



---

## COASTAL AND MARINE SPATIAL PLANNING

**Özgür Özkan**

Maltepe University, Faculty of Architecture and Design, Istanbul/Turkey. Email: [ozgurozkan@maltepe.edu.tr](mailto:ozgurozkan@maltepe.edu.tr)

---

### ABSTRACT

At the present day, the non-stop regular uses of coastal and ocean areas leads to a need, as to consider the range of both usages and users entirely.

Not only their economic contribution to communities as habitats and ecosystems but also more wide-ranging access must be taken in the course of decision making and planning processes. This approach is known as Coastal and Marine Spatial Planning, of CMSP.

Coastal and marine spatial planning is a scientific and collaborative process which is used to manage sustainable resources, activities, and interests among various coastal and ocean sectors and users.

The transformation and use of coastal and marine systems caused a hunger for unitary movement as management and planning; coastal and marine spatial planning arose as one of these efforts.

Coastal and Marine Spatial Planning is merely a process that helps planners to make better decisions about the usage of oceans. Coastal and marine spatial planning prepares decision making powers with maps and accurate information about the environmental characteristics, geography, and present utilization of the sea.

Experts define coastal and marine spatial planning as a comprehensive, integrated, ecosystem-based planning process deliberately deviating from the single-sector, single-purpose approach that characterizes ocean and coastal management historically. In recent years, an ascending number of scientists, policy analysts and maritime science and policy experts prepare this planning approach as a way to protect marine resources, solve conflicts of use, improve inter-agency coordination and collaboration, and prepare for future ocean uses.

---

**Keywords:** coastal planning, marine planning, coastline design

### INTRODUCTION

Recently, there has been an apparent increase in demand for coastal and marine resources. Established uses grow more intensively, others are shifting to new places, but still, entirely new forms of resource use emerge that challenge the way we look at the shore and the sea. The latter is mainly seen in the marine environment. Offshore wind farms, port infrastructure or oil terminals are examples of large-scale marine infrastructure developing alongside more traditional, transient marine resource utilization types. Many of these changes are of specific interest in European regional seas such as the Mediterranean, the North Sea, the Baltic or the Black Sea, which attracted the attention of politicians and resource managers at the regional, national and international levels and brought additional pressure. On climate change, global economic development and demographic change.

At the present day, the non-stop regular uses of coastal and ocean areas leads to a need, as to consider the range of both usages and users entirely.

Not only their economic contribution to communities as habitats and ecosystems but also more wide-ranging access must be taken in the course of decision making and planning processes. This approach is known as Coastal and Marine Spatial Planning, or CMSP.

Coastal and marine spatial planning is a scientific and collaborative process which is used to manage sustainable resources, activities, and interests among various coastal and ocean sectors and users.

The transformation and use of coastal and marine systems caused a hunger for unitary movement as management and planning; coastal and marine spatial planning arose as one of these efforts.

Climate change is the overwhelming marine and coastal ecosystems all over the world, revealing in warming sea temperatures and air, redoubling rising sea levels and coastal storms.

The existential and projected effects of ocean acidification and climate change climate change need to be integrated into planning processes to ensure long-term achievement.

Coastal and Marine Spatial Planning is merely a process that helps planners to make better decisions about the usage of oceans. Coastal and marine spatial planning prepare decision making powers with maps and accurate information about the environmental characteristics, geography, and present utilization of the sea.

Then what is Coastal and Marine Spatial Planning?

- What can it do?
- Will it just be more regulations and rules to follow?
- Will it change the way people use the ocean?
- Will it create specific areas off-limits?
- Will people have to do something?

Coastal and marine spatial planning refers to a wide-ranging planning access that considers all of the natural processes, resources, and human uses of a concrete area of ocean or coastal space in order to identify areas that are relevant for particular purposes, resolve disagreements between current and future applications, and achieve an extent of development, conservation, and other goals (Douvere, 2008; Ehler & Douvere, 2009).

Experts define coastal and marine spatial planning as a comprehensive, integrated, ecosystem-based planning process deliberately deviating from the single-sector, single-purpose approach that characterizes ocean and coastal management historically. In recent years, an ascending number of scientists, policy analysts and maritime science and policy experts prepare this planning approach as a way to protect marine resources, solve conflicts of use, improve inter-agency coordination and collaboration, and prepare for future ocean uses (Young, O. R., Osherenko, G., Ekstrom, J., Crowder, L. B., Ogden, J., Wilson, J. A., Peach, R. E., 2007).

A considerable part of the world population needs the sea to survive. At the beginning of the 21st century, about 80% of the world's largest population centers are located in coastal areas (Waterman, 2008).

The sea is essential, including the seabed, the seabed and the coastal strips, energy, mass, and information, for trade routes, pipelines, and cables for climate transportation regulations, food and water resources (both source and shipwreck), energy, sand and gravel extraction and many other sources (Waterman, 2008; European Community, 1999).

It is also a preferred site for economic activities (e.g., ports and port-related activities), citizens' residences and recreation. Apart from the importance of humanity in general, the seas and beaches are probably more critical to nature. Countless species and it has developed valuable ecosystems in the marine and coastal environment which are connected broadly due to the conservation of existing natural resources, the vulnerability and the fact that the marine environment is part of the vast territory of a large number of countries.

Coastal and marine spatial planning bring an approach to directing and managing human activities with features specific to the marine environment, from maritime environment, land, city, and district general planning, to the development of state and national park master plan. Coastal and marine spatial planning processes vary, but often include the following vital elements (Ehler, C., and Douvere, F., 2009):

- **Acquirements for Decision-Making;** Gather and use geospatial, socioeconomic and other information related to coastal and ocean ecosystems and services; Coastal and Marine Spatial Planning provides the best available information on human resources and natural resources on and around the sea floor, water column and its surface for planning geographic areas that take into account the marine ecosystem boundaries.
- **Corporate Outline:** Establish useful coordination frameworks to provide data and access to institutions and formulate plans and other products of Coastal and Marine Spatial Planning processes.
- **Designs or Accommodation Criterion:** Developing a forward-looking policy or planning to address multiple uses, before specific projects, through regular updates to reflect changing conditions and new information.
- **Community and Shareholder Participation:** To engage citizens and stakeholders from various sectors with responsible state and federal institutions in a transparent public process; This process developed through the use of decision support tools that allow participants and the public to evaluate the tradeoffs between alternative scenarios and their uses (Carter, J., L. Engeman, D. Fulton, J. Hennessey, M. Hill, C. Hoffman, P. Klarin, and Others, 2009).

In the marine environment, as in the sea, the implementation of the planning process in advance can provide ecological, economic and social benefits. For example, Coastal and Marine Spatial Planning encourage the integration of data and technological advances in data sharing and mapping to ensure a more comprehensive definition and prioritization of natural or ecologically critical areas that require conservation.

### **Worldwide Coastal and Marine Planning Examples**

Coastal and Marine Spatial Planning can facilitate sustainable economic growth. For instance: In the Netherlands, a preferred sand mining area has been determined in the regional sea. The allocation of this use by spatial planning at sea will allow both the private sector and the government to bring sand closer to the shore at less cost, mainly when used for coastal adaptation to predicted climate change over the next 20 years.

In Germany, Environmental assessment for a wind farm permit amounts to about € 1 million (the US \$ 1.5 million) to prepare. Because the federal government has prepared a Strategic Environmental Assessment for the marine spatial plan with priority areas for wind farms, the costs of preparing and reviewing an environmental assessment for each proposed in the Priority Wind Farm Area will be reduced or avoided.

Coastal and Marine Spatial Planning also provides a framework for comprehensively calculating the scope of human uses affecting marine ecosystems and provides a system for better understanding and addressing the cumulative impacts of human uses on marine ecosystems. While Coastal and Marine Spatial Planning require preliminary investment in research and information, stakeholder processes and other activities, it is aimed to reduce costs and increase efficiency for public resources and marine users.

For example, the reason why the Rhode Island State's proposal to conduct a Coastal and Marine Spatial Planning process was to save time when the US Army Engineers compared the traditional environmental impact reporting process for the positioning of the wind energy project (Rhode Island Coastal Resources Management Council, 2011). The Rhode Island Ocean Special Area Management Plan completed in a two-year period; The corps process was expected to endure five to seven years.

A recent European Union wind power development study has demonstrated that marine site plans, which include guidance or requirements for localization, provide certainty for industrial developers and reduce the cost and proliferation of audit organizations' efforts (Study on the Economic Effects of Maritime Spatial Planning Final Report,2011).

Coastal and Marine Spatial Planning can provide social benefits when local communities, citizens and stakeholder groups can effectively participate in shaping a forward-looking plan that identifies and protects cultural, social and spiritual values related to ocean uses. Besides, groups can respond to specific project proposals through traditional public participation forums (Intergovernmental Oceanographic Commission and Man and the Biosphere Programme, 2009). The claim is not to say that Coastal and Marine Spatial Planning replaces single sector policies and plans, but it provides a way to better coordinate and integrate these frameworks.

California does not start with a blank page for applying this approach to the marine environment. Coastal and Marine Spatial Planning will be built on the foundations built in the late 1960s around the community, such as in California and the coastal zone management (led by the Bay Conservation of San Francisco and Development Commission and the California Coastal Commission) and field-based management (exemplified by the establishment of National Marine Corps covering state and federal waters) (California Coastal Commission, 2015). These management frameworks are designed to address the shortcomings of existing regulatory programs for individual sectors such as fishing, coastal development, oil and gas development, maritime transport and military training (California Coastal Commission, 2007).

### **Coastal and Marine Spatial Planning in the Other States and Overseas**

In many cases, a number of US states and foreign countries, encouraged by overseas ocean energy offers, have begun to implement varying degrees of Coastal and Marine Spatial Planning. In the United States, states have adopted or planned to adopt Coastal and Marine Spatial plans as part of federally approved state coastal management programs.

### **Rhode Island Ocean Special Area Management Plan (OSAMP)**

- Areas of use defined for renewable energy development and other activities in the 1,547 square mile zone of the state's offshore waters and protects current uses and habitats, including commercial fishing; critical habitats for fish, marine animals and birds; sea transport; and more" (McCann, J.,2009).
- Climate change mitigation and Rhode Island agencies support coordinated management efforts for harmonious management between federal agencies and community members (Rhode Island Coastal Resources Management Council, 2010).
- The offshore wind farm was the million 'key driver' of the plan (Rhode Island Economic Development Corporation,2009), and the developer agreed to contribute up to \$ 3.2 million to provide plans (Payne, K., 2010).

### **Oregon Territorial Sea Plan (TSP) Renewable Ocean Energy Amendment**

- The Territorial Sea Plan has been amended in response to wave energy proposals detailed guidance for state and federal agencies in managing the uses of Oregon's territorial sea.
- The first phase of the changes in 2009 was policies for ocean renewable energy development, review and evaluation standards, coordination process and operational plan requirements 2009. The second phase, which is currently executed, is a public process for conducting spatial analysis of the present ocean "and uses and ecological resources to identify and identify specific areas in the regional seas that may be suitable for the development of renewable energy." (Department of Land Conservation and Development Coastal Management Program, 2011).

### **Massachusetts Ocean Plan**

- Wind energy proposals encouraged the launch of the Massachusetts Ocean Management Initiative in 2003-2004, which developed proposals for in a comprehensive approach to managing ocean resources in and formed the basis for the Oceans Act of 2008.
- The passage of the 2008 Massachusetts Ocean Act has led to the development of a 2009 plan that supports the management of human use, including offshore wind power generation and the protection of ecologically significant areas in Massachusetts waters (Massachusetts Executive Office of Energy and Environmental Affairs, 2015).

### **Great Barrier Reef Marine Park Authority (GBRMPA)**

- The Great Barrier Marine Park Act, 1975, "generated the Great Barrier Reef Marine Park Authority to prepare a plan for the protection of the environment, biodiversity, and heritage values of the Great Barrier Reef Area (Commonwealth of Australia,1975).
- Great Barrier, Reef Marine Park Authority, has been identified where the human uses, such as tourism, fishing, recreation, transport, aquaculture, screening, and other activities, are divided into regions for various levels of conservation and are in line with marine conservation objectives (Great Barrier Reef Marine Park Authority,2009).

### **United Kingdom Marine Spatial Planning**

- The Maritime and Coastal Access Act 2009 launched a maritime planning system, managed by a new Maritime Business Organization, which combines marine fisheries management,

energy and climate change, and transport responsibilities of other agencies, and has created a new maritime spatial planning program for the United Kingdom.

- The 2011 Maritime Policy Declaration is the framework for the UK, Scotland, Wales and Northern Ireland to prepare Marine Plans, ensure consistency throughout the UK and lead to new maritime licenses and other authorization systems 2011 (Department for Environment Food and Rural Affairs,2011).
- Protection and environmental concerns and offshore wind offers accelerated UK's Coastal and Marine Spatial Planning policy, legislative and program initiatives (UNESCO,2010).

### **England & Wales**

- In the UK, shoreline management plans provide a framework for assessing long-term changes and risks associated with coastal processes, such as tidal models of coastal regulatory authorities, wave height and sea level increases.
- These plans provide strategies to help reduce the risks associated with coastal flooding and erosion in settled and natural environments. Like most maritime management plans, shoreline management plans are not legal.
- In 2006, the UK Ministry of Environment, Food, and Rural Affairs issued shoreline management plans guidance document to help planners identify risks of concern, including climate-driven changes such as sea level rise (Defra, 2006).
- The guidance document also recommends that planners protect the environmental impacts (both positive and negative) of policy options on habitats, species, public health, cultural heritage, and climate factors, protecting them against ever-changing conditions and changing coastlines.
- Map coastal risks such as floods and erosions and resulting fragilities and management options (e.g., Beach renovation, coastline enhancement) For example, a plan can assess the relative importance of the different parts of the coastline as the source of the sediment for the coastal cell and may be the factor that multiplies the decisions taken to arm the coastline.
- Think nearby (0- 20 years), medium (20-50 years) and long-term (50-100 years) targets, values, and risks. This allows balancing against today's values and long-term feasibility. It is particularly recommended that planners define the long-term effects of climate change (50 to 100 years).

### **Scotland's Orkney Islands**

- The Orkney Islands Council, the Highland Council area in Scotland have partnered on a project to develop a marine spatial plan to guide development, activities, and decisions in Pentland Firth and Orkney Waters. The region, Orkney, Sule Skerry and Sule Stack, includes the coastline on the north coast of Scotland from Stroma and Duncansby Head to Cape Wrath.
- The region includes critical marine and coastal habitats, including seven European Conservation Areas, 29 Scientific Science Zones and three marine protected areas. Pilot Pentland Firth and Orkney Waters Marine Spatial Plan a planning framework was created to guide maritime use and management before the legal regional sea plans for Orkney and the

North Coast Scottish Marine Regions (Pilot Pentland Firth and Orkney Waters Working Group, 2016).

### **Hawai'i Ocean Resources Management Plan**

- The Hawaii Ocean Resources Management Plan (ORMP) provides a framework for coastal and maritime management, taking into account the ecological, cultural and economic needs along the archipelago.
- This plan is updated every five years to combine updated information and additional stakeholder inputs. The 2013 plan outlines 11 management priorities, many of which take climate change into account (Hawai 'i Office of Planning 2013).

### **U.S.A.**

- Coastal and Marine Spatial Planning is a comprehensive, adaptable, integrated, ecosystem-based and transparent spatial planning process based on sound sciences to analyze the current and projected uses of ocean, coastal and Great Lakes areas (White House Council on Environmental Quality Interagency Ocean Policy Task Force, 2010).
- Coastal and Marine Spatial Planning identifies the most appropriate areas for various species or classes of activities to protect critical ecosystem services to reduce conflicts between their use, reduce environmental impacts, facilitate coherent uses, and meet economic, environmental, security and social goals (Stewardship of the Ocean, Our Coasts, and the Great Lakes, 2010).
- A comprehensive, adaptive, integrated, ecosystem-based and transparent spatial planning process based on sound sciences to analyze current and projected uses of the Ocean, coastal and Great Lakes areas. CMSP identifies the most appropriate areas for various species or classes of activities to protect critical ecosystem services to reduce conflicts between their use, reduce environmental impacts, facilitate consistent uses, and meet economic, environmental, security and social goals (New York Department of Environmental Conservation, 2016).

Coastal and Marine Spatial Planning includes regular reviews and updates and can, therefore accommodate social, economic and political conditions and priorities that have changed along with unpredictable ocean uses, science, and technology.

Coastal and Marine Spatial Planning is a proactive spatial-oriented planning process, but there is wide latitude about how policy-makers can produce planning objectives, process steps, and implementation mechanisms. For example, implementation mechanisms may range from voluntary guidelines or agreements that specify priorities in specific areas, to officially authorized management measures, such as shipping lanes, military exclusion zones, and geographically specific fishing offsets.

The Coastal and Marine Spatial Planning seeks to facilitate sustainable economic growth in coastal communities by providing transparency and predictability for the coastal, marine and large lakes industries, transport, public infrastructure and economic investments in related enterprises.

The Coastal and Marine Spatial Planning can support national targets such as national energy trade and security, and provide specific economic incentives (e.g., cost savings and more predictable and faster project implementation) for commercial users (Ernststeins, R. 2010).

Coastal and Marine Spatial Planning aims to improve ecosystem health and services by planning humanitarian uses with the protection of important ecological areas such as high efficiency and biodiversity areas; areas and key types critical to ecosystem function and flexibility; spawning, breeding and feeding areas; areas of rare or functionally vulnerable marine resources; and migrant corridors.

The Coastal and Marine Spatial Planning provides a comprehensive overview of the multi-sector demands that will provide a complete assessment of cumulative impacts. Ultimately aims to protect the areas necessary for the flexibility and protection of biodiversity and healthy ecosystem services to maximize the ability of marine resources to continue to support a wide range of humanitarian uses.

From a social perspective, the Coastal and Marine Spatial Planning will develop opportunities for community and citizen participation in open planning processes that will determine the future of the ocean and the coasts. This integrated participation and coordination should result in a stronger and more diverse ocean and coastal management, economies and communities. Furthermore, the Coastal and Marine Spatial Planning can help managers in their cultural and recreational use, human health and safety, and planning activities to maintain ongoing security (Gubbay, S., 2004).

For example, Coastal and Marine Spatial Planning will help the planning areas identified as necessary for public use and recreation to not be exposed to harmful algae blooms, infectious disease agents or chemical pollution risk.

### **Essential Elements of the Coastal and Marine Spatial Planning**

It is expected that Coastal and Marine Spatial Plans will change from region to region according to specific needs, capacity and issues specific to each region.

A completed Coastal and Marine Spatial Plan will include the following key elements to ensure national consistency between regions and certificates. Scientific data and knowledge as well as relevant traditional information, will support each of these critical elements:

- **The Scope of Regional Overview and Planning Area:** The Coastal and Marine Spatial plan will include a regional view of the planning area. This review will include a description of the ecosystems of the planning area and their chemical, biological, and physical environments; social, human health, security, and economic uses; conservation and ecological considerations, including important flora, fauna and habitats; and other concerns of the region. The Coastal and Marine Spatial Plan will also define the geographical scope of the planning area.

- **Regulatory Context:** The Coastal and Marine Spatial Plan describes regulations, rules, and regulations concerning the implementation of the Coastal and Marine Spatial Planning at all levels of the state. It also explains the basic existing planning processes that can be used or included as part of the regional Coastal and Marine Spatial Plan.

- **Regional Evaluation:** The Coastal and Marine Spatial Plan will include a regional assessment based on environmental, social, economic and other necessary data and information identifying the current and predicted future conditions, uses and characteristics of coastal or ocean areas covered in the Plan. The assessment will include biological, chemical, ecological and physical characteristics of the plan area, ecologically important or sensitive species/habitat/ecosystems and areas of human activities, ecological status or health assessments, as well as cumulative risks, and cumulative effect models. Regional assessment describes how information is used in the planning process and analyzes, and how it is used to help determine management decisions and plan alternatives.

- **Objectives, Strategies, Methods, and Mechanisms for the Coastal and Marine Spatial Planning:** This section will describe the regional proposed strategies and objectives, methods and mechanisms for the Coastal and Marine Spatial Planning for the region. The analysis is the basis for evaluating options and the results of the Coastal and Marine Spatial Plan. Explains spatial determinations for protection and uses at an appropriate scale and includes necessary visual representations. The Coastal and Marine Spatial Plan describes strategies, methods, and mechanisms for integrated or coordinated decision-making, including handling conflicts of use. The Coastal and Marine Spatial Plan will further define the ongoing processes in which the implementation will continue, including mechanisms to ensure that individual co-operative and collaborative decision-making is reviewed regarding consistency with plan priorities and objectives. The Coastal and Marine Spatial Plan will define endless opportunities for stakeholder and public participation. It shall provide the flexibility required to carry out activities and activities for the preparation and response to disasters, emergencies, and similar events. The Coastal and Marine Spatial Plan will also address a regional process to demand variance and change.

- **Compliance Mechanisms:** The Coastal and Marine Spatial Plan will identify mechanisms to improve coordination and co-operation between decision-makers and promote consistency in the interpretation and implementation of existing laws and regulations used for the implementation and implementation of each institution's Coastal and Marine Spatial Plans.

- **Monitoring and Evaluation Mechanisms:** The Coastal and Marine Spatial Plan will identify monitoring and evaluation mechanisms, including a reporting mechanism that will be employed to assess the effectiveness of the Coastal and Marine Spatial Plan and determine where and when changes should be taken into account. As part of evaluation and monitoring, regional planning bodies will define a series of regional performance measures to be used to assess whether the region meets national and regional goals and objectives. Besides, regional planning bodies will participate in the periodic review of regional ecosystem assessments to assess the impact of management actions on economic, ecological and social perspectives to inform the Coastal and Marine Spatial Plan. Monitoring and evaluation will be monitored and constructed after the original regional assessment, consistent with national guidance.

- **Dispute Resolution Process:** The plan explains how to implement the conflict resolution process between partners (May, P. J., Burby, R. J., Ericksen, N. J., Handmer, J. W., Dixon, J. E., Michaels, S., and Smith, D. I. 1996).

## CONCLUSION

In order to best manage the different uses of our oceans and coasts, it is essential to gather precise information about the ocean itself and how it is used.

To do this, as representatives of existing ocean users as commercial and recreational fishers, transport companies, oil drills, and recreational boats will come together with government representatives to report on their use of the oceans.

At the same time, scientists will try to take measurements and map out the physical properties of the ocean, including stream, depth, seabed habitats, and animal populations (Council on Environmental Quality, 2009).

Coastal and Marine Spatial Planning will not: Make too many changes in the daily life of ocean users. Coastal and Marine Spatial Planning will be used primarily by government authorities and organizations to assist in resolving decisions and solving problems. Although there are some new uses in the ocean, sailors, fishermen, transporters, etc. people who are not permitted to make any changes to their existing sanctions and regulations. It is hoped that at the end of the Coastal and Marine Spatial Planning, it will make the permitting and editing process less complicated than it is now.

Coastal and Marine Spatial Planning will not:

- Make “Off-limits” certain parts of the ocean
- Coastal and Marine Spatial Planning is NOT “zoning the ocean.”
- Coastal and Marine Spatial Planning will not cause any part of the ocean to be more restricted.

If such new restricted areas have established under other laws or policies, then marine spatial planning will merely allow these areas located, so that they will have the least impact on other ocean uses.

When properly implemented, Coastal and Marine Spatial Planning will help us manage the growing use of the oceans as smoothly as possible (Clark, J. R. 1996).

## **REFERENCES**

- California Coastal Commission, 2007. "Related Coastal Management Agencies." California Coastal Commission, 11 June 2007.
- California Coastal Commission, 2015. California Coastal Commission Sea Level Rise Policy Guidance: Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs and Coastal Development Permits.
- Carter, J., L. Engeman, D. Fulton, J. Hennessey, M. Hill, C. Hoffman, P. Klarin, and Others, 2009. "Marine Spatial Planning for Renewable Energy on the West Coast: Workshop Report." 7 Oct. 2009.
- Clark, J. R., 1996. Coastal Zone Management Handbook. Lewis Publishers, New York.
- Commonwealth of Australia, 1975. Great Barrier Marine Park Act.
- Council on Environmental Quality, 2009. Interim Framework for Effective Coastal and Marine Spatial Planning.
- Defra, 2014. East Inshore and East Offshore Marine Plans. Department for Environment, Food and Rural Affairs Nobel House, 17 Smith Square London, April 2014.
- Department for Environment Food and Rural Affairs, 2011. "Marine Planning System." The Environment.
- Department of Land Conservation and Development Coastal Management Program, 2011. A Citizen's Guide to the Territorial Sea Plan Amendment Process. Department of Land

- Conservation and Development Coastal Management Program, 2011. Territorial Sea Plan Amendment Process. 15 Apr. 2011.
- Douvere, F., 2008. The importance of marine spatial planning in advancing ecosystem-based sea use management. *Marine Policy*.
- Ehler, C., and Douvere, F., 2009. *Marine Spatial Planning: a step-by-step approach toward ecosystem-based management*. Intergovernmental Oceanographic Commission and Man and the Biosphere Programme. IOC Manual and Guides No. 53, ICAM Dossier No. 6. Paris: UNESCO.
- Ernststeins, R. 2010. Editorial: participation and integration are key to coastal management. DG Environment News Alert Service of the European Commission. *Science for Environmental Policy*, 23 January 2010
- European Community, 1999. *The European Spatial Development Perspective. Towards balanced and sustainable development of the territory of the European Union*. Agreed at the informal Council of Ministers responsible for spatial planning in Potsdam, May 1999. Luxembourg: Office for Official Publications of the European Communities.
- Stewardship of the Ocean, Our Coasts, and the Great Lakes, 2010. Executive Order 13547 - 3 C.F.R. 43023.
- Great Barrier Reef Marine Park Authority, 2009. *Corporate Plan 2010-2014*. Townsville: Great Barrier Reef Marine Park Authority.
- Gubbay, S., 2004. *Marine Protected Areas in the context of Marine Spatial Planning – discussing the links*. A report for WWF-UK, November 2004.
- Hawai'i Office of Planning, 2013. *Coastal Zone Management Program*. Hawai'i Ocean Resources Management Plan.
- May, P. J., Burby, R. J., Ericksen, N. J., Handmer, J. W., Dixon, J. E., Michaels, S., and Smith, D. I., 1996. *Environmental Management and Governance: Intergovernmental Approaches to Hazards and Sustainability*. Routledge, London.
- Intergovernmental Oceanographic Commission and Man and the Biosphere Programme, 2009. Except where noted otherwise, the points that follow are drawn from [http://www.unesco-ioc-marinesp.be/msp\\_faq](http://www.unesco-ioc-marinesp.be/msp_faq) and Ehler, Charles, and Fanny Douvere. *Marine Spatial Planning: a step-by-step approach toward ecosystem-based management*. Intergovernmental Oceanographic Commission and Man and the Biosphere Programme. IOC Manual and Guides No. 53, ICAM Dossier No. 6. Paris: UNESCO. 2009 (English).
- Massachusetts Executive Office of Energy and Environmental Affairs, 2015. *Massachusetts Ocean Management Plan. Volume 2: Baseline Assessment and Science Framework*.
- McCann, J., 2009. "The Rhode Island Ocean Special Area Management Plan." *Proceedings of Coastal Zone 09*. Coastal Zone 09, Boston, Massachusetts. NOAA Coastal Services Center, 2009.
- New York Department of Environmental Conservation, 2016. *New York Ocean Action Plan 2017-2027*.
- Payne, K., 2010. "Appendix-Technical Report 1: The Planning and Policy Context for the Rhode Island Ocean Special Area Management Plan." Rhode Island Ocean Special Area Management Plan. Rhode Island Coastal Resources Management Council. 2010.
- Pilot Pentland Firth and Orkney Waters Working Group, 2016. *Pilot Pentland Firth and Orkney Waters Marine Spatial Plan*. The Scottish Government, Edinburgh, Scotland. 2016.
- Rhode Island Coastal Resources Management Council, 2008. *The Ocean/Offshore Renewable Energy Special Area Management Plan (SAMP)*. Rep. R.I. Coastal Resources Management Council, 13 May 2008.
- Rhode Island Economic Development Corporation, 2009. *RI Renewable Energy Development Fund Prepared by the Rhode Island Economic Development Corporation Annual Financial and Performance Report for the Year Ending 12/31/2008*. Rep. 1 Mar. 2009.

- Rhode Island Coastal Resources Management Council, 2010. R.I. Ocean Special Area Management Plan: Advancing Marine Spatial Planning through Research and Public Input. R.I. Coastal Resources Management Council, 2010.
- Study on the Economic Effects of Maritime Spatial Planning Final Report, 2011. The European Union study quantified time and cost savings for wind power development due to greater efficiency in government decision-making, lower transaction costs (search, legal, administrative, and opportunity costs), and enhanced investment conditions arising from greater certainty as a result of CMSP. Brussels. European Commission. Directorate-General for Maritime Affairs and Fisheries. Study on the Economic Effects of Maritime Spatial Planning Final Report. By Policy Research Corporation.
- UNESCO,2010. Marine Spatial Planning Initiative: MSP Around the World – United Kingdom.
- Waterman, R. E., 2008. Integrated coastal policy via building with nature, towards an integrated coastal policy via building with nature, using forces and materials present in nature. Opmeer Drukkerij bv: The Hague.
- White House Council on Environmental Quality Interagency Ocean Policy Task Force, 2010. Final Recommendations of the Interagency Ocean Policy Task Force. 75 Federal Register 45606 (19 July 2010)
- Young, O. R., Osherenko, G., Ekstrom, J., Crowder, L. B., Ogden, J., Wilson, J. A., Peach, R. E., 2007. Solving the crisis in ocean governance: Place-based management of marine ecosystems. Environment.