

January 25, 2002

Admiral James D. Watkins
Commission on Ocean Policy
1120 20th St., NW
Suite 200 North
Washington, DC 20036

Dear Admiral Watkins,

Thank you for your letter of December 12 including follow-up questions from the Commissioners. I am pleased to include my responses below:

1. *We are tasked by the Oceans Act of 2000 to give equal consideration to environmental, technical feasibility, economic and scientific factors in making our recommendations. You presented a compelling case that we must take action on several fronts to limit utilization of marine resources. Have you done any studies to measure the economic impact of what you are recommending? If so, please provide that information.*

Assuming your question pertains to the economic impacts of creating a national system of marine protected areas (MPAs), including areas closed to destructive fishing practices and other areas closed permanently to all resource extractive activities, the short answer is no. However, we fully realize that limiting some types of utilization of marine resources may have economic impacts over the short term. But the history of marine resource use in the U.S. attests to the disastrous results of continually seeking to maximize short-term economic gains without adequate care to ensure the ecological sustainability of human activities. For example, by the mid-1990s, overfishing of New England's groundfish stocks had led to annual losses estimated to exceed \$350 million in gross income and roughly 14,000 jobs.¹ These collapses cost taxpayers \$60 million through a series of emergency supplemental appropriations.² Nationally, since 1994, more than \$550 million of U.S. taxpayers' money has been spent or was proposed to be spent to compensate for U.S. fisheries mismanagement.³

Restoring the health and integrity of marine ecosystems requires additional limits on some activities, including fishing, and we believe it cannot be accomplished without implementing an adequate national system of marine protected areas. Scientific studies have demonstrated that the greatest range and magnitude of conservation benefits are associated with MPAs closed to all fishing and other extractive uses. Consequently, we believe it is essential that a national system of MPAs include no-take marine reserves that are permanently closed to all fishing and other extractive activities

¹ Fordham, S.V. 1996. *New England Groundfish: From Glory to Grief. A Portrait of America's Most Devastated Fishery*. Washington, DC: Center for Marine Conservation. 196 pp.

² Marine Fish Conservation Network. 2000. *The Costs of Fisheries Mismanagement to Taxpayers and Proposed Management Solutions*.

³ Ibid

Although there will likely be economic costs to such limitations, we believe they are warranted to ensure the long-term sustainability of our ocean ecosystems. Moreover, this approach is supported by sound science. For example, a recently published study in the journal *Science*⁴ found that no-take marine reserves off the Eastern Caribbean island of St. Lucia and the Florida coast have enhanced adjacent fisheries. According to the study's authors, "within 5 years of creation, a network of five small reserves in St. Lucia increased adjacent catches of artisanal fishers by between 46 and 90%, depending on the type of gear the fishers used. In Florida, reserve zones in the Merritt Island National Wildlife Refuge have supplied increasing numbers of world record-sized fish to adjacent recreational fisheries since the 1970s."⁵

In conclusion, the Ocean Conservancy's policies and recommendations are grounded in the best available science, and are intended to conserve marine biodiversity and restore the health of marine ecosystems, which will in turn be able to support ecologically sound utilization of marine resources by present and future generations. It is clear that the ecological health of America's oceans, and the economic vitality of ocean-related industries and communities, can only be achieved through a shift away from the crisis management approach that has typified resource management practices to date, and toward an ecosystem approach with an emphasis on long-term sustainability.

2. *What is the most effective means by which we can identify marine areas, which should be protected? What criteria are most important in selection?*

There is a large and growing body of literature on this topic. Typical criteria include:

- Ecological criteria: presence of critical habitats for threatened or endangered species, ecological representativeness, uniqueness, high biodiversity, naturalness;
- Cultural criteria: presence of significant artifacts, areas of high aesthetic value, areas of high social or heritage value, scientific value (e.g. for research);
- Economic criteria: costs of any displaced activities, benefits of enhanced activities; and
- Feasibility: enforceability, political support, present and predicted future ecological health, legal/jurisdictional considerations.

⁴ Roberts, C.M., J.A. Bohnsack, F. Gell, J.P. Hawkins and R. Goodridge. 2001. Effects of Marine Reserves on Adjacent Fisheries. *Science*. 294: 1920-1922; Malkakoff, D. 2001. Reserves Found to Aid Fisheries. *Science*. 294: 1807-1809

⁵ Roberts et al. (2001)

The appropriate site and design of individual MPAs should be strongly influenced by the specific objectives of the site, such as protecting rare or threatened species, supporting fisheries management, providing areas for scientific research, enhancing recreational opportunities, preserving natural or cultural heritage, or conserving biodiversity. In addition, it is important to consider how an individual MPA will contribute to a system of reserves to conserve the full range of marine biodiversity.

Marine ecosystems are highly interconnected. Most marine organisms are quite mobile during at least some stages of their lives. As a result, the conservation effectiveness of any one MPA is necessarily limited by the fact that many of the organisms within will originate, and/or spend significant parts of their lives, elsewhere. Thus, many studies are focused on identifying areas that are sources of larvae of commercially or ecologically important species, and on the dispersal patterns of these larvae, and on knitting such information together to decide the appropriate number, size and spacing of reserves in a system. Because the patterns of larval production, dispersal and other key reproductive parameters vary among species, regions, seasons and years, this is a tremendously complex undertaking.

For further study of the scientific analyses underlying The Ocean Conservancy's position on the selection and design of MPAs, I would recommend various documents published by IUCN -- The World Conservation Union⁶, and a recently-published paper by Callum Roberts and others in Conservation Biology. The authors look beyond the design of individual MPAs to the design of marine reserve networks.⁷ They recommend that networks encompass significant fractions of habitat, span regions that are physically and ecologically connected, and consist of fully protected reserves within larger marine protected areas. Roberts *et al.* contend that every biogeographic region should have its own marine reserve network, scaled to the size of the region and that "together, these networks should form systems of reserves that will encompass the full spectrum of biodiversity."⁸

We also believe that the process of identifying marine areas for protection must be an inclusive one that involves the local community. In this context, the open and inclusive process which was recently used to establish the Tortugas Ecological Reserve could serve as a model for other communities around the nation.⁹

⁶ For example: Salm, R.V., J. Clark, and E. Siirila. 2000. *Marine and Coastal Protected Areas: A guide for planners and managers*. IUCN. Washington, DC. Xxi, 371pp; Kelleher, G. 1999. *Guidelines for Establishing Marine Protected Areas*. IUCN, Gland, Switzerland and Cambridge, UK. Xxiv, 107pp.

⁷ Roberts, C.M., B. Halpern, S. Palumbi, and R.R. Warner. 2001. Designing Marine Reserve Networks: Why small, isolated protected areas are not enough. *Conservation Biology In Practice*. 2(3): 10-17.

⁸ Roberts *et al.* (2001)

⁹ The Senate Commerce, Justice, State and the Judiciary fiscal year 2002 appropriations report found that "...NOAA skillfully facilitated a broad discussion regarding the Tortugas Ecological Reserves in Florida and recommends that similar approaches to designating marine protected areas be applied in the future." Senate Report 107-42 - Making Appropriations For The Departments Of Commerce, Justice, And State, The Judiciary, And Related Agencies For The Fiscal Year Ending September 30, 2002, And For Other Purposes. This report language was subsequently adopted in conference in House Report 107-278.

In conclusion, based on the criteria discussed above and drawing on successful processes like the Tortugas, we believe it is critically important that the U.S. move aggressively to establish an adequate national system of MPAs which includes no-take marine reserves. Located in each region, selected and designed to meet specific, measurable objectives, an initial series of no-take marine reserves could serve as a foundation for a truly national and integrated system of marine reserve networks.

3. You said "one-half of 1% of the U.S. EEZ is marine sanctuaries." Have you done a calculation of restricted areas (not just restricted for fishing) that fall under all regimes (CZM restrictions, OCS, MPA, MMA, sanctuary, marine reserves, monuments by all sources of jurisdiction [tribal, local, state, and Federal (all agencies)]? If so will you share with us?

We have not performed such a calculation. In response to Executive Order 13158: Marine Protected Areas (May 26, 2000), however, NOAA and other agencies are currently conducting an inventory of U.S. MPAs. The Executive Order includes the following directive regarding information on marine protected areas:

The Secretary of Commerce and the Secretary of the Interior shall establish and jointly manage a website for information on MPAs and Federal agency reports required by this order. They shall also publish and maintain a list of MPAs that meet the definition of MPA for the purposes of this order.

The MPA inventory is partially completed and available on the web at: <http://www.mpa.gov>. The database of information being gathered includes the various types of restrictions imposed by the sites.

As I pointed out in my testimony, only one-half of 1% of the U.S. EEZ is designated as part of the national marine sanctuary program. Unfortunately, because most marine sanctuaries do little or nothing to limit the impacts of fishing (which can, and in many cases has had, dramatic impacts on both target and non-target species and their habitats), even this statistic fails to capture the full extent of the problem. For the reasons discussed above, we believe that the more critical statistic is that less than one one-hundredth of 1% of the EEZ is protected in permanent, no-take marine reserves.

Admiral Watkins, thank you again for the opportunity to testify before the Commission and to respond to your questions. My staff and I look forward to continuing our dialogue during the Commission's deliberations. Meanwhile, please don't hesitate to contact me if you have any additional questions or would like copies of any of the references I have cited.

Sincerely,

Roger Rufe
President