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EBM Perspective: Ocean Zoning is Inevitable

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Until the 1990s, scientists and policy-makers generally perceived the sea as the Earth's bountiful "last frontier", so few people could understand the need for zoning. But what was so recently inconceivable has now become inevitable. Why? It is for the same reason that conservationists don't want to position marine reserves randomly...why fishermen know where fishing is most profitable...why wave power field and net pen operators have specific location criteria...and why oil companies willingly pay huge amounts to drill in some places but not in others. More powerful tools for scientific exploration and commercial exploitation have made it much easier to locate things people want in the sea. As a result, competition for space is intensifying, and that is increasingly affecting marine life and people's interests. The frontier days are over. We're running out of what we most care about in the ocean. This convergence of changing perception and changing need is why zoning is going to happen.

My oldest friend often reminds me that "Perception is reality." The way people perceive oceans determines how we govern and manage them. If we envision them as homogeneous and invulnerable, without meaningful spatial patterns of geology, oceanography, biology, socioeconomics and governance, and if we don't perceive that their diversity and productivity are at risk, zoning them seems unnecessary.

But if we see as marine scientists, boaters, tourists, fishermen, aquaculturists, petroleum geologists and wind farmers do - that the oceans are a complex mosaic of places, each a distinctive composite of natural processes and human activities - we realize that a "one-size-fits-all" placeless approach doesn't make sense. Moreover, if we acknowledge that ocean places are increasingly vulnerable to human impacts, as marine conservation experts do, it becomes clear that governing and managing them as we have done will not bring better results. Places matter.

As a marine biologist who began working in conservation 30 years ago, I think the question is not "Will nations adopt comprehensive zoning as the framework for marine ecosystem-based management?" It is, "Why and how will they do it?" Here I address *why*, recognizing that the latter will be crucial: the devil is in the details. Perhaps we can address *how* in the near future.

On land, realtors say that just three things affect the desirability of a parcel of real estate: location, location, and location. Can it be otherwise in the sea? Only if patterns of primary production resulting from topography and currents do not affect where species feed and spawn. And only if cultural traditions and proximity to harbors and markets do not affect where people fish.

On land people "get" that different places have different values and use them accordingly. But the sea's fluid connections and resistance to human observation (98% of marine animal species live in, on, or immediately above the seafloor, which is mostly too deep for human visitors) leads people to think that the sea is homogeneous. It is not. Understanding these similarities and differences allows us to craft place-based governance and management that can actually work, ecologically and socioeconomically.

Smart observers rightly point out that the USA and other countries are already zoning their waters. Government agencies that oversee certain sectors grant them rights to use specific places in the sea for specific purposes, such as oil drilling. But they are doing it piecemeal. Ignoring the interests of other sectors and of conservation fosters uncertainty, litigation and political strife. A sector-by-sector ocean "land rush" that yields piecemeal de facto zoning is hardly ecologically sound, economically efficient, or fair and wise governance. Comprehensive ecosystem-based zoning - a transparent, public participatory, adaptive process for establishing ecological and socioeconomic objectives throughout a government's jurisdiction - is a far more workable way to govern what happens in the sea.

There is good economic reason to zone: zoning reduces intersectoral competition for ocean space by separating uses that are incompatible. I am told that China has adopted comprehensive ocean zoning to ensure that areas where water quality is still suitable for aquaculture are not given over to other competing uses. Other countries facing the loss of biodiversity and fisheries, such as the United States, have begun embracing the idea of ecosystem-based management without fully accepting that ecosystems are places, which means that conserving them requires zoning. The "sweet-spot" where these approaches overlap is ecosystem-based spatial planning and zoning to accommodate both ecological and socioeconomic objectives. It is the only "win-win" solution to our increasing demand for ocean space.

The path of wisdom is to accept the inevitable, especially when it offers the hope of resolving the problems we have made for ourselves.

For more information

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