



MARINE SPATIAL PLANNING: WHY, HOW, AND WHEN?

ENVIRONMENTAL LAW INSTITUTE, WASHINGTON DC

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SEMINAR SUMMARY

The Environmental Law Institute and the DC Bar's Ocean and Marine Resources Committee co-sponsored a seminar exploring the rationale for marine spatial planning (MSP) and related science, law, and policy issues. The President's Ocean Policy Task Force has until December 9, 2009 to provide recommendations for developing a national MSP framework. The panelists discussed the current legal setting, the role and process of the Task Force, and the need to continue efforts to map oceanographic, jurisdictional, and human use data in order to inform management decisions.

Moderators

- James Walpole, Chair, District of Columbia Bar, Ocean and Marine Resources Committee
- Jordan Diamond, Law Fellow, Environmental Law Institute

Speakers

- Margaret A. Davidson, Director, National Oceanic and Atmospheric Administration Coastal Services Center
- Michael Weiss, Deputy Associate Director for Oceans and Coastal Policy, Council on Environmental Quality
- Edward Saade, President & Managing Director, Fugro EarthData, Inc.
- David E. Preble, Chair, New England Fishery Management Council, Habitat/Marine Protected Areas/Ecosystem Committee; U.S. commissioner, Northwest Atlantic Fisheries Organization
- Steve Roady, Attorney, Earthjustice

Ms. Jordan Diamond and Mr. James Walpole introduced the panelists and the seminar topic. Mr. Walpole highlighted the timeliness of the seminar in light of President Obama's June 12, 2009 memorandum establishing an Interagency Ocean Policy Task Force. He noted the conceptual similarities between land-use planning and marine spatial planning (MSP), but noted that the two concepts are fundamentally different because of marine information constraints. He discussed the rapid development of remote sensing technologies over the last decade and the importance of reducing knowledge gaps through use of three-dimensional monitoring and modeling in the Great Lakes and oceans. Mr. Walpole provided context by reviewing examples of competing commercial and recreational marine interests at local levels. Mr. Walpole concluded with mention of integrating human influences into ecosystem-based approaches to management of marine resources.

Ms. Margaret Davidson described NOAA's Coastal Services Center's perspective on how an MSP framework might integrate political and scientific geospatial data to balance competing resource uses. With growing interest in offshore energy sources such as oil extraction, wind power, and wave and tidal energy, Ms. Davidson described NOAA's widespread involvement in balancing marine resource demands. With extensive experience managing multiple uses, Ms. Davidson believes NOAA is favorably placed to implement MSP as a decision support tool to balance human uses with ecosystem services. Ms. Davidson also believes that NOAA's history of collaboration with numerous local, state, and federal partners makes it particularly qualified to steer development of an MSP framework.



Ms. Davidson explained the potential an MSP framework presents to increase visibility, rationality, and perhaps transparency of natural resources uses. She introduced the MSP process as a more accessible and dynamic Geographic Information Systems (GIS) framework designed to integrate data from scientific and political realms, provide holistic views of marine resource demands, and promote place-based management analysis. Marine spatial planning incorporates present ecosystem and marine use data with other available tools, such as ocean and climate change models, to allocate resources. She mentioned the importance that politicians and resource agencies are currently placing on implementation of an MSP framework through funding of discrete initiatives in several states and in present bills on Capitol Hill, such as those pertaining to the Coastal Zone Management Act.

Ms. Davidson concluded with an overview of the MSP work NOAA has recently completed. NOAA's Marine Protected Areas (MPA) Center, which manages protected marine reserves, has aided several Pacific states, notably California, establish their MPA systems; created a national framework for marine protected areas; and pioneered an ocean uses atlas with the Department of the Interior. The National Marine Fisheries Service is currently mapping essential fish habitat, and the National Coastal Service Center oversees the Multipurpose Marine Cadastre established under the Energy Policy Act of 2005. Ms. Davidson proceeded to explain the structure of the Marine Cadastre, an overarching data framework for georegulations, marine infrastructure, geology, biodiversity and habitat, and human uses. She emphasized that the cadastre is only as accurate and effective as its input data and established objectives. Ms. Davidson also highlighted the Coastal Services Center's work with georegulation through extraction of geographic jurisdictional data from international, national, state, and local marine regulations into a legislative atlas. The spatial advantages of GIS allow for detailed analyses of all parties involved in particular areas along with integration of the best available coastal and oceanic science.

Mr. Michael Weiss provided insight into the explicit objectives of the Obama administration's Ocean Policy Task Force, which is led by the Council on Environmental Quality (CEQ), and its relevance to a broader MSP framework. The Task Force is charged with four principal objectives under the overarching goal of achieving healthy, sustainable stewardship of ocean, coastal, and Great Lakes resources and creating a unified, ecosystem-based national framework for domestic marine action.

Mr. Weiss explained that recommendations for the first three objectives are to be completed within 90 days of the June 12, 2009 memorandum. The first objective is to recommend a national policy on oceans, coasts, and the Great Lakes. He explained that the policy is meant to ensure sustainable management of marine resources, enhance coastal economies, protect our maritime heritage, include adaptive management measures (particularly for climate change), and include national security and foreign policy interests. Mr. Weiss then described the Task Force's second objective, which is to recommend an appropriate framework for coordination of efforts to improve stewardship of marine resources. This recommendation involves evaluating the existing agency oceans policy structure to ensure integration of all federal and state goals, including improved coordination with homeland security objectives. Mr. Weiss noted that CEQ has received substantial outside input, both from government agencies and external stakeholders, on needed changes in the current governance structure. The Task Force's third task is to create an implementation strategy to prioritize national policy objectives for various federal agencies.

The fourth goal of the Oceans Policy Task Force is to recommend a framework for MSP, and it is to be finished within 180 days of the President's memorandum. Mr. Weiss described the fundamental elements of MSP, which include incorporating ecosystem-based management to balance conservation, economic growth, user conflict, and sustainable uses of resources. While the timeframe is ambitious, Mr. Weiss noted its necessity in light of our increasingly stressed marine ecosystems and the need to move away from our sector-by-sector approach towards an ecosystem-based, integrated marine management regime. Stakeholders have consistently expressed the desire for improved transparency and predictability in marine resource allocations and the need for a systematic, proactive approach to supervision of the oceans and Great Lakes. Internationally and domestically, many parties are progressing on establishment of MSP priorities and utilizing geospatial data to better conservation goals.



Mr. Weiss mentioned that a productive political environment for a national MSP framework requires coordinating goals across federal agencies and incorporating state and local measures. He also suggested using incentive-based policy approaches to encourage effective implementation.

Mr. Weiss noted that the Task Force has been organized into five distinct subgroups, four of which correspond to its four stated objectives, and one which focuses on public engagement. The public engagement subgroup is responsible for gathering and including essential public input into the national oceans policy and MSP framework. It has organized 20 expert roundtables to provide guidance, which have included advice from a wide range of sectors, including recreational fishing, commercial fishing, scientific research, academia, agriculture, utilities, ports, and energy providers. Five nationwide field hearings have also been scheduled, the first of which will likely be held in Alaska. Finally, CEQ supplies a web-based portal for stakeholder comments.

Mr. Edward Saade reviewed recent advances in compiling and utilizing geospatial data. Mr. Saade noted that to effectively manage marine resources, we must first accurately measure properties of lakes and oceans. He then established that digital marine spatial data is typically divided into three primary categories: digital seabed surveying, oceanographic measurements, and coastal zone surveying and analysis. Digital seabed surveying now employs acoustic-based remote sensing technologies to precisely map seabed features such as elevation and fish habitat, which is routinely collected at depths of 15,000 feet and can be measured down to 30,000 feet. This data is vital for operations of first responders following national disasters and shipwrecks. Oceanographic measurements include assessment of aquatic characteristics, including sea surface temperature, water column temperature, ocean currents, chemical composition, and salinity, and can be used to track the effects of climate change, oil spills, and civil events. On-shore measurement of estuarine and floodplain characteristics are also regularly collected as part of coastal zone surveying. Mr. Saade added that after collection, marine spatial data is compiled through use of digital databases such as Google Earth and Ocean. These tools can regionally integrate diverse datasets for broad, multidisciplinary use. Ideal data compilation will culminate in large-scale digital undersea visualization of seabeds and coastlines. Achievement of these large-scale goals is dependent upon filling information gaps in geology, marine biodiversity, human impacts, and seafloor structure.

Mr. Saade proceeded to outline the multitude of clients already utilizing MSP tools to better align daily activities and avoid conflicts, including transportation, commercial fishing, military, recreation, resource exploration, conservation, beach preservation, coastal development, Native American communities, and seabed cable interests. He then described some successful domestic applications of marine spatial data collection. Measuring metocean conditions, as well as geologic conditions, can help with the tracking of climate change effects and aid in the accurate forecasting of severe weather. California has progressed substantially on the California Mapping Project (CMP), which has been active for over 3 years and has resulted in exemplary cooperation between government, academia, and industry to create one of the largest available databases of marine spatial data in the world. The CMP is designed to meet the requirements of the West Coast Governors' Agreement on Ocean Health, survey changes in coastal environments, and support California Current Large Marine Ecosystem efforts. The CMP integrates varying datasets, including marine protected areas, benthic measurements, and scientific research, and serves as an excellent example of cooperation between government agencies, academia, and industry.

Mr. David Preble explained that an MSP framework appears to be a modern-day reiteration of familiar natural resource dilemmas as authorities search for an equitable method to prevent resource overexploitation. Mr. Preble recalled the Magnuson-Stevens Fishery Conservation and Management Act of 1976 as the initial response to management of marine ecosystems, but that this legislation was initially too static and complex to meet current resource challenges. Mr. Preble noted that the fishermen's frontier myth disappeared following the collapse of the Northeast fishery, to the point where it yields less than 15% of its potential and loses nearly \$500 million annually. In addition, the Northeast Fishery Management Council (NEFMC) recently passed Amendment 16 to the Northeast Multispecies Fishery Management Plan, establishing catch-share quotas. Fishing technology has advanced and increased the



accessibility of ocean resources, and restoring fishing ecosystems and economies now requires compartmentalizing the ocean as we once did the land. It also necessitates restricting fishing access and methods, and both these realities have been difficult for many fishermen. Mr. Preble described MSP as a method of integrating a simple, adaptable system of fisheries management that can adjust to environmental recovery over time. He emphasized that the system must also centrally incorporate a fisherman-based, cultural ethic. Mr. Preble believes that the objectives established in the President's memorandum can integrate a cultural ethic that will lead fishermen to effectively steward marine ecosystems.

Mr. Preble then explained how scientific and technological progress has made ecosystem-based management plans based on maintaining or increasing harvestable excess productivity a reality. However, he noted that many current MSP tools lack an integral function: a method for measuring the effects of uses on the ecosystem, which can incorporate multiple sources of data. Mr. Preble then presented a vulnerability assessment tool currently under development by the NEFMC Habitat/Ecosystem Management Committee and the Plan Development Team. The model will monitor effects of fishing on essential fish habitat, and will hopefully provide the foundation for a comprehensive MSP vulnerability assessment tool.

Finally, Mr. Preble explained that NEFMC is currently updating its registry of essential fish habitat, and recently endorsed a letter explaining the consultation requirement for any projects that may adversely affect an essential fish habitat. The letter was sent to non-fishing project proponents and offered NEFMC's assistance in meeting the mandates. Mr. Preble concluded by recognizing the historical expertise that fisheries managers have regarding marine ecosystem management and their readiness to adopt and contribute to development of an MSP framework.

Mr. Steve Roady provided a legal perspective on the legal framework into which MSP may be inserted. He referred to the numerous technological advances cited throughout the panel and predicted that the capability will exist to obtain comprehensive ocean data—yet, with all of this increasingly available data, a legal framework is still lacking to allocate marine uses. The public trust doctrine, which is based on the tenet that humans have a stewardship obligation to manage ecosystems in a sustainable way, offers a possible foundation for MSP and ecosystem-based management. Though no court has explicitly recognized a federal public trust doctrine, many statutes mention the underlying principle, and Mr. Roady noted the doctrine's heritage in concepts espoused in Justinian code and British common law. The states have a public trust duty out to three nautical miles, and Mr. Roady proposed the federal government similarly adopt the doctrine for oversight of resources throughout the US Exclusive Economic Zone.

Mr. Roady commended the President's inclusion of public trust doctrine language in his June 2009 memorandum, such as references to our stewardship responsibility to maintain marine resources for future generations. In an MSP framework, the public trust doctrine would constitute the highest layer of concern, necessitating coordination among the twenty federal agencies involved in ocean oversight to ensure sustainable and rational ecosystem-based management. Following organization of government entities, Mr. Roady promoted baseline inventories of marine ecosystems to establish reference conditions. These inventories would involve creation of MSP tools such as the marine cadastre and would also require avoidance of ecologically harmful actions. Finally, successful adoption of a public trust doctrine relies upon identifying a decision-maker to make tradeoff decisions and uphold the guarantee of stewardship. Mr. Roady suggested CEQ was appropriately placed for such a lead role.



Summary of Questions and Answers

How does the National Ocean Policy Task Force treat international marine management considerations?

Mr. Weiss remarked that while the President's memorandum was primarily aimed at coordinating domestic efforts towards an effective ocean policy, requirements for consistency with international law and the US position as a leader on global ocean initiatives would have international implications. He also noted that the Obama administration has suggested accession to the UN Convention on the Law of the Sea, and that domestic ocean policy must further US foreign policy interests.

How can the National Ocean Policy Task Force create MSP guidelines without having all appropriate data?

Mr. Weiss stated that he views the framework as guidance for how to approach and coordinate data collection in the future and also as a method of identifying necessary data that is not currently available. Ms. Davidson mentioned existing standards for remote sensing data under the National Spatial Data Infrastructure as a tool for moving forward. Mr. Preble also cited his experience with fisheries data collection, stressing that waiting for sufficient data collection will stall current progress. He again emphasized the necessity for feeding data into a vulnerability assessment tool with baseline readings, in order to measure the effect of management strategies over time, and noted that enhanced data increases the temporal resolution of such monitoring efforts.

Using the Chesapeake Bay as an example, how can the lack of political will to enforce marine protections be addressed?

Mr. Roady mentioned that in addition to political legislation, public education and public will to enforce and prevent pollution (particularly from nonpoint sources) will be necessary to improve environmental conditions in the Chesapeake Bay. He also suggested aligning incentives in the Farm Bill to discourage excessive fertilizer use. Mr. Weiss touched on the need for clear direction, education, inclusiveness, and transparency, and reiterated using an incentive-based approach to change behavior. He also noted the need for stakeholders and citizens to recognize trade-offs and the ultimate realization that Chesapeake Bay cleanup provides an overall societal benefit. Ms. Davidson finally advised attempts to influence planning and zoning boards at the state and local level to change development patterns and pollution control requirements.

How will an MSP framework handle confidentiality of fishing information?

Mr. Preble stated that confidentiality of fishing spots no longer exists. Ms. Davidson responded that various federal agencies already have established protocols to manage confidentiality issues.

What does CEQ see as the appropriate approach to implement NEPA in the design of MSP plans?

Mr. Weiss responded that the National Oceans Policy Task Force is currently managing recommendations for an MSP framework and that future focus on implementation will be consistent with all applicable laws and procedures. Mr. Roady suggested that a potential approach might include development of an overall programmatic Environmental Impact Statement (EIS) that could then have regional Environmental Analyses (EA) or EIS; however, he confirmed it is all dependent on the MSP framework's design.

Is there a plan to expand the human uses atlas to the entire US coast?

Ms. Davidson affirmed that there was intent to extend the NOAA human uses atlas beyond the pilot region in central California, but that the budget was not yet allocated. She mentioned the need for expanded fundamental physical data and cost effective data collection.



How do you differentiate the concept of MSP as a tool and MSP as a process?

Ms. Davidson responded that MSP is a process, but that visualization tools are a necessary part of MSP that allow management and understanding of all involved parties. However, she inserted that without community agreement and knowledgeable leadership, the process and tool cannot be used effectively.

Some Marine Protected Areas established recently in the Pacific Ocean are focused on lower parts of the ocean; can we expect revision of protected boundaries through the entire water column?

Mr. Weiss responded that any response on this topic would be speculative.

Will the National Ocean Policy Task Force's MSP framework principally focus on the 3-200 mile zone exclusively under federal jurisdiction?

Mr. Weiss emphasized that the memorandum clearly notes the necessity of collaborating with states to respect ecosystem boundaries and not simply jurisdictional boundaries.

Will the National Ocean Policy Task Force's MSP framework influence the Department of Interior's 5-year planning process?

Mr. Weiss commented that the Task Force is weighing all existing government initiatives and that the Department of the Interior is a member of the Task Force and thus integrated in the decision-making process.