NATIONAL PARKS CONSERVATION ASSOCIATION

Protecting Parks for Future Generations

Comments by Mary Munson
National Parks Conservation Association
Hearing of the U.S. Commission on Ocean Policy
Wednesday, October 30, 2002

My name is Mary Munson, Director of the Marine Program at the National Parks Conservation Association. My purpose in speaking is to urge you to consider three considerations for incorporation into the Commission's report. First, we urge you to express strong support for employing Marine Protected Areas (MPAs) as tools to achieve resource protection and healthy marine ecosystems. Second, we request that you acknowledge the prominent role that National Parks can play in furthering an effective Ocean Policy agenda. Finally, we ask you to look into innovative mechanisms to promote interagency cooperation and collaboration.

Recommendation One: Marine protected areas (MPAs) are gaining wide acceptance as major tools of an effective ocean policy. These zones are effective fishery management tools because they reduce fishing mortality, leading to increases in abundance of spawning fish and enhancing yields in nearby fished areas.

A recent scientific paper in the respected scientific journal *Coastal Management* cites several scientific papers supporting the statement that "[t]here is a growing consensus that MPAs should be an integral component of any marine management plan, including fisheries management programs."[1] There is overwhelming evidence that no-take reserves benefit fish populations. The science journal *Fisheries Research* has published a report stating that "it has been demonstrated that abundance, mean size of individuals, and spawning biomass of exploited populations tend to be greater inside no-take reserves than in comparable areas subject to harvesting."[2] A well-documented study by Darlene Johnson *et. al*. concluded that a no-take reserve within Kennedy Space Center in Florida had significant beneficial effects on a variety of populations.[3] And according to James Bohnsack, Research Fishery Biologist at the National Marine Fisheries Service Southeast Fisheries Science Center in Miami, no-take marine reserves have many benefits, including protecting ecosystem structure and function and benefiting fisheries in

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[1] Alder, Jacqueline, Dirk Zeller, Tony Pitcher, Rashid Sumaila, A method for evaluating marine protected area management, *Coastal Management*, Vol. 30, Taylor & Francis, 2002 p. 121.
[2] Rowe, Sherrylynn, Population parameters of American lobster inside and outside no-take reserves in Bonavista Bay, Newfoundland, Fisheries Research Vol. 56, 2002 p. 167.
[3] Johnson, Darlene R., Nicholas A. Funicelli, James Bohnsack, "Effectiveness of an existing estuarine no-take fish sanctuary within the Kennedy Space Center, Florida," *North American Journal of Fisheries Management,* Vol. 19, 1999, p. 436.

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surrounding areas.[4] Bohnsack points to the successful example at St. Lucia's no-take reserve, where total fish biomass has doubled and landings increased up to ninety percent within five years of closing part of the coral reef to fishing.[5] Dr. Callum Roberts co-authored the study analyzing the positive benefits of the St. Lucia reserve, citing the local fishermen's initial skepticism followed by their increased catches due to the fact that the no-reserve MPAs serve as a nursery for nearby fisheries.[6] Both Cape Canaveral and St. Lucia offer example of success in waters of the relatively nearby South Atlantic and Caribbean.

According to the World Wildlife Fund (WWF), fish live longer and grow larger within reserves, and as the numbers increase fish leave the reserve and enter fishing grounds.[7] WWF cites several examples: the sizes of Nassau grouper in the Bahamas Exuma Cays are six times greater in the reserve than outside of it, in the western US, the number of rockfish eggs and larvae originating in one reserve is fifty-five times greater than outside the reserve, catch per unit effort increased one-hundred ten percent in fishing grounds close to Mombassa Marine National Park in Kenya, and there is a reported increase in catches close to Spain's Tabarca Marine Reserve up to eighty-five percent.[8] Fishermen reportedly congregate at the boundaries of the marine reserves in the Florida Keys,[9] providing good anecdotal evidence that these reserves benefit fisheries.

The National Park System Advisory Board points out that the strictly-enforced no-take reserves in the area of the Channel Islands National Park have resulted in thriving populations of marine creatures within park boundaries.[10] Another national park example is in the Dry Tortugas National Park, which has been a no-take reserve for spiny lobster since March 1974. In a study conducted between 1996 and 1999, spiny lobsters found within the unfished sections of the park were the largest and most abundant sexually mature lobsters in the entire Florida Keys reef tract.[11] The National Park System itself therefore boasts excellent examples showing the benefits of no-take MPAs for fisheries.

Other examples of documented successes include data that suggests that no-take reserves in Bonavista Bay, Newfoundland offer increased survival to the American lobster, and evidence of greater fecundity, size and abundance of spiny lobsters at the Tonga Island Marine Reserve in

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[4] Bohnsack, James, New evidence that no-take marine reserves benefit fisheries, *Coastlines: Information about Estuaries and Near Coastal Waters*, Iss. 12.2, UMASS Boston, April 2002, p.7.
[5] *Id.*
[6] See, National Public Radio, All Things Considered interview with Callum Roberts, www.npr.org/programs/a…marine_reserve/011203.marine_reserve.html, Dec. 3, 2001. This mentions that the study was documented in the Nov. 30, 2001 issue of *Science*.
[7] World Wildlife Fund, *Marine Reserves: Like Money in the Bank*, WWF Endangered Seas Campaign, Washington DC (no date).
[8] *Id*.
[9] *Id.*
[10] NPS Advisory Board, *Rethinking the National Parks for the 21st Century: NPS Advisory Board Report 2001*, NPS, p. 18.
[11] U.S. Dept. of Interior, NPS, *Record of Decision*, Final General Management Plan Amendment/Environmental Impact Statement, Dry Tortugas National Park, Florida, July 27, 2001.

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New Zealand.[12] Worldwide, fisheries managers have embraced the concept of no-take marine reserves, and fishermen are experiencing benefits.

No-take marine reserves are widely advocated as a means for managing resources[13] and have shown evidence of effectiveness, but are not entirely free from controversy. The American Sportfishing Association (ASA) opposes no-take reserves, citing Dr. Robert Shipp's research as supporting ASA's contentions that MPAs are ineffective as a fishery management tool, and that banning sportfishing would not be based on sound science.[14] We point out that ASA's contentions run counter to the significant support for MPAs in scientific literature. Some of the articles that support MPAs include disclaimers that while strong scientific evidence exists in favor of MPA effectiveness, complete scientific validation is still being sought.[15] But even in the unlikely event science does not provide conclusive proof of MPA success, the huge numbers of reported success stories provide convincing circumstantial evidence that MPAs, at a minimum, should be considered and tested. It should also be stated that the ASA does not represent all anglers or fishermen. One of the speakers that preceded me today, who represents a large sportfishing organization, expressed support for MPAs and illustrates this point.

An additional argument against MPAs worth noting and addressing is the contention that where there is open access (no fishery limitations) outside MPAs, a rise in yield inside the MPA will lead to increased effort outside the MPA and "eat up" any benefits to the overall ecosystem.[16] The conclusion of this argument is that using catch limits and other methods to optimize fishing throughout the region (outside and within the MPA) would be preferable. Two Norwegian economists, however, argue persuasively against this as a deterrent for MPAs, contending that it disregards the management costs of implementing and enforcing these other methods.[17] And finally, most important, in this circumstance there is no suggestion that there be "open access" outside the no-take reserve MPA. The FWCC and the South Atlantic Fishery Management

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[12] Davidson, R.J., E. Villouta, R.G. Cole, R.G.F. Barrier, Effects of marine reserve protection on spiny lobster (*Jasus edwardsii*) abundance and size at Tonga Island Marine Reserve, New Zealand, *Aquatic Conserv: Mar. Freshw. Ecosyst.* Vol. 12 , 2002, p. 213. The mean abundance increased by 22%, 5 years after the reserve's establishment, indicating an annual population increase of 4.4%. *Id.*

[13] See, Pollnac, Richard B., Brian R. Crawford, Maharlina L.G. Gorospe, Discovering factors that influence the success of community-based marine protected areas in the Visayas, Philippines, *Ocean & Coastal Management*, Vol. 44, Elsevier, 2001 p. 683.

[14] American Sportfishing Association, No-take marine protected areas as a fishery management tool, a pragmatic perspective, http://www.asafishing.org/content/govtaffairs/gais_nfz_sci.cfm, June 14, 2002.

[15] This was discussed at length in Jennings, *Op cit*. pp. 209-227. Jennings discusses empirical ways to measure success using factors such as population sizes, increase, and compensation and depensation in the spawner-recruit relationship. He acknowledges that empirical measures of recovery rates are scarce, and that stronger experimental designs are needed (p. 227).

[16] Armstrong, Claire, Siv Reithe, Comment: marine reserves: will they accomplish more with management costs?, *Marine Resource Economics*, Vol. 16, p. 165 2001.

[17] *Id*. At 165. The economists also argue that besides management costs, the other management methods require substantial research, data collection, and monitoring of effort and catches necessary to calculate and set optimal stock and harvest levels. These things are very costly, making other approaches more expensive than simply enforcing the MPA.

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Council will continue to monitor and manage fishing outside the park and MPAs, ad NPCA is confident that their decisions will ensure that fishermen will enjoy the productivity benefits of the MPA without allowing an unwise level of increased exploitation. NPCA is confident that this argument has been discredited.

In fact, evidence of the weakness in the arguments of the relatively small minority of MPA opponents is the current status of MPAs as a priority on the national agenda. The growing acceptance of MPAs as management tools has culminated in a Presidential Executive Order in 2000 requiring U.S. agencies to strengthen the management, protection, and conservation of existing MPAs and establish new or expanded MPAs in the United States.[18] While the definition of MPAs in the Executive Order is broad, it includes no-take reserves,[19] and sets up a policy directive that points towards research leading to establishment of no-take reserves.

It is worth noting that MPAs can address the deleterious effects of fishing and fishing gear on non-target species, the environment as well as address fish abundance.[20] The International Union for Conservation of Nature and Natural Resources (IUCN) has recommended that MPAs be designed to simultaneously accomplish as many conservation objectives as possible.[21] A major issue that NPCA considers crucial a sound ocean policy is addressing threats to coral reefs, since coral reef ecosystems are one of the nation's most valuable environmental resources, and are threatened by damage from fishing gear and by overfishing. Coral reefs in the U.S. and around the world are in crisis.[22] In 1998, the World Resources Institute published results of a global coral reef survey, and concluded that sixty per cent of the world's reefs are now threatened by human activity.[23] A task force of U.S. government agencies estimates that ten per cent of all coral reefs are degraded beyond recovery.[24] The realization that urgent action is necessary prompted the U.S. President to issue an Executive Order in 1998 and to create the U.S. Coral Reef Task Force to pursue ways to save our dwindling national coral reef treasures.[25] One of the primary recommendations of the Task Force is to designate at least five per cent of all coral reefs in each major island group and Florida as no-take reserves by 2002; at least ten per cent by 2005, and at least twenty per cent by 2010.[26] This recommendation is consistent with endorsement of

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[18] U.S. Executive Order 13158 Marine Protected Areas, May 26, 2000.

[19] "Marine protected area" means any area of the marine environment that has been reserved by Federal, State, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein. *Id.* Sec. 2(a).

[20] *Supra*, n. 1.

[21] Salm, Rodney V., *et. al., Op. cit.,* p. 14.

[22] See, e.g. Whitty, Julia, Shoals of time: are we witnessing the extinction of the world's coral reefs? In *Harper's Magazine*, Vol. 302, no. 1808, Jan. 2001 pp. 55-65; Hinrichson, Don, Coral reefs in crisis, *People and the Planet,* Vol. 6, no. 2, WWF, 1997 pp. 6-11.

[23] Hinrichson, Don, Reefs at risk, *Defenders*, Vol. 74., no. 3, 1999 p. 8.

[24] U.S. Coral Reef Task Force, *National action plan to conserve coral reefs*, Washington, DC, March 2000, Available at http://coralreef.gov/CTRFAxnPlan9.PDF, p.3.

[25] U.S. Executive Order 13089 Coral Reef Protection, June 11, 1998

[26] U.S. Coral Reef Task Force, *Op. cit*. 20.

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MPAs by the National Research Council, the principal operating arm of the National Academy of Sciences and the National Academy of Engineering,[27] and other scientists.[28]

MPAs are recognized tools to help recover depleted fish stocks, and are also excellent tools for protecting coral reefs and other marine resources. NPCA believes that a sound National Oceans Policy must include support for MPAs as a tool for resource protection and enhancement.

Recommendation Two: Our National Park System is home to 50 park units with marine components, and has a statutory mandate to protect marine resources while providing for education and recreation. Marine Parks offer an excellent opportunity to serve as models for new marine management techniques.

The National Park Service is perfectly positioned to implement innovative marine management approaches, including and beyond the MPA and Coral Reef Executive Orders. Under the National Park Service Organic Act, the Park Service is charged with conserving and providing for the enjoyment of park resources in a way that will "leave them unimpaired for the enjoyment of future generations."[29] This mandate makes marine parks natural candidates for MPAs in places where fish or other marine resources are in jeopardy. Parks have a management regime in place already that provides for a public planning process that can consider and implement MPAs. And because parks inventory and monitor their resources, the benefits of these protected areas can be assessed, and changes made as benefits are demonstrated or disproved.

The National Park Service is ripe for these types of marine management measures. In 2000, the Secretary of Interior pledged that in order to fulfill its mandate under the Coral Reef Executive Order, the National Park Service would revise the General Management Plans (GMP) for its coral reef parks by 2003, considering no-take zones as approaches to protection.

The National Park System Advisory Board (NPSAB) has also pointed the Park Service in the right direction. It stated in its 2001 report:

> "Commercial and recreational fishing pressure has been intense within national marine sanctuaries and many parks and refuges. In fact, significant loss of top predators due to fishing pressure threatens the long-term future of fishing in those areas.
>
> There is a long-held and erroneous belief that marine systems are so vast that their resources cannot be affected by human activities. Current assessments of marine habitats, fisheries, and water quality show otherwise, demonstrating dramatic declines in the health of marine ecosystems worldwide…

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[27] National Research Council, Marine protected areas: tools for sustaining ocean ecosystems, Nov. 2000 at http://books.nap.edu/catalog/1994.html.

[28] Souter, David W., Olof Linden, The health and future of coral reef systems, *Ocean and Coastal Management*, vol. 43, Elsevier, 2000, p. 681.

[29] NPS Organic Act, 16 U.S.C. 1 *et seq*.

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> **To ensure the long-term survival and health of our marine systems, we must create a strategically designed system of no-take marine reserves, covering a broad range of representative marine habitats, especially important to spawning. The Park Service, as one of the federal agencies focused on conserving wildlife for future generations, should play a leadership role in implementing such a system**.
> Marine protected areas, like upland parks, will only be saved in the long run by the enlightened support of the public. The Park Service should think beyond the vision of maintaining sustainable parks to encourage sustainable communities and ecosystems with parks as part of them (emphasis added)."[30]

The National Oceanic and Atmospheric Administration (NOAA) is the lead agency responsible for ocean management. Its Marine Sanctuary Program offers great opportunities to implement MPAs and marine protection measures. But we cannot forget about that the vast array of marine National Parks, from the National Park of American Samoa to Alaska's Glacier Bay, from California's Channel Islands to Florida's Biscayne National Park and Virgin Islands National Park and Monument. These parks are proving grounds for good marine management approaches.

There is a growing recognition within the National Park Service of its national role in marine conservation, but transformation is slow in an agency that has been viewed primarily as terrestrial land manager for over 85 years. But it is changing. The Dry Tortugas National Park recently created a marine protected area in Florida, by working cooperatively with the adjacent marine sanctuary. In October, the California Fish and Game commission approved the Channel Islands network of marine reserves, including waters of the Channel Islands National Park.

The Commission needs to encourage the Park Service to become a major part of the US Ocean Agenda. The Park Service should be encouraged to and rewarded for working with state agencies on joint marine management projects, as Biscayne National Park is doing with the state of Florida by drafting a joint fisheries management plan. The Park Service should encourage its marine park superintendents to cooperate more with NOAA and nearby sanctuaries on joint strategies to protect marine resources. And finally, The National Park Service should be regarded as a leader and important testing ground for implementing MPAs. The depletion of fish stocks and the loss of our nation's coral reef resources call for drastic action. Our marine national parks are perfect candidates for implementing innovative ways to address these problems.

Recommendation Three: Interagency collaboration is essential to the success of the nation's ocean policy. As the commission has often heard, ocean management is complicated by the confusing and often overlapping laws that endow different agencies and levels of governments with jurisdiction over the ocean. Management authority over the water column, subseabed

[30] NPS Advisory Board, *Rethinking the National Parks for the 21st Century: NPS Advisory Board Report 2001*, NPS, pp. 17-18.

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resources, and living marine resources depends upon many factors, such as whether there is some federal or state designation[31], and whether the location is within state or territorial waters. Because jurisdictions vary between federal, state, territorial and tribal jurisdiction, it would be impossible to establish one federal agency with authority over the all U.S. oceans activity. Thus any agency charged with implementing U.S. Ocean Policy, if successful, must play a strong role in promoting interagency collaboration and cooperation.

This morning the Commission heard a presentation from the Major General Robert Griffen, Director of Civil Works for the U.S. Army Corps of Engineers. He testified that Corps projects are increasingly addressing ecological restoration, and he pointed to Everglades restoration and prospective work in coastal Louisiana as examples where the Corps is working on large projects to improve the ecosystem. NPCA encourages the Commission to investigate whether there are aspects of these projects, in particular Everglades restoration, that might serve as useful models for interagency cooperation on ocean issues.

Everglades restoration is one of the largest ecosystem restoration projects ever attempted, spanning sixteen counties and involving numerous state, local, tribal and federal agencies. The project will affect and help restore two significant estuaries, Biscayne Bay and Florida Bay, as well as the enormous wetlands known as the Everglades. Implementation of the project entails a partnership between governments, agencies, and private stakeholders. Stakeholders include farmers, utilities, sportsmen, environmental groups, and other interest groups. The process involves an interagency Task Force, Congressional Committees and state legislators overseeing the process, and an advisory commission representing stakeholders. Each project is carried out in a highly public, open process that encourages exchange of ideas and balancing of interests. The key to its success is a common commitment to the project's overall purposes, and a commitment to the process of achieving consensus.

The public planning processes, interagency Task Force and the stakeholder advisory mechanisms may lend themselves to planning and managing various ocean activities. NPCA participates in the Everglades restoration process as member of the Water Resources Advisory Commission, the stakeholder advisory body, so can provide insights into the effectiveness of the stakeholder process. We believe the advisory process for the Everglades project is superior to the advisory committee process built into the Regional Fisheries Management Council. We would be very happy to speak with you and the Commission Staff about the Everglades model, and how it can be translated to ocean management.

Thank you for the opportunity to present our recommendations. NPCA looks forward to the Commission's report in 2003.

[31] Federal designations could include National Marine Sanctuary, National Park, National Wildlife Refuge and others. States also have a variety of designations.

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