

EDITORIAL

Marine Ecosystems: Potential New Conflicts and a Challenge for NAEP's Leadership

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A recent report has unusual significance for environmental professionals: *America's Living Oceans: Charting a Course for Sea Change*.¹ *Oceans*, from the Pew Oceans Commission, is a provocative overview of the utter inadequacies of current policy to protect marine ecosystems. Although these ecosystems started the 20th century in good shape, their status at the start of the 21st century can only be described as disheartening and alarming. All of the good thinking in this special issue on conflict resolution will be needed to grapple with the issues raised by *Oceans*!

Oceans assesses the 4.5 million square miles of ocean territory under the exclusive economic management of the United States. This area, 23% larger than the land area of the United States, is of amazing economic and ecological significance. From fisheries to tourism to attractive living places, the coastal areas and exclusive economic zones are a vital part of America today.

Although *Oceans* has not yet had the scrutiny of the entire scientific and policy community, it is likely to be the foundation for serious debate about ocean policy during the next three years. This will include, of course, the next presidential election, so it may end up being a point of difference among various candidates.

Environmental professionals individually, and the National Association of Environmental Professionals (NAEP) as an organization, need to develop an appropriate re-

sponse to the *Oceans* report. First, consider the major points made by *Oceans*:

- Nonpoint source pollution is high and likely to grow higher. This includes oil equal to the volume spilled by the *Exxon Valdez* every eight months, nitrogen, and other pollutants that degrade the waters of estuaries and open oceans.
- Point source pollutants, too, are significant. Included here are runoff from animal feedlots, cruise ships, and innumerable industrial and commercial enterprises.
- Invasive species continue to enter the United States' waters, and they can cause havoc with commercial and noncommercial indigenous species.
- Coastal aquaculture releases "farm animals" that are somewhat like invasive species. In addition, the manure and other nutrient inputs from these operations rival that of small cities.
- Coastal development continues at a high rate. Many people actively seek the coastal areas as places to live, but the ensuing sprawl destroys wetlands, creates runoff with toxic materials, and fragments wildlife habitat. Recreational uses of the coasts also disturb wildlife habitat and behavior.
- Overfishing is a serious problem, both economically and ecologically. It appears that one of the hardest things to do is get people out of hunting species that, one by one, are at or approaching economic extinction. In the long run all suffer, but short run considerations often prevail.
- Fishing equipment can be highly destructive to the marine habitat. Trawling and dredging alter the ocean bottoms in ways that inhibit support of plant, invertebrate, and vertebrate species.
- Bycatch is another consequence of modern fishing practices. Approximately 25% of the haul can be noncommercial catch that must be discarded. This amounted to

about 60 billion pounds per year in the 1990s.

- Climate change will almost certainly affect the oceans. Loss of ecosystem productivity may result, with catastrophic results for fisheries. If climate change altered the thermohaline circulation patterns in the Gulf Stream, extremely severe temperature changes could affect vast areas of the earth.

Despite the significance of ocean ecosystems, work done by NAEP members tends to be terrestrially oriented. The laws driving this work are aimed at environmental problems on land. For example, the National Environmental Policy Act (NEPA) does not mandate examination of specific impacts. Neither the Clean Water Act nor the Clean Air Act focus on marine ecosystems. Thus, up to now, NAEP members have not had to consider marine issues in as much depth as terrestrial ones.

In the years to come, however, it is highly likely that NAEP members will need to devote more attention to impacts on marine ecosystems. Now is the time NAEP members should exert leadership. Many terrestrial events have significant impacts on marine ecosystems, and NAEP members are some of the most experienced practitioners in the nation in these fields.

For example, the NAEP's NEPA Working Group might develop new tools that would be more sensitive and attuned to impacts on marine ecosystems not previously analyzed. The Transportation Working Group might develop better ways to avoid and minimize impacts of transportation infrastructure. This would include developments many miles from the coast that nevertheless have an impact on coastal and marine processes.

The Training and Higher Education Working Group should examine curricula and training courses for their attention to marine issues. Members who work with

environmental management systems, similarly, should see if their protocols are fully cognizant of marine issues.

Improvements from environmental regulation on land have been highly significant and beneficial over the past 30 years.² Now is the time to devote more attention to endangered ocean ecosystems. If we do not, we can only expect great damages and even greater conflicts.

Notes

1. Pew Oceans Commission, 2003, *America's Living Oceans: Charting a Course for Sea Change*, Pew Oceans Commission, Arlington, VA.
2. US Environmental Protection Agency, 2003, *Draft Report on the Environment 2003*, US Environmental Protection Agency, Washington, DC.

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