relating to ecological

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<sup>54</sup> R. Long, “The Role of Regional Advisory Councils in the European Common Fisheries Policy: Legal Constrains and Future Options” (2010) *The International Journal of Marine and Coastal Law*, 25(3), pp. 289-346

<sup>55</sup> Council Regulation No 734/2008 of 15 July 2008 on the protection of vulnerable marine ecosystems in the high seas from the adverse impacts of bottom fishing gears, OJ L/201/8 of 15.07.08.

impacts of fisheries.<sup>56</sup> The first set of indicators to monitor the fisheries impact on the ecosystem has been selected under CFP and several major research programmes are underway which will augment the work of ICES and the Scientific, Technical and Economic Committee for Fisheries (STECF) in providing advice on the interaction between fisheries and ecosystems.<sup>57</sup> One such project is the European Seventh Framework Programme project *Options for Delivering Ecosystem-Based Marine Management* which is evaluating the various management options for delivering the objectives of the Marine Strategy Framework Directive, the Habitats Directive, the European Commission Blue Book, as well the Guidelines for the Integrated Approach to Maritime Policy.<sup>58</sup>

On the whole, all of these developments are indicative of the commitment of the EU to implement the approach in a comprehensive and thorough fashion. Nonetheless, one recent authority has suggested that the range of measures adopted by the Commission “has the feeling of an *ad hoc* amalgam of things that fit with the ecosystem approach, rather than representing the strategic approach of the task at hand”.<sup>59</sup> On the other hand, it should also be pointed out that these measures have the full support of the Council who have called upon the Commission to continue implementing and to develop the ecosystem approach to management of the marine environment and wishes to see the approach continue to serve as a guide for the preparation of new initiatives under the CFP.<sup>60</sup>

From a legal perspective, the CFP is particularly well suited to the implementation of the ecosystem approach as the Court of Justice have long since upheld that the management of fisheries is an exclusive European competence and this now is now codified on the Treaty of the Functioning of the EU since the ratification of the Lisbon Treaty.<sup>61</sup> European competence to adopt regulatory measures is a pre-requisite for the implementation of the ecosystems approach as fish stocks and ecosystems cover wide geographical areas and cannot be managed by individual Member States acting in isolation.

The importance of achieving coherence between the various legal instruments underpinning the CFP and those aimed at implementing the broader maritime policy has been emphasised by the Commission on a number of occasions as overfishing has rendered marine ecosystems more vulnerable to climate change and this has led directly to further degradation of the marine environment from biodiversity loss. The first task of applying an ecosystem approach to fisheries management in the EU is to return fishing activity to sustainable levels. The size of this task and the case supporting the implementation of the ecosystem approach from a scientific perspective appears to be unequivocal. The current deplorable status of European fisheries is described in the 2009 Green Paper as eroding their own

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<sup>56</sup> Council Regulation (EC) No 199/2008 of 25 February 2008 concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy, OJ L 60/51/1 of 5.03.2008.

<sup>57</sup> See [http://cordis.europa.eu/fp7/home\\_en.html](http://cordis.europa.eu/fp7/home_en.html)

<sup>58</sup> See <http://www.liv.ac.uk/odemmm/>

<sup>59</sup> R.R. Churchill, D. Owen, *The EU Common Fisheries Policy* (Oxford: Oxford University Press, 2010).

<sup>60</sup> Council Conclusion 12769//08, Brussels, 8 September 2008.

<sup>61</sup> Arts 38-44 of the Treaty on the Functioning of the EU.

ecological and economic basis. The Commission has identified several structural failings with the CFP in the Green Paper and the policy will be subject to reform in 2011.<sup>62</sup> At the time of writing, it is anticipated that ecosystem management will be at the heart of the revised policy when a new basic management regulation is adopted for European fisheries late next year.

#### **(iv). Habitats and Birds Directives**

The Habitats and Birds Directives are aimed at the maintenance of biodiversity and contribute to the general objective of sustainable development in EC law. The Habitats Directive seeks to preserve and restore the natural habitats, the wild fauna and flora by obliging Member States to establish a comprehensive network of special areas of conservation (SAC) for endangered and vulnerable species and habitats.<sup>63</sup> The nature network established by the Habitats Directive in conjunction with the Birds Directive is known as *NATURA 2000* and consists of sites of international importance.<sup>64</sup> The Annexes of the Directive list the broad categories of natural habitat types and the specific animal and plant species of Community interest. The establishment of protected areas is an important contribution to the implementation of ecosystem based marine management under the Marine Strategy Framework Directive. The adoption of management measures under the CFP and the protection of sensitive habitats and protected species under the Habitats and Birds Directives pose a major challenge when making the ecosystem approach operational in the Member States. In this regard, it should not be forgotten that any legal restrictions on the activities of fishing vessels with a view to implementing the ecosystem approach can only be taken through the medium of European law.

#### **(v). Maritime spatial planning**

One of the means by which the Commission is implementing the ecosystem approach is through the promotion of Marine Spatial Planning (MSP) and Integrated Coastal Zone Management (ICZM) as planning frameworks for public authorities and stakeholders to coordinate their action with a view to optimising the use of marine space under the sovereignty and jurisdiction of the Member States. There have been a number of important developments in this regard. In 2008, for example, the Commission adopted the "Roadmap on Maritime Spatial Planning: Achieving Common Principles in the EU" which sets down ten key principles and seeks to promote the development of a common approach among Member States in the implementation of MSP at national and EU level. Since then the Commission has launched two preparatory actions in the Baltic Sea and in the North Sea / North-east Atlantic. These aim to develop the cross-border cooperation aspects and economic benefits of MSP. In addition, they have commissioned a study on the potential of MSP in the Mediterranean Sea. The Commission

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<sup>62</sup> Green Paper, Reform of the CFP, COM(2009)163 final, Brussels, 22.4.2009, p.8

<sup>63</sup> Art 2(1) of Directive 92/43/EEC.

<sup>64</sup> Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds, O.J. L 103/1, 25.04.1979.



have since suggested that MSP can drastically improve the way we manage our maritime spaces and preserve their ecosystems.<sup>65</sup>

#### **(vi). Integrated Coastal Zone Management**

ICZM is aimed at integrating policies, sectors and interests into the planning and management of human activities to achieve sustainable development in the coastal zone. In 2002, the European Commission adopted a Recommendation on integrated coastal zone management and this is now perceived as an important instrument in delivering the EU's Integrated Maritime Policy. At the end of 2008, the Council signed the Protocol on Integrated Coastal Zone Management under the Barcelona Convention. This was followed in 2009, by a support project (the OURCOAST initiative) to stimulate the sharing of best coastal planning and management practices in the Member States. The 2009 Commission White Paper on adapting to climate change provides for European guidelines on adaptation in coastal and marine areas. In addition, the Commission is planning a further proposal to strengthen the ICZM Recommendation in 2011 to further support comprehensive and effective climate strategies for coastal zones.

#### **Making the ecosystems approach work in practice**

Over a decade ago, a leading legal scholar at Berkeley University noted that there was an extraordinary amount of controversy and some confusion in the United States about the political, scientific, legal and administrative aspects of implementing the ecosystem approach in the marine environment.<sup>66</sup> As is evident from the brief review undertaken above, this did not appear to stymie the subsequent development of the ecosystem approach as a normative concept in international law. What is more, the approach has been implemented with varying degrees of success by a number of regional management organisations such as CCAMLR.<sup>67</sup> Clearly, however, implementing the ecosystem approach in the European maritime area is a considerably different proposition due to the unique legal order of the EU as a supranational legal entity. That said, EU law on the subject has evolved steadily in recent years and the absence of a universal definition of the ecosystem approach has not proved insurmountable. As seen above, there is now a clear normative basis for its application in a number of secondary legal instruments that have been adopted by the EU institutions. Furthermore, the steady adoption of

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<sup>65</sup> Progress Report on the EU's Integrated Maritime Policy, COM (2009) 540, Brussels, 15 October 2009 at 11.

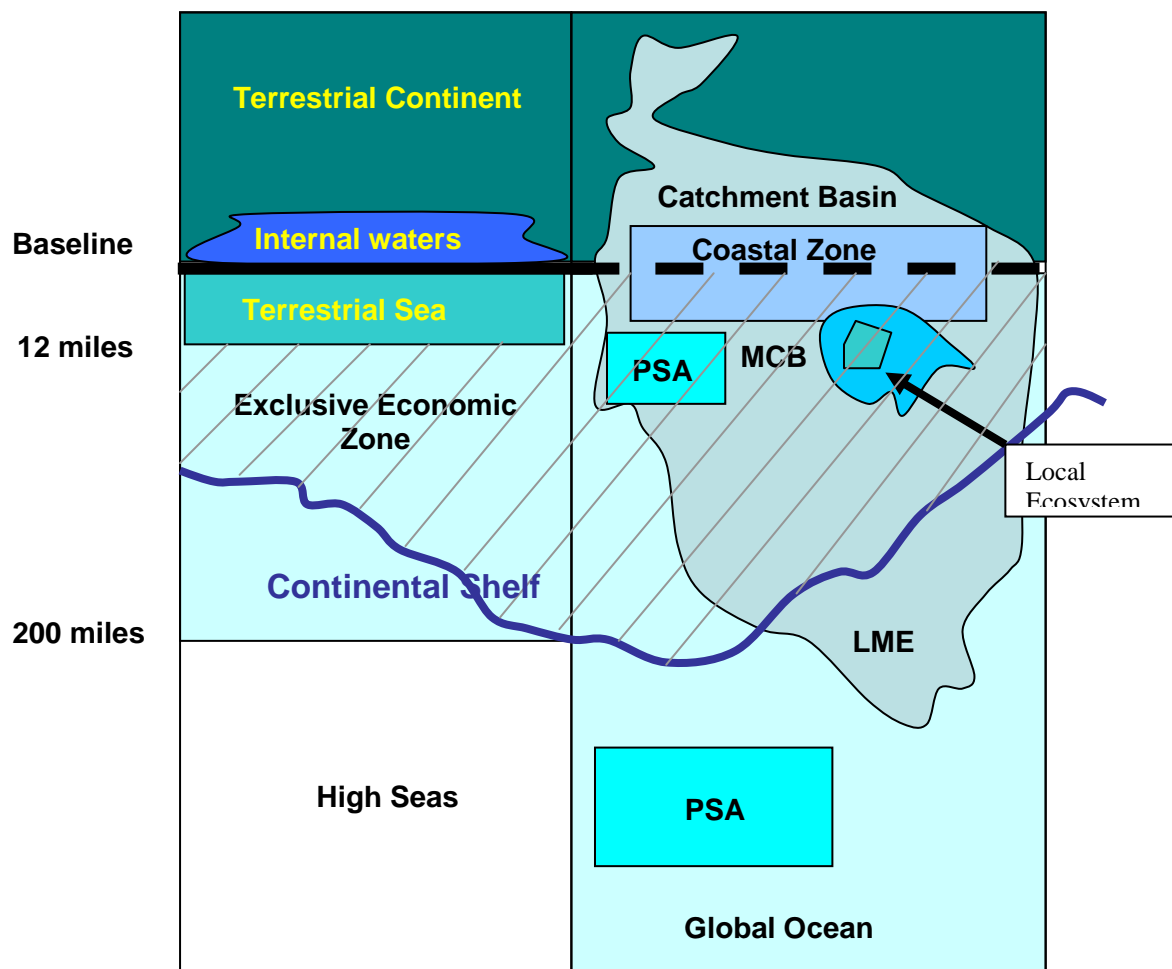
<sup>66</sup> H. Scheiber, From Science to Law to Politics: An Historical View of the Ecosystem Idea and its Effects on Resource Management, 24 *Ecology L.Q.* 631 1997.

<sup>67</sup> Considerable care should however be taken with this example, as I have noted elsewhere: "The application of ecosystems approach is facilitated by two distinctive factors that are unique to the Antarctic marine area. Firstly, the existence of the Antarctic Convergence Current which divides the cold waters of Antarctic from the warmer waters of the Atlantic, Pacific and Indian Oceans and is a natural barrier to delimit the ecology of the region. Secondly, this approach is facilitated by the central position of krill in the Antarctic food chain which links all species in the food chain to varying degrees. See, R. Long, *Marine Resource Law* citing S. M. Kaye, *International Fisheries Management*, at pp.355–375. For a critical view on the success of CCAMLR see C. Redgwell in A. Boyle, D. Freestone, *International Law and Sustainable Development*, Chapter 9.

secondary legislation demonstrates a clear response by the EU to fulfil the commitment given at the 2002 World Summit on Sustainable Development to apply an ecosystems approach to oceans management by 2010. Despite this progress, there remain several obstacles to applying the concept in practice in the European maritime area which will be briefly touched upon here.<sup>68</sup>

(i) *Ecosystem Boundaries*

Firstly, as is well known, practical difficulties arise when the boundaries of the ecosystem do not correspond to the maritime jurisdictional zones set down by the Law of the Sea as is evident from Figure 2 below.<sup>69</sup>



Source: Garcia & Hayashi, *Ocean & Coastal Management* 43 (2000) 445-474

These difficulties arise because the physical extent of an ecosystem is based on ecological, rather than political or economic, criteria. The resulting mismatch between ecosystem boundaries and the

<sup>68</sup> On the limitations of the approach in international law, see Y. Tanaka, *A Dual Approach to Ocean Governance*, (Farnham, Ashgate, 2010) pp. 78-82.

<sup>69</sup> See M.H. Belensky, "Management of Large Marine Ecosystems: Developing a rule of Customary International Law" (1985) 22 *San Diego Law Review* 733.

boundaries of the various maritime jurisdictional zones as codified in the 1982 UNCLOS may mean that the rights and duties of various parties vary across the ecosystem. Frequently, these difficulties are compounded by the absence of a single regulatory body with exclusive legal competence to adopt management measures which apply to the entire ecosystem. Significantly, the International Court of Justice has consistently rejected attempts to redraw maritime boundaries in accordance with ecosystem or environmental considerations.<sup>70</sup> As a result, cross boundary cooperation at global and regional levels are essential to implementing the concept in practice. From the perspective of EU law, this problem is mitigated to a certain extent as the European institutions have legal competence in a number of areas to adopt regulatory measures which are transboundary in scope such as fisheries conservation measures under the CFP. This is particularly relevant in light of the ambulatory nature of ecosystem boundaries and the need to adjust the geographical scope of the various regulatory measures that are common to the entire ecosystem from time to time. Moreover, in exercising its exclusive competence with regard to the conservation and management of living aquatic resources, the rule-making powers of the EU extends to concluding agreements with third countries and international organisations.<sup>71</sup> These powers are clearly germane to implementing the ecosystem approach on a regional basis. Indeed, as seen above, the Marine Strategy Framework Directive is predicated on utilising the regional seas institutional structures to deliver on its fundamental objective of attaining good environmental status of all EU marine waters by 2020 at the latest.

*(ii) Scientific Uncertainty*

From a scientific viewpoint, ecosystem processes and functioning may be inchoate and at best may be complex to understand and manage. Indeed, one early study of the subject cast some doubt on the ability of ecologists to agree on what constitutes an ecosystem.<sup>72</sup> This leads directly to the second difficulty which relates to scientific certainty and the availability of scientific data, as well as appropriate programmes for the monitoring of the marine environment. In other words, without appropriate data and monitoring programmes, the ecosystem approach will be impossible to implement successfully in practice. Once again, considerable progress has been made at a European level on this issue with the adoption of Regulation 199/2008 that sets down specific requirements regarding the collection of data on the environmental impact of fisheries on the marine ecosystem. Similarly, the move towards the installation of remote sensing and ocean observation systems will lessen the considerable expense associated with traditional marine environmental monitoring programmes. From a legal perspective, these developments are important in so far as Member States must obtain a comprehensive scientific overview of the current and future status of the marine environment in order to comply with the requirements of the MSFD.<sup>73</sup> Fortunately, the EU is developing an infrastructure

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<sup>70</sup> *Gulf of Maine Case* 1984 ICJ 246; *Jan Mayen Case* (1993) ICJ Reports 38.

<sup>71</sup> Joined Cases 3, 4, 6/76, *Kramer* (1976) ECR 1279.

<sup>72</sup> R.V. O'Neill, D.L. DeAngelis, J.B. Waide and T.F.H. Allen, *A Hierarchical Concept of Ecosystems*, (Princeton, Princeton University Press, 1986) at 4.

<sup>73</sup> Art 5 of Directive 2008/56/EC. Indeed, one of the reasons leading to the adoption of the MSFD was the long-standing failure of the Member States to undertake adequate scientific monitoring of the status

for the sharing and transmission of spatial information and environmental data (the Inspire Directive) which will be particularly useful in ensuring that Member States adopt a transparent and consistent approach to implementation of their obligations under the MSFD.<sup>74</sup> The Public Sector Information Directive also facilitates access and re-use of all public information. Moreover, the development of the new European Marine Observation and Data Network (EMODNET) and the establishment of a Common Information Sharing Environment are fundamental to implementing the ecosystem approach at a regional sea level.

In reality, considerable practical difficulties have to be overcome in some Member States where, for example, bathymetric data is protected under national security law as a military secret - either for all sea areas under national jurisdiction such as Finland, or in some parts of them such as France.<sup>75</sup> In such cases public acquisition is either forbidden or there may be a restriction on the scale or resolution of the data that is made available.<sup>76</sup> However, a number of initiatives have been taken at an EU level to support the availability of scientific data and appropriate programmes for the monitoring of the marine environment. For instance, as part of their programme to support the further development of the Integrated Maritime Policy, the Commission has brought forward a legislative proposal which will provide financial support aimed at fostering inter alia: “the development of a comprehensive and publicly accessible marine data and knowledge base of high quality which facilitates sharing, re-use and dissemination of these data among various user groups and ensures visualisation of maritime information through web-based tools”.<sup>77</sup> This will entail the EU spending close to €130 million per year for the collection of marine data.<sup>78</sup> Under the Global Monitoring for Environment and Security initiative and the EMODNET, electronic access is provided to bathymetric, geological, physical, chemical, biological and habitat data for selected sea basins. The collection of data or “marine observation” remains the responsibility of the Member States and this raises several important issues

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of the ocean environment, as well as the natural resources and ecological systems that it supports. See Communication from the Commission to the Council and the European Parliament, Thematic Strategy on the Protection and Conservation of the Marine Environment, COM(2005)504 final, Brussels, 24.10.2005, p.4.

<sup>74</sup> Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (Inspire) OJ L 108, 25.4.2007, p. 1. Under Art 19(3) of the Directive, Member States are obliged to provide the Commission with access to the data and information acquired during the initial assessment in order to fulfil its tasks under the Directive. Such information must also be made available to the European Environment Agency for the performance of its tasks pursuant to Art 25 of the Directive. The EU is also developing an information sharing system covering all water-related reporting requirements, ranging from drinking water to urban waste-water treatment. This will include reporting requirements under the MSFD, see, P. Gammeltoft, *General Overview of the MSFD*, available at: <http://www.ifremer.fr/2012MarineTargets/actes/Gammeltoft.html>

<sup>75</sup> See Commission Staff Working Document, *Building a European marine knowledge infrastructure: Roadmap for a European Marine Observation and Data Network*. SEC(2009) 499 final. Brussels, 7.4.2009, p. 19.

<sup>76</sup> *Ibid*

<sup>77</sup> Proposal for a Regulation establishing a Programme to support the further development of an Integrated Maritime Policy COM(2010) 494 final. Brussels, 29.9.2010.

<sup>78</sup> €40 million for fisheries data, €70 million for space data and €18.5 million per year for assembling data through the Global Monitoring for Environment and Security initiative and under the proposed financial regulation for integrated maritime policy.

regarding the efficacy of national data acquisition programmes and the legal aspects of marine scientific research in the EU.<sup>79</sup>

(iii) *Institutional structures*

The third challenge to implementing the ecosystem approach is the need for sophisticated institutional structures at national level that are capable of undertaking the diverse range of management, monitoring, and enforcement tasks that are associated with marine resource management.<sup>80</sup> As succinctly stated in the European Commission's Guidelines for an Integrated Approach to Maritime Policy:

“Decision-making may no longer be organised exclusively along the lines of traditional sectoral policies, but needs to reflect the large, transfrontier marine ecosystems which must be preserved in order to maintain the resource base of all maritime activities”.<sup>81</sup>

In practice, however, there are few mechanisms and institutional structures in the Member States which facilitate cross-sectoral decision-making as envisaged in the European Maritime Policy. Some Member States such as France, Germany, Portugal, the Netherlands and Slovenia are moving towards the establishment of more integrated structures but several others such as Ireland do not have appropriate administrative or governance structures at a national level which are capable of the integrated management of maritime space with a view to protecting and preserving ecosystems. For this reason, the enactment of the Marine and Coastal Access Act 2009 in the UK is a welcome milestone as it reflects a new approach to marine resource management which is fully consistent with the ecosystem approach. In particular, it establishes a “one-stop shop,” the Marine Management Organisation, which has an extraordinary range of functions pertaining to inter alia: marine planning, offshore licensing, nature conservation, and fisheries management. Importantly, it addresses one particular obstacle in implementing the ecosystem approach which is the absence of a central body in the Member State with responsibility for law enforcement by providing a statutory basis for the appointment of officers with extensive enforcement powers in relation to licensing, nature conservation and fishing in the marine area.

## **Conclusions**

The 2004 Report of the UN Secretary-General on the Oceans and the Law of the Sea notes that the ecosystem approach is one of the most important concepts of environmental and natural resource

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<sup>79</sup> See R. Long, Legal Aspects of MSR in the EU (forthcoming conference paper, Globalisation and the law of the Sea, Washington DC, 1-3 December 2010).

<sup>80</sup> Project Hermes, “Promoting an ecosystem approach to the sustainable use and governance of deep-water resources”, *Oceanography*, vol. 22(1), 2009

<sup>81</sup> COM(2008) 395 final. Brussels, 26.6.2008.

management of the past two decades.<sup>82</sup> In contrast, several academic commentators have taken a less assertive view and have suggested that the ecosystem approach is a policy tool and not a positivist legal concept *per se*.<sup>83</sup> Whatever the correct view, considerable progress has been made by the EU over the past decade to move the concept forward into the real world of practical implementation through the medium of secondary legislation. As seen above, this has been achieved by the incremental incorporation of ecosystem considerations into a number of EU policies as well as through the adoption of a specific instrument, the Marine Strategy Framework Directive. These efforts have been facilitated by the unique legal nature of the EU as a supranational regional integration organisation with the capacity to adopt measures that are legally binding on the Member States in specific policy areas such as fisheries, as well as the power to conclude international agreements in areas where it exercises exclusive jurisdiction. These features will help the EU overcome some of the problems encountered due to the open and ambulatory nature of ecosystem boundaries. That being said, there is little doubt but that the implementation of the ecosystem approach is placing new demands on national data collection and marine environmental monitoring programmes, as well as on the institutional structures in the Member States that are responsible for offshore licensing and planning. At the time of writing, it remains to be seen if the EU initiatives highlighted in this paper will be sufficient to overcome the difficulties encountered in implementing the concept in practice by the Member States. Furthermore, assuming that science can provide the right answers, the ultimate test of the ecosystem approach will be how well it delivers sustainable ocean use and conserves functioning ecosystems in the interest of the common good.

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<sup>82</sup> Report of the Secretary-General, Oceans and the Law of the Sea, A/59/62/ Add.1 18 August 2004, p. 63, para. 244.

<sup>83</sup> Wang 35(2004) *ODIL* 41; Juda 30 (1999) *ODIL* 89.