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# Marine Spatial Planning is Coming to an Ocean Near You

by Robert S. Pomeroy

**Unprecedented growth of both traditional and new ocean uses is leaving virtually no ocean area unaffected by human influence.**



Peg Van Patten

Balancing the many competing uses of the ocean is not easy. Conflicts often result, which impairs the ocean's ability to maintain itself. Marine spatial planning, a way to manage based on place or ecosystem, rather than a single concern or process, can help.

Ocean zoning is coming! Ocean zoning is coming! screams a headline. In fact, ocean zoning, as part of a broader marine spatial planning process, is already here. Countries such as Belgium, the Netherlands, China, Germany, the United Kingdom, China, Australia and Canada have already begun implementing or experimenting with marine spatial planning and ocean zoning. Australia's Great Barrier Reef Marine Park is an example of comprehensive, multiple-use zoning of marine resources. Massachusetts is considering legislation to develop and implement an ocean management plan. A recent article in the *Providence Journal* stated that "as renewable energy companies are approaching the state with cutting-edge proposals, officials think it's time to zone Rhode Island's coastal waters. This would create zoning regulations for uses such as permitting wind farms and protecting waters for commercial fishing or boat routes" (4 January 2008). In its 2007 legislative session, the Hawaii Senate created an ocean board to develop and implement, in consultation with relevant county, state, and federal agencies, a comprehensive ocean zoning master plan.

Marine spatial planning with comprehensive ocean zoning as one component may be an inevitable future development in improving U.S. ocean governance. Unprecedented growth of both traditional and new ocean uses is leaving virtually no ocean area unaffected by human influence. Total claims for ocean space sometimes exceed up to three times the available amount, giving rise to numerous conflicts of which the cumulative impact increasingly impairs the ocean's ability to maintain itself and produce the goods and services we all depend upon. Reversing this trend is a complex undertaking, one that is often challenged by the lack of scientific data and understanding. A growing community, however, is starting to realize that one of the major obstacles toward solutions is primarily related to governance and management rather than a lack of scientific knowledge. Because many of the problems facing our oceans (for example, resource overexploitation, environmental degradation, use conflict) are due to failures of governance, addressing them will require new, more effective governance systems. The current governance is structured with separate responsibilities for different sectors, such as fisheries, aquaculture, shipping, and energy. This system is designed to manage individual activities without any consideration of cross-sectoral impacts or compatibilities across sectors.

The fragmentation, mismatches and conflict of management authority, between local, state and federal governments, and a host of agencies and statutes, will require considerable improvement as rational choices

need to be made regarding the current and future use of ocean space.

### **What is marine spatial planning?**

Many scientists have advocated reforms centered on the idea of ecosystem-based management to alter the degradation of the marine environment and establish sustainable use of the ocean. Managing "places", including the range of activities affecting them, is a key characteristic of ecosystem-based management and is a marked departure from existing approaches that usually focus on a singly species, sector, activity or concern. To date however, ecosystem-based management is still more a concept, widely discussed at scientific fora, but with few examples of actual practice. A key challenge of ecosystem-based management is to take it beyond the conceptual level, and one practical way to do this is through marine spatial planning. While various measures are needed to implement the multiple objectives of ecosystem-based management, a focus on the spatial and temporal components can make this process more tangible.

Marine spatial planning is a process of analyzing and allocating parts of three-dimensional marine spaces to specific uses, to achieve ecological, economic, and social objectives that are usually specified through the political process. Essentially, marine spatial planning is a future-oriented activity informing on what goes where and when. Analogous to the land-use planning process, marine spatial planning usually results in a comprehensive plan or vision for the marine region. This comprehensive plan, developed in consultation with stakeholders, is used to create and establish a more rational and informed organization of the use of marine space and the interactions between its uses and to balance the demands for development and conservation.

### **What is ocean zoning?**

Ocean zoning is one tool to implement marine spatial planning. Other tools include site plans, infrastructure investment, regulations, standards, permits and economic instruments. Ocean zoning is a common feature of U.S. land use planning that has been in use since the 1920s and 1930s. As on land, ocean zoning allows for a planned allocation of uses based on an area's suitability for those uses, and a reduction of user conflicts by separating incompatible uses. Ocean zoning, for example, may be used to restrict commercial fishing from recreational diving areas or water skiing, or to restrict jet skiing from sensitive wildlife habitats.

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K. Sardi, Whale Center of New England



A good example of successful marine spatial planning: this photo from 2006 shows humpback whales feeding in the shipping lanes that pass through NOAA's Stellwagen Bank National Marine Sanctuary. NOAA and the U.S. Coast Guard teamed up in 2007 to shift the shipping lanes slightly to avoid collisions with whales.

Ocean zoning refers to a scheme for dividing a marine area into zones districts and within those zones regulating uses to achieve specified purposes. Ocean zoning generally consists of a map depicting the zones and a set of regulations or standards applicable to each type of zone. For some zones the regulations might be very protective of marine resources or habitat by allowing a very few compatible uses, and excluding any use that would undermine the goal of resource protection. In other zones where resource protection is less of a priority, more intensive use might be allowed based on the suitability of the area for such uses.

Is ocean zoning a new tool to managers in the U. S. ? No. A myriad of federal and state statutes authorize management of various ocean areas or ocean resources, and many of these initiatives are specifically fixed to a defined geographic area. Historically, these include, among others, navigation channels, dredged material disposal areas, fisheries closure areas, and oil and gas drilling leases with associated exclusion areas. Further, within these statutorily defined areas the management authority has in some instances used a zoning scheme as the basis for management. The difference between these existing zones and ocean zoning is that they are used on a single-sector basis and are not plan-based; they give little or no consideration of other uses that may be compatible or conflicting.

A difference between ocean zoning and land-based zoning is that the latter usually affects property owned by private citizens. In most instances, ocean zoning would not result in private property rights issues or "takings" issues, since it most often affects areas that are deemed as "commons", with shared public access. Due to the public nature of the ocean, every individual is a potential stakeholder. But not all stakeholders have the same interest or are affected in the same way by ocean zoning and thus

have different entitlements to a role in process of allocating ocean space.

## The Challenges

Many of the challenges that confront land-side marine spatial planning initiatives occur in efforts to allocate space, organize private uses and protect public resources and rights in the ocean. But marine spatial planning is more complex in that it needs to address and manage activities on the ocean's surface, in the airspace above, throughout the water column, and on and beneath the seabed. The challenges are scientific and technical, as well as political and social. Comprehensive marine spatial planning requires good, spatially explicit data on ecosystem characteristics, offshore jurisdictions, and the

requirements of economic activities. Equally important is the connection of offshore activities to onshore communities, cultures and societies. All this information serves as the basis for the allocation of ocean space and the creation of the zones. The issue of perceived rights of existing users of marine resources often adds complexity. Ocean zoning can establish priorities among different uses of marine resources and may redistribute benefits and costs of management among different groups.

"If we do marine spatial planning right, the oceans will be healthier and ecosystems will be more productive, said NOAA marine ecologist Charles Wahle. "People will derive more services and benefits from those ecosystems and industries will be able to plan and commit and invest in ways that actually work."

Long Island Sound will soon need comprehensive marine spatial planning, given the many competing uses of the estuary. Connecticut Sea Grant plans to host a workshop on this topic in the near future.

As marine spatial planning and ocean zoning strives to balance the many objectives, interests, and perspectives of all stakeholders in the area, their involvement is a key to success. Ideally, relevant stakeholders are identified through a period of field analysis, involved in all stages of the spatial planning process and empowered to make their involvement adequate and sustainable over time.

### About the Author:

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