

39 Getting the job done: protecting marine wilderness

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What is marine wilderness?

Anyone who has been on the ocean alone, out of sight of land, has experienced some sense of solitude and insignificance. “Vast” is a word seemingly invented for oceans, but is “vast” enough to make any part of the ocean a wilderness?

“Wilderness” is a difficult word to define. The grizzly bear cinematographer Doug Peacock says an area is wilderness if it contains something bigger and meaner than you are—something that can kill you (quoted in Foreman 2000). Roderick Nash, the wilderness historian, has noted that the word carries both positive and negative connotations: a wilderness can be at once inhospitable, alien, mysterious, and threatening, as well as beautiful, friendly, and capable of elevating and delighting us.

The Wilderness Act (P.L. 88-577, passed in 1964) offers what seems to be the most widely accepted operational definition: “A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain.”

Vast, inhospitable, beautiful, deserted, mysterious, threatening, and undoubtedly containing animals that can kill you. It would seem that the ocean could very appropriately be called “wilderness.” Even the dictionary definitions mention the sea as one type of wilderness.

However, we know that not all ocean areas are “untrammelled by man.” While it is not as easy to spot as a roadbed or a building, human effects on some ocean areas have been significant. Offshore oil and gas development, commercial fishing, and ocean outfalls for wastewater, for example, have all left their mark, especially in coastal ocean areas. Shipping and other vessel traffic plying designated shipping lanes and customary port-to-port routes are obvious examples of the human presence on the ocean. Boats grounding on coral reefs, and the tremendous damage they cause to reef ecosystems, could certainly be counted as “trammeling,” as could smaller boats propeller-dredging in seagrass beds. The tons of debris that collect on the pristine beaches and coral reefs of the islands in the mid-Pacific are also telltale signs. While the ocean may contain wilderness, the dictionary may be overstating the case just a bit.

A close look at a few existing areas may help develop a better understanding on what should appropriately be called “marine wilderness.” These areas may provide useful benchmarks against which other areas can be measured.

Glacier Bay National Park and Preserve. The National Park Service (NPS) even goes so far as to call this area a “marine wilderness” in its Web page description: “The marine wilderness of Glacier Bay National Park and Preserve provides opportunities for adventure, a living laboratory for observing the ebb and flow of glaciers, and a chance to study life as it returns in the wake of retreating ice. Amidst majestic scenery, Glacier Bay offers us now, and for all time, a connection to a powerful and wild landscape” (NPS 2001). Over 11,000 sq km were designated as wilderness by Congress in 1980 and thus made part of the National Wilderness Preservation System; approximately 215 sq km of this area is marine waters (Barr and Lindholm 2000). We can accept the NPS self-identification of Glacier Bay as “marine wilder-

ness” as *prima facie* evidence that this area is a good benchmark for helping to define marine wilderness characteristics for other areas.

Tortugas Ecological Reserve, Florida Keys National Marine Sanctuary. Like NPS, the National Oceanic and Atmospheric Administration (NOAA) National Marine Sanctuary System has identified this area as possessing what we believe the qualities of marine—or what NOAA has called “ocean”—wilderness to be. On the sanctuary’s Web page the area is described as follows:

Because of its remote location 70 miles west of Key West and more than 140 miles from mainland Florida, the Tortugas region has the best water quality in the Sanctuary. Healthy baitfish populations support thriving seabird communities, including sooty and noddy terns, masked boobies and the only roosting population of magnificent frigate birds in the continental U.S.... The Tortugas reefs also boast the healthiest coral in the region. In the area dubbed “Sherwood Forest,” coral cover often exceeds 30%, compared to an average of 10% elsewhere in the Florida Keys. The well-developed reef forms a false bottom, interspersed with gorgonian-forests, sponges, and black corals.... Threats to the Tortugas resources exist and are on the increase. Commercial and recreational fishing pressure has reduced the average size of black grouper in the Tortugas from 22.5 lbs. to 9 lbs. The Sanctuary has prohibited anchoring by freighters on the lush reefs of Tortugas Bank, but other parts of the region are still threatened by damage from anchors weighing several tons (NOAA 2001a).

Outstanding resources, identified threats, remote, strikingly beautiful seascapes, and you probably wouldn’t have to poke around much to find something that could kill you—this is almost certainly another useful benchmark area in the effort to better define marine wilderness.

Northwest Hawaiian Islands Coral Reef Ecosystem Reserve. This is the third likely benchmark site, designated by Executive Order (#13178) issued December 2000. It is a massive 340,000 sq km, the second-largest marine protected area in the world after the Great Barrier Reef Marine Park. As summarized on its Web page (NOAA 2001b) the characteristics of the site are very similar to those of the Florida Keys sanctuary. The site is also significantly threatened for reasons related to geography and physical oceanography. Because of its location in the Central Pacific gyre, nearly every piece of cast-off fishing net, cargo net, plastic, or other debris seems to collect on some of these atolls. Millions of pounds of debris have been removed, but this treated the outward symptom but not the root cause. Certainly this is not a problem throughout the reserve, but it is very much a problem in certain locations.

Remote, nationally significant resources, important habitat for endangered species (the entire population of Hawaiian monk seals are found in this region), contains 65% of all coral reefs in U.S. waters, has significance to cultural heritage, and again, it wouldn’t take long to find something that could inflict serious damage. This constitutes another likely benchmark site for marine wilderness.

What qualities make these benchmarks for marine wilderness?

Reaching consensus on calling something “wilderness” is almost never without controversy. It is only slightly more straightforward on land, with almost thirty years of history. Given the considerable connectedness of marine ecosystems, the often inadequate information available for these areas, and the importance of the ocean’s most productive and biologically diverse areas to commercial interests, calling something “marine wilderness” is likely to be hotly debated.

Some of the same attributes that make a place “wilderness” on land are those that could be put forward as defining marine wilderness. Clearly, the Wilderness Act cornerstone of “untrammelled by man” must play a role. In each of the marine benchmark examples, human influence on the ecosystem is less obvious than in other areas

of the ocean, except perhaps in a few areas of the Northwest Hawaiian Islands where marine debris is a chronic problem. Even in this example, however, the debris that collects in these places generally has been transported there over great distances by ocean currents, not dumped there directly. Perhaps this “long-distance trammeling” must be evaluated differently than the building of a road; it is more appropriately compared with atmospheric deposition of contaminants in terrestrial wilderness areas.

Given the global nature of human influence over ecosystems, finding anyplace that is truly “untrammled” requires the use of a relative scale of measurement. The history of the wilderness movement includes some very acrimonious debates over the question of whether wilderness needs to be “pristine” (a position viewed by some as a way to avoid designating wilderness because there are few if any pristine environments to be found anymore). Accepting such a relative scale *a priori* may avoid the controversy. The challenge is to determine the lower end of the scale for the “untrammled” character of any marine area to be sure we are not being overly lenient in its application.

Perhaps one of the ways to approach this is to seek out areas that are as free of human influences as possible, and where impacts can be limited or controlled through aggressive protection. The work in Glacier Bay National Park and Preserve to phase out commercial fishing, severely limit the air- and water-quality impacts from cruise ships, and establish areas where motorized vessels are prohibited, as well as the clean-up and source-reduction efforts to address marine debris in the Northwest Hawaiian Islands, are examples of efforts to restore these areas to an untrammled state. For marine wilderness, it may be both how pristine the area is and whether the agency managers have the technical ability and political will to protect its wilderness character.

Another obvious characteristic, probably part of the reason any of these sites might be called untrammled, is remoteness. Each is far enough away from population centers so that the effects of humans are limited, again with the exception of marine debris in Northwest Hawaiian Islands. Geography seems to provide the only partial refuge from “civilizing” influences.

These areas also contain fine examples of particular habitats, such as the coral reefs at Tortugas and Northwest Hawaiian Islands and the inshore marine areas of the Gulf of Alaska at Glacier Bay. Having these ecosystem exemplars provides opportunities for research needed to understand and better manage marine protected areas elsewhere.

Being at sea is uniformly dangerous. Many lives have been lost as the result of the fury of the ocean environment, considerably more than in any wilderness on land. Recently it has been determined that the most dangerous occupation in the USA is that of commercial fisherman, and there are many monuments in coastal communities that mourn such losses. There are also some fearsome creatures in the sea that, when encountered, can equal or exceed the thrill and sense of dread one feels when confronted with a grizzly bear.

Individuals, with some preparation and dogged determination, can and have taken up residence in terrestrial wilderness. We have not yet figured out a way to colonize the ocean, although this form of pioneering is the fodder of many science fiction novels. For marine wilderness, the language of the Wilderness Act that holds that wilderness is a place “where man himself is a visitor who does not remain” perhaps might be measured in terms of how frequently the area is visited or how consequential those visits are with respect to the quality of the wilderness experience. For some areas like Glacier Bay, visited by a considerable number of cruise ships each season, the critical question might be whether the wilderness experience is degraded by this visitation.

The ultimate question regarding marine wilderness is whether the future of these areas is more dominated by natural processes or not, and what level of management is needed to sustain the areas’ wilderness character. If we have to work too hard to keep

or make a place wilderness, it probably isn't. While we strive for a criteria-based definition, perhaps we need a gestalt approach: we may not know how to define wilderness, but we know it when we see it.

How do we protect it?

Marine wilderness, as a relatively recent expansion of the concept, can benefit from the nearly thirty-year experience of terrestrial wilderness managers. While there has been some concern expressed about the progress of wilderness management within the wilderness community (Sellars 2000), the responsible agencies, especially NPS (see particularly Director's Order #41), have given considerable thought to how we effectively protect wilderness. In the process of developing first principles for marine wilderness, what has been learned is extremely useful.

Surveying the body of information on the management of wilderness, a number of elements rise to the surface that may help to answer the "how to" question for marine wilderness. While the fit may not be perfect, the concepts are instructive.

Minimum requirement analysis. Under provisions of the Wilderness Act, agencies are required to conduct an analysis of whether a given activity is appropriate and if so, how it can be done with minimum impact on the wilderness qualities of the area. Guidance has been provided on how this determination is conducted, and a "Minimum Requirement Decision Guide" developed by Arthur Carhart National Wilderness Training Center is available on its Web page (ACNWTC 2001). Clearly, activities, including management actions, can significantly affect the wilderness experience, and some similar analysis would be appropriate for marine wilderness.

Backcountry access permitting. One way that impacts on wilderness qualities are minimized is to limit human use of the area. National parks require special permits in very sensitive areas to limit access. While limiting access in open ocean areas presents some challenges, the concept is already being tried in the Tortugas Ecological Reserve.

Roadless policy. With some limited exceptions, no roads are permitted in terrestrial wilderness, and motorized vehicles are excluded. Clearly, there are no roads in the ocean, but there are designated shipping lanes and customary routes between ports that vessels are more likely to use on a regular basis, as well as certain offshore areas where vessels often travel to engage in some activity (such as fishing). The message here might be that marine wilderness should not include designated shipping lanes, customary inter-port routes, or areas where vessels are likely to congregate. The use of motorized vessels for access to many offshore areas may be unavoidable, but the way to provide safe access might be determined through minimum requirement analysis. For some inshore areas, vessel access might reasonably be limited to canoes and kayaks, as in wilderness areas in Glacier Bay National Park and Preserve.

Limited accommodation of rights-based prior uses. The Wilderness Act and various implementing policies afford a special status to rights-based prior uses such as mining, grazing, and, in places, motorized vessel and aircraft use, but within strict limits.

While private ownership of ocean waters and the seabed is very limited, leasing for hard minerals and oil and gas extraction are reasonably common in coastal waters, and aquaculture facilities involve exclusive-use issues. Aquaculture activity may be somewhat analogous to grazing, and has been equally controversial. Oil and gas, hard minerals, sand and gravel and (perhaps soon) gas hydrate mining all could be construed as "mining activities" under the Wilderness Act. Policies mandating acquisition of mining rights for marine wilderness could provide an interesting strategy for marine minerals and hydrocarbon leases. At least in the National Marine Sanctuary Act, a mechanism exists that requires certification of existing leases when a site is designated, and can be conditioned if necessary and appropriate (but usually boundaries are crafted to avoid including such existing uses). The trick here will be to provide reasonable accommodation, when it is appropriate, without "giving away the

farm” in terms of preserving wilderness values.

Under this heading, there is a special case of “rights-based prior uses” that will likely emerge in discussions of marine wilderness. This has to do with the issue of commercial fishing. Under the Wilderness Act, all commercial activities are prohibited, except for those that are needed to enhance appropriate recreational use. Presuming that the model of banning commercial activities from the Wilderness Act is carried forward into marine wilderness, commercial fishing would be prohibited. The ocean, seabed, subsoil, and the living and non-living resources there are owned in common by the people of the USA, and the agencies act as stewards for the owners. Many fishermen, however, believe they have ownership rights over their fishing grounds, and maintain that if you take this “right” away, they must be compensated (See Barr, this volume). While challenging precedents may have been made in “compensating” fishermen for displacement from wilderness areas of Glacier Bay, this approach is not economically viable in larger areas with more extensive fisheries, and may greatly impede progress generally with regard to preserving marine wilderness.

Other issues. There are several other issues related to terrestrial wilderness management that could also apply to the marine realm, including the need for wilderness plans, greater accountability among wilderness managers (Sellars 2000), wilderness training, and a strong commitment to effective enforcement. These tools and strategies provide a good start to developing effective protection of marine wilderness. Undoubtedly others will be needed, but utilizing what is already available helps us avoid having to reinvent the good existing tools.

Concluding observations

Marine protected area managers have much to learn from terrestrial wilderness managers—and the latter might also learn a thing or two in this cross-talk. Most wilderness values are common to both land and sea. The Wilderness Act (appropriately amended to include agencies such as NOAA with marine preservation authority) would provide a solid foundation for identifying and designating marine wilderness. In addition, expanding our collective perception of wilderness to include marine wilderness would broaden the base of public support for wilderness generally, and provide us with additional opportunities to do the job effectively.

Perhaps a more critical issue is whether we need marine wilderness. Is this something that is significantly different from elements of existing marine protected area programs? Looking again to existing land-based wilderness for guidance, these areas can provide considerably more to the quality of our lives than traditional resource protection programs. Americans have a heritage of exploration and a collective drive toward wild areas. Wilderness is part of who we are as a people. Oceans are our last true wilderness: “inhospitable, alien, mysterious, and threatening” but also “beautiful, friendly, and capable of elevating and delighting us” as wilderness is so eloquently, albeit unexpectedly, described in dictionaries. Wilderness, novelist Wallace Stegner has said, “is part of the geography of hope.” Marine wilderness seems to be unquestionably part of that geography.

The views expressed herein are those of the author and are not meant to reflect in any way policies, positions or views of the Department of Commerce, NOAA, or any of its sub-agencies.

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