

## **MARINE SPATIAL PLANNING APPROACHES AT THE STATE LEVEL: SIMILARITIES AND DIFFERENCES BETWEEN MSP EFFORTS ACROSS THE COUNTRY**

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### **Abstract**

Competing uses, sensitive and valuable marine resources, and overlapping jurisdictions complicate management decision making in the marine environment. States are developing marine spatial planning capacity to help make better decisions, particularly as demand for ocean space and resources is growing because of emerging human uses (renewable energy, aquaculture) and traditional human uses (commercial fishing, commerce). This paper offers perspectives on marine spatial planning efforts being carried out in four states across the US, and demonstrates similarities and differences between them. The approach to marine spatial planning in each state is discussed with specific attention given to issues such as what is driving the effort, data availability, maturity of the effort, and level of resources devoted to it. Highlighting the similarities and differences illustrates state and region specific challenges and the approaches being used to meet them.

### **Introduction**

Although marine spatial planning (MSP) has been underway internationally for nearly 30 years, many efforts in the US are relatively recent. MSP is a public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that are usually specified through a political process (Ehler and Douvère 2009). Interest in MSP has increased noticeably over the last year, motivated by the President's charge to the White House Council on Environmental Quality's Interagency Ocean Policy Task Force (OPTF), to prepare a national framework for marine spatial planning.

MSP identifies areas suitable for various human activities in order to reduce user conflicts, reduce environmental impacts, facilitate compatible uses, and preserve ecosystem services to meet various public objectives (White House Council on Environmental Quality 2009). Potential state benefits from implementing the MSP process include identifying and resolving ocean use conflicts, opportunities to streamline permitting processes, and increased certainty for offshore development.

Prior to the OPTF efforts, several states have been actively pursuing various aspects of MSP to address urgent ocean or lake area management needs. Given that MSP activities in the US are relatively recent, even the most advanced of these has not had sufficient opportunity to implement a comprehensive process. These examples contain elements of marine spatial planning or exemplify how agencies are working to use its guiding principles. The objective of this document is to increase understanding of the issues surrounding MSP and the approaches being taken to implement it. The efforts of the four states described here illustrate similarities and differences in their approaches.

### **North Carolina**

North Carolina's efforts in MSP are best described as taking their first steps. Although they are at the very beginning of a comprehensive effort, they have significant existing data and ongoing projects that can contribute and evolve into to a more formal process and documentation.

Currently, the coastal resource management structure in NC includes the Coastal Resources Commission (CRC), which is responsible for regulating development activities in coastal waters within the State's 20 coastal counties. The CRC is supported by the Division of Coastal Management (DCM) which provides information, expertise, and recommendations on rule development and policy. Both CRC and DCM are driving initial discussion and efforts related to MSP. Their current activities center on permitting marine-based wind turbines and characterization of

sand resources. Both CRC and DCM, however, have begun looking at how information from these activities can be leveraged with additional data from academics, non-profits and other state resource agencies to contribute to a more comprehensive process based on MSP principles (North Carolina Ocean Policy Steering Committee 2009).

The NC Coastal Habitat Protection Plan or CHPP, has potential for use as an MSP framework. The CHPP is a multi-agency cooperative that brings together staff from the various environmental resource agencies housed within the State's Department of Environment and Natural Resources. The focus of CHPP is to work together on environmental conservation, protection, and permitting. Each of the agencies represented in CHPP also serve as staff to the various State Resource Commissions.

An inventory of available data that could support State level MSP is already underway at NC DCM. In addition, various State universities have launched several projects characterizing resource potential for State waters. The most notable achievement is the University of North Carolina Wind Energy Study commissioned by the NC General Assembly that outlines the potential for large scale wind energy development in Pamlico Sound (University of North Carolina at Chapel Hill 2009).

Currently there is no specific formal public process in NC that would support MSP. The CRC does, however, hold meetings every other month where there is a public input period. There is also a public hearing anytime new rules are introduced by DCM staff and prior to rule adoption by the CRC.

## **Michigan**

Michigan's MSP efforts are in their infancy although recent interest in offshore wind energy generation may provide the impetus to devise a policy framework for MSP in Michigan's Great Lakes waters. In February 2009, Governor Granholm created The Great Lakes Wind Council (Council) to examine issues and make recommendations related to offshore wind development. The Council, which consists of key agency representatives and stakeholders, is driving much of the work for current offshore wind planning (Michigan Great Lakes Wind Council 2009). No individual state agency employees are fully dedicated to MSP, but several employees within various agencies are involved in the Council's offshore wind planning efforts as part of their responsibilities. It's expected that an expanded MSP effort would require the contribution of employees across state agencies including the Department of Energy, Labor and Economic Growth and the Department of Natural Resources and Environment.

The Michigan Coastal Management Program (MCMP) realized in late 2007 that critical resource management decisions, in addition to wind energy discussions, were suffering from insufficient spatial data. In response the MCMP provided funding for the lakebed alteration decision support tool (DST). This effort was carried out with the Institute for Fisheries Research, a cooperative unit of the Michigan Department of Natural Resources and Environment and the University of Michigan. The Council is relying heavily on the DST, and it is expected it would play a major role in future MSP efforts. The DST contains dozens of data layers sorted by theme including: biological features (e.g. fish spawn sites by species), environmental features (e.g. Areas of Concern), protected features (e.g. shipwrecks, bottomland preserves), base/political features (e.g. Coastal Zone Management area, shipping routes, marinas), and physical features (e.g. bathymetry, substrate).

Although there is not a formal public process for MSP, the Council is charged with recommending a process for engaging the people of Michigan in a public dialogue about offshore wind. It is expected that the state agencies will play a major role in implementing this public outreach process and this process would then be in place for any future larger MSP efforts.

## **Oregon**

The State of Oregon asserted its interest in managing ocean resources in 1976 with adoption of Statewide Planning Goal 19, Ocean Resources, as part of the Coastal Management Program. In 1991, the legislature enacted an Ocean Resources Management Program to promote coordinated action among state agencies responsible for ocean resources and to engage the public and stakeholders in that process. The initial Territorial Sea Plan (TSP), adopted in 1994, created a policy template for coordinated management of uses in state ocean waters but, other than provisions for rocky shore management, contained no spatial component (Oregon Coastal Management Program 1994).

Recently, the geo-spatial component of marine planning has gained prominence through four principal activities. One, the Oregon Coastal Atlas (<http://www.coastalatlantlas.net/>), created by the Oregon Coastal Management Program, serves thousands of spatial data sets, provides information tools about the coast and ocean, and is a platform for additional MSP tools. Two activities were initiated by a Governor's directive in March 2008 that include a list of potential marine reserves to be developed for legislative consideration using a community-based public process by December 2008, and a plan for ocean alternative energy to be prepared by December 2009 for adoption into the Territorial Sea Plan. The fourth activity, detailed mapping of the nearshore seafloor, was initiated in summer 2009.

The Governor's marine reserves directive kicked off an interagency effort to provide, via the Internet, a variety of mapped information for the public and the state's Ocean Policy Advisory Council. This work enabled the public to download and use maps of a variety of marine spatial data. And while Phase One of planning for ocean alternative energy focused on policies and standards, Phase Two, currently underway, will provide a geospatial basis for siting energy projects while protecting habitat and avoiding other ocean users. The state is collaborating with local fishermen organizations and other stakeholders to map the extent, kind, and value of ocean fisheries. Data from this effort, expected by early 2011, will be combined with data from the marine reserves process, new detailed seafloor data, and additional ecological data to support decisions regarding the location of ocean alternative energy development.

## **Massachusetts**

The MSP effort in Massachusetts began when the MA Oceans Act (the Act) was signed into law in May 2008. The Massachusetts Executive Office of Energy and Environmental Affairs (EEA) were designated as the lead agency for developing an ocean plan. EEA worked closely with the MA Ocean Partnership (MOP) during the development of the plan. MOP is a broadly representative, independent public-private partnership created specifically to contribute to the Commonwealth's ocean planning effort.

The Act required the secretary of EEA to develop a comprehensive ocean management plan in 18 months, and it was released in January 2010. The goal is to institute a comprehensive approach to ocean resource management that supports ecosystem health and economic vitality, balances current ocean uses, and considers future needs (Executive Office of Energy and Environmental Affairs 2009). This was accomplished by determining siting and performance standards for specific ocean uses (renewable energy and related infrastructure, cables, pipelines, and sand extraction for beach nourishment) and by identifying and protecting "special, sensitive, or unique life and habitats."

The plan is being submitted to NOAA for incorporation into the existing coastal zone management program. In addition to the plan being implemented through federal consistency provisions, other existing state regulatory and permitting processes, including the Massachusetts Environmental Policy Act and Chapter 91, the state's waterways law, are to be consistent to the maximum extent practicable with the ocean management plan. Therefore, the plan has regulatory "teeth" and multiple facets to its implementation.

To facilitate the planning process, an Ocean Advisory Commission and Science Advisory Council were created. Public input sessions were scheduled in coastal and inland communities. Six agency work groups were formed to acquire and analyze existing data and information regarding habitat; fisheries; transportation, navigation, and infrastructure; sediment; recreation and cultural services; and renewable energy.

Massachusetts uses MORIS (Massachusetts Ocean Resource Information System) to search and display spatial data on-line pertaining to the Massachusetts coastal zone. The MA Ocean Plan contains more than 50 maps providing spatial representations of jurisdictions, marine habitat, infrastructure, recreational areas, economically important areas, and navigational information.

Finally, the Act intends for the plan to evolve, since there is a requirement to update the plan once every five years. To assist in this, the ocean management plan includes a science framework (identifying priority data/science acquisition for the next five years) and a system of plan performance/socioeconomic indicators to help gauge the effectiveness of the plan in meeting its stated goals.

## **Analysis**

The level of involvement and approaches taken to MSP in the US are varied. The states compared here illustrate similarities and differences in the MSP drivers, maturity of the efforts, specific authority for MSP, approaches to public engagement, and availability of spatial data (Table 1). In the cases of Massachusetts and Oregon, plans are in place and a process is ongoing. North Carolina and Michigan are earlier in the process. None of these states, however, has had the opportunity to monitor and evaluate a plan, leading to adaption of their MSP approach. It is important to continue analyzing examples of MSP to learn about the benefits and challenges of different approaches.

	North Carolina	Massachusetts	Michigan	Oregon
Primary driver	Wind energy	Wind energy	Wind energy	Conservation
Secondary driver	Sand resources	Conservation	NA	Wave energy
Maturity	Beginning	< 5 years	Beginning	> 5 years
Legislated authority	No	Yes	No	Yes
Public participation	Yes	Yes	Yes	Yes
Spatial data system	No	Yes	Yes	Yes
Marine spatial plan	No	Yes	No	Yes
Implementing plan	NA	Yes	NA	Yes
Evaluating plan	NA	Will be	NA	No
Adapting plan	NA	Will be	NA	NA

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