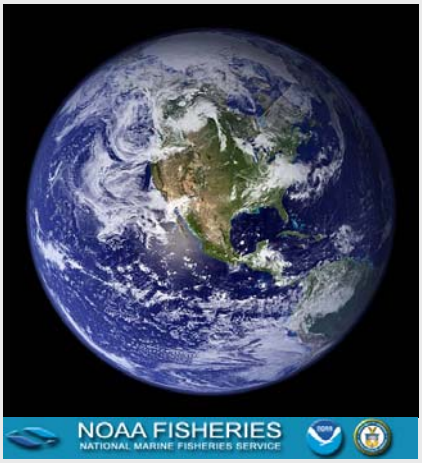
A Brief Overview of the NOAA MPA Science Integration Working Group



Convening Authorities

- NOAA National Marine Fisheries Service
  - Southwest Fisheries Science Center, Fisheries Ecology Division
- NOAA National Ocean Service
  - National MPA Center Science Institute
- Pacific Fishery Management Council – partner in planning

Planning Committee

- NMFS
  - Sustainable Fisheries
  - Protected Resources
  - Habitat and Conservation
  - Science & Technology
- NOS National MPA Center Science Institute
- NOS National Marine Sanctuary Program
- Pacific Fishery Management Council
- MPA Federal Advisory Committee

Funded by NMFS Office Science & Technology ~$80K

Working Group Objectives

- The overall aim of the working group was to develop the scientific information necessary to integrate MPAs within the broader context of fishery science and management, including especially ecosystem based fishery management.
- Specific objectives were to:
  - Discuss the important concepts and issues
  - Engage in scientific research and modeling to develop a rational approach for integration of MPAs with traditional fishery management
  - Produce peer reviewed papers, technical reports, posters and presentations for scientific and professional meetings, that we hope will be useful information to fishery managers

Areas of Expertise of Working Group Members

- Marine ecology
- Population ecology and stock assessment
- Economics
- Sociology
- Management
- Private sector
- Participants approved by Planning Committee

Series of Workshops with Multiple Working Groups

- Initial workshop
  - Introductions
  - Terms of Reference
  - Review and modify draft questions from Planning Committee
  - Breakout into smaller working groups
- WG1 - Fisheries / MPA Ecosystem Modeling Group
- WG2 - Connectivity Working Group
- WG3 - MPAs for Natural Heritage Working Group
- NMFS Santa Cruz Laboratory and NMPAC Science Institute provided logistical support

Connectivity Working Group

- Loo Botsford - UC Davis
- Dan Brumbaugh - Museum Natural History
- Dave Fluharty - University Washington
- Churchill Grimes - NMFS SWFSC
- Julie Kellner - UC Davis
- John Largier - UC Davis
- Michael O'Farrell - NMFS SWFSC
- Steve Ralston - NMFS SWFSC
- Elaine Soulanille - NMFS SWFSC (team coordinator)
- Vidar Wespestad - Resource Analysts International

Natural Heritage Working Group

- Peter Auster - University of Connecticut
- Rikki Dunsmore - NOS NMPAC-SI (team coordinator)
- Andy Rosenberg - University of New Hampshire
- Charles Wahle - NOS NMPAC-SI
- Bob Warner - UC Santa Barbara
- Mary Yoklavich - NMFS SWFSC

Maternal Effects and MPAs Team

Formed later to elucidate links between maternal age dependent processes and spatial fisheries management

- Steve Berkeley - UC Santa Cruz
- Selina Heppell - Oregon State University
- Lisa Krigsman - NOS NMPAC-SI
- Yasmin Lucero - UC Santa Cruz
- Steve Munch - SUNY Stonybrook
- Michael O'Farrell - NOS NMPAC-SI
- Steve Ralston - NMFS SWFSC
- Wade Smith - Oregon State University
- Paul Spencer - NMFS AFSC

Some Working Group Publications

Does MPA mean 'Major Problem for Assessments'? Considering the consequences of place-based management systems

FISH and FISHERIES, 2006, **7**, 284–302

John C. Field[1], André E. Punt[2], Richard D. Methot[3] & Cynthia J. Thomson[1]*

Connectivity, sustainability, and yield: bridging the gap between conventional fisheries management and marine protected areas

Rev Fish Biol Fisheries (2009) 19:69–95

Louis W. Botsford · Daniel R. Brumbaugh · Churchill Grimes · Julie B. Kellner · John Largier · Michael R. O'Farrell · Stephen Ralston · Elaine Soulanille · Vidar Wespestad

Spatial variation in fishing intensity and its effect on yield

Can. J. Fish. Aquat. Sci. **65**: 588–599 (2008)

Stephen Ralston and Michael R. O'Farrell

When do marine reserves increase fishery yield?

Deborah R. Hart

Can. J. Fish. Aquat. Sci. **63**: 1445–1449 (2006)

Fisheries • VOL 33 NO 12 • DECEMBER 2008

Vertical Zoning in Marine Protected Areas: Ecological Considerations for Balancing Pelagic Fishing with Conservation of Benthic Communities

Rikki Grober-Dunsmore, Grober-Dunsmore was a marine ecologist with NOAA Fisheries, Southwest Fisheries Science Center (SWFSC) in Santa Cruz, California, and is presently an associate professor at the University of the South Pacific, Fiji. She can be contacted at dunsmore_L@usp.ac.fj.

Lisa Wooninck, Wooninck is a resource protection specialist with Monterey Bay National Marine Sanctuary in Monterey, California.

John Field, Field is a fisheries biologist with NOAA Fisheries, SWFSC.

Cameron Ainsworth, Ainsworth is now a post-doctoral fellow at the National Marine Fisheries Service in Seattle, Washington.

Jim Beets, Beets is a professor at University of Hawaii—Hilo.

Steve Berkeley, Berkeley's contribution as a research biologist at the University of California Santa Cruz Long Marine Laboratory was invaluable.

Jim Bohnsack, Bohnsack is a fisheries biologist with NOAA Fisheries, Southeast Fisheries Science Center in Miami, Florida.

Rafe Boulon, Boulon is the chief of resource management at Virgin Islands National Park/Coral Reef National Monument.

Richard Brodeur, John Brodziak, Brodeur and Brodziak are fisheries biologists with NOAA Fisheries, Northwest Fisheries Science Center in Newport, Oregon.

Larry Crowder, Crowder is a professor at the Duke Center for Marine Conservation in Beaufort, North Carolina.

Danny Gleason, Gleason is a professor in the Biology Department at Georgia Southern University in Statesboro.

Mark Hixon, Hixon is a professor in the Zoology Department at Oregon State University in Corvallis.

Les Kaufman, Kaufman is a professor in the Biology Department of Boston University.

Bill Lindberg, Lindberg is a professor in the Fisheries and Aquatic Sciences Department at University of Florida in Gainesville.

Marc Miller, Miller is a professor in the School of Marine Affairs at University of Washington in Seattle, Washington.

Lance Morgan, Morgan is chief scientist for the Marine Conservation Biology Institute in Glenn Allen, California.

and Charles Wahle Wahle is a scientist with the National Marine Protected Areas Center in Monterey, California.

COOPERATIVE STRATEGIES IN FISHERIES MANAGEMENT: INTEGRATING ACROSS SCALES

R. M. Fujita, K. T. Honey, A. Morris, J. R. Wilson, and H. Russell

BULLETIN OF MARINE SCIENCE, 86(2): 251–271, 2010

Journal of Applied Ecology 2009, **46**, 735–742 doi: 10.1111/j.1365-2664.2009.01667.x

A framework for assessing the biodiversity and fishery aspects of marine reserves

Phillip S. Levin*[1], Isaac Kaplan[1], Rikki Grober-Dunsmore[2], Paul M. Chittaro[1], Seichi Oyamada[3], Kate Andrews[3,4] and Marc Mangel[3]

Density-Ratio Working Group

ICES Journal of Marine Science (2011), 68(1), 201–211. doi:10.1093/icesjms/fsq151

Can information from marine protected areas be used to inform control-rule-based management of small-scale, data-poor stocks?

Carey R. McGilliard[1*], Ray Hilborn[1], Alec MacCall[2], André E. Punt[1], and John C. Field[2]

How useful is the ratio of fish density outside versus inside no-take marine reserves as a metric for fishery management control rules?

Elizabeth A. Babcock and Alec D. MacCall Can. J. Fish. Aquat. Sci. **68**: 343–359 (2011)

Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science 2:14–27, 2010 [Special Section: Data-Poor Fisheries]
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DOI: 10.1577/C08-026.1

A Management Strategy for Sedentary Nearshore Species that Uses Marine Protected Areas as a Reference

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