

Integrating The Science of Fishery Management and Marine Protected Areas

This statement describes the working relationship between two upcoming efforts to improve the integration between marine protected areas science and fisheries stock assessment and management. The first is a conference organized by the National Fisheries Conservation Center (NFCC) and the second is a longer (up to two years) technical workshop series to be organized by NOAA Fisheries (Santa Cruz Lab) and NOAA's National MPA Center (MPA Science Institute).

Background

Marine protected areas (MPAs), including no-take marine reserves (a no-take MPA) have arrived front and center in discussions about fisheries management. Ocean resource managers at a variety of levels in the U.S. are evaluating MPAs to accomplish targeted objectives, particularly recovery of depleted fish populations and protection of essential fish habitat. However, these discussions have also highlighted basic differences in perspective and analytical approach among scientists engaged in designing and evaluating MPAs for fisheries management versus biodiversity conservation. These differences affect, for example, conclusions and judgments about:

- Whether MPAs will increase yields in ways that existing management tools cannot
- Whether MPAs and existing management are equivalent in terms of controlling fishing effort
- The extent to which larvae and/or adults will spill over MPA boundaries and the impact of such spillover on fishery yields adjacent to and distant from the MPA
- The means for accounting for existing management constraints on fishing efforts in the design of multiple use MPAs that allow fishing
- Dealing with effort displacement and increased fishing pressure outside an MPA boundary.

While there is broad agreement on the need for resolving such issues, there has been little systematic effort focused in this area. Until this gap is bridged, many MPA planning efforts may remain mired in controversy and confusion about the underlying science. It is this need that the parallel initiatives by the NFCC and NOAA are intended to fulfill.

NFCC and NOAA projects

Two distinct but interconnected projects are planned for FY04-06: (a) the NFCC consensus conference; and (b) a longer-term scientific effort to develop new models and analytical approaches to integrating MPA and fisheries science. These efforts will occur sequentially and have been closely coordinated from their inception through representation and liaison by key individuals in both efforts.

NFCC consensus conference

NFCC's conference (<http://nfcc-fisheries.org/index.php>) is modeled after the National Institutes of Health's consensus conference format (<http://consensus.nih.gov/about/process.htm>), and has the related goals of:

- Identifying and prioritizing the key scientific issues
- Determining the present degree of uncertainty and related constraints on decision making
- Reaching agreement on the scientific studies needed to resolve these uncertainties.

The conference's product will be a set of carefully crafted answers to specific questions that will be developed prior to the conference by a broadly representative planning committee. The conference itself will involve presentations by leading scientists, discussion led by a neutral review panel, and drafting of answers to the conference questions by the review panel.

NOAA workshops

The NOAA led effort is modeled after the NCEAS workshop format, in which scientists are convened several times over a two-year period to analyze and synthesize existing data and information. The working group process is aimed at promoting a culture of collaboration and synergy across disciplines to produce integrative research. NOAA has committed significant funds in FY03, and will seek additional outside funding from partners including the NSF-funded National Center for Ecological Analysis and Synthesis at UC Santa Barbara. The overall goal of the working group is to synthesize a rational and comprehensive approach for integration of MPAs with traditional fishery management through review of important concepts within marine population dynamics and management and the development of novel approaches to predicting and evaluating performance in MPAs. The products of the NOAA led effort will include a workshop proceedings to serve as a blueprint for integrating MPAs with existing fishery science and ecosystem management programs, and a series of published papers on specific technical topics addressed by the working group.

NFCC/NOAA coordination

The NFCC conference will provide an expert-driven starting point for NOAA's subsequent technical workshop series. In particular, the conference questions, which will be available after the planning committee meeting in late November, 2003, will guide planning for the NOAA working group and external grant proposals. In addition, the conference's consensus statement will act as the conceptual framework around which key aspects of NOAA's in-depth technical effort will be designed. Finally, the broadly representative and public nature of NFCC's conference will help educate important constituencies about the scientific issues involved in integrating marine reserves into the fisheries management system.

There are two major benefits to the close coordination between these related efforts. First, the NFCC project will provide an important degree of legitimacy to the process of identifying and beginning to resolve key issues. This emerges from NFCC's position as a neutral, the use of the widely accepted NIH conference format, the public nature of the conference, and the fact that the NFCC conference will use broadly representative groups to articulate the conference questions, present information, and review the available science. Second, NOAA has the resources and mandate to continue from this starting point with a more sustained effort to develop new science and/or management approaches and to incorporate these into marine resource management and policy. NOAA will bring an exceptional degree of scientific rigor to this effort through its ability to draw staff from the Pacific Fisheries Management Council, NOAA Fisheries, the National Ocean Service, and the National Marine Sanctuaries Program to combine their expertise with that of other scientists outside the agency who have expertise in MPAs and marine ecosystems.

The projected sequence of upcoming events is as follows:

- NFCC planning committee meeting in late November 2003
- NOAA proposal to NCEAS in December 2003
- NOAA proposal to other funders (tbd)
- NFCC consensus conference in early 2004 at the Aquarium of the Pacific in Long Beach
- NOAA working group series begins in early/mid 2004
- Working group research papers and reports mid/late 2005.

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