

**Florida Keys National Marine Sanctuary
Marine Zoning & Regulatory Review
Ecosystem Protection: Ecological Reserves / Preservation Areas and Wildlife Protection Working
Group Meeting
May 2, 2013**

Working Group Meeting Summary

Meeting Agenda

1. Administrative Announcements & Review Process and Working Group Charge
2. Discussion: Define Key Terms (All facilitated by Beth Dieveney and Stephen Werndli)
3. Discussion: Factors to consider for Ecosystem Protection (All facilitated by Beth Dieveney and Scott Donahue)
4. Presentation: Case Study – Tortugas Zone Performance (Dr. Tracy Zeigler)
5. Presentation: Benthic Communities and Zoning (Dr. Steven Miller)
6. Presentation: Fish Communities and Zoning (Dr. Jerry Ault)
7. Discussion: Question and Answer Session on presentations (Dr. Steven Miller and Dr. Jerry Ault)

Major Points of Discussion

1. Update on progress of the Coral Reef Ecosystem Restoration and the Ecosystem Protection: Ecological Reserves / Preservation Areas and Wildlife Protection working groups.
 - Shallow Water Wildlife and Habitat Protection Working Group:
 - Review and discuss commercial towing and salvage in the FKNMS.
 - Discussion to finalize criteria that will be used to develop options and recommendations.
 - Assessment of existing and proposed Wildlife Management Areas.
 - Coral Reef Ecosystem Restoration Working Group:
 - Review draft framework for identifying potential restoration sites, access to sites, and adaptive management of sites.
 - Discuss managing access and scientific means of evaluating sites.
 - Identify potential sites for active coral reef ecosystem restoration.

Sean Morton, FKNMS Sanctuary Superintendent, reviews the marine zoning and regulatory review process and timeline. The presentation can be found at:
<http://floridakeys.noaa.gov/review/ecosystemprotection>.

Beth Dieveney, FKNMS staff, reviews the ecosystem protection working group meeting plan.

Working Group Discussion:

- Clarified that the synthesis of recommendations from each of the three working groups will be individually presented to the Sanctuary Advisory Council; recommendations from the other two working groups are not intended to be addressed by this working group. However, this working group can use the draft recommendations from the other working groups to inform their discussions.

- Use the best available science to inform this process. Working group members should continue to identify data and information needs; working group member should provide scientific or use datasets they are aware of.

2. Discussion: Define Key Terms.

Beth Dieveney, FKNMS staff, facilitates the discussion of defining “ecosystem protection” as it applies to the working group objectives.

Working Group Discussion (compiled resulting list):

- Holistic approach to understanding and managing the system
- Complete protection of a system
- Natural flow of ecosystem, natural processes
 - Complex interactions, interrelations and interdependence of components in the system
- Sustainable human use; Dynamic human interactions
- Dynamic evaluation based on perspective
 - Consider historical / long-term view
 - Manages by taking broad view / grand scale
- Use best available science
 - Ongoing scientific inquiry to assess, benchmark, document, and predict changes
 - Manages resources by predicting and recognizing future impacts
- Ecological imbalance should trigger a management response
- Spatially represent multiple habitats and species (complete home-range, various life cycles)
- Regulations support health of system
 - Define acceptable uses within space and time
 - No special user group preference
 - Accountability of user groups
- Stakeholders have collaborative role in constructing a holistic management process

3. Discussion: Factors to consider for Ecosystem Protection

Beth Dieveney, FKNMS staff, facilitates the discussion of listing potential factors and criteria to consider for selecting zones for ecosystem protection.

Working Group Discussion (compiled resulting list):

- Physical: productive habitats, connectivity, uniqueness, water quality, consider existing shoreline development
- Ecological / Biological: uniqueness, diversity, resilience, protect habitat types and quality, protect keystone ecosystem processes/species
- Social / Economic: visitors should be educated about system and rules, culture of exploitation, protect marine-based businesses, protection of resources to make good sense for businesses, ecotourism vs extractive uses (balance them), examine high impact activities, enforcement and compliance

4. Presentation: Case Study – Tortugas Zone Performance

Dr. Tracy Ziegler, Dry Tortugas National Park Service Fisheries and Marine Biologist, gave a presentation using the Tortugas region as a case study. Background on the biological, ecological, and socio-economic factors and outcomes are highlighted. Dr. Ziegler provided this presentation on behalf of the National Park Service and Florida Fish and Wildlife Conservation Commission.

Working Group Discussion:

- Discussed the role of oceanographic gyres for the ecology of the Keys and region, noted that the gyres occur and change depending upon the season and physical oceanographic processes.
- Noted that the installation and monitoring to the ‘acoustic posts’ are a multi-agency collaborative effort.
- Discussed the data available related to the movement of mutton snapper and use of the ‘spawning corridor’ route between the research natural area and Riley’s Hump. For more details see: *Implementing the Dry Tortugas National Park: Research Natural Area Science Plan, The 5-Year Report*.
 - Caution against thinking the corridor between research natural area and Riley’s Hump is the only location the fish transit and use heavily.
 - Comment on disapproval of targeting fish during spawning.

Public Comment

Public comment was made by two individuals:

Davis and Laurie Pool, Eternal Seas Memorial. Provided handouts to working group to encourage creation of a new “Memorial Garden/Restoration zone” that could help provide funding for the cause of coral restoration. Summary-propose a patented process which will provide a true ‘burial at sea’ beneath cultivated reefs, and simultaneously, help to fund on-going coral restoration. This is a privately funded endeavor and gives back a ***significant*** amount (20% of each burial) to coral reef restoration and other environmental initiatives.

Propose to use the exact same techniques NOAA uses for mooring buoys, and utilize existing coral transplants and methods from Coral Restoration Foundation, Mote Marine, and The Nature Conservancy. The idea incorporates the need to protect corals and marine resources, cremation activities are on the rise in the Florida and the nation, many people are planning for their ‘after-life’. This does not include other intangible benefits that cannot be quantified.

5. Presentation: Benthic Communities and Zoning

Dr. Steven Miller, NOVA Southeastern University, presented data and science related to the benthic communities in the protected areas of the Sanctuary since targeted study and data collection in the late 1990s.

Working Group Discussion:

- Comparison of benthic communities between Ecological Reserves and Sanctuary Preservation Areas will need further thought and analyses.
- Question regarding effectiveness of Sanctuary Preservation Areas for protecting corals? There has not been evidence during this monitoring program of any change. A state of stasis has been observed.
 - Need to consider ecosystem based management is not managing corals, you are

managing people.

- Octocorals are important for fisheries. There is still a lot of work and analyses to be done between fish communities and their responses to the benthic environment.

6. Presentation: Fish Communities and Zoning

Dr. Jerry Ault, University of Miami's Rosenstiel School of Marine and Atmospheric Science, presented data and science related to the fish communities in the Sanctuary.

Working Group Discussion:

- Discussed fishing pressure and relation to maximum sustainable yield. Species that have a relatively long life span and grow large in size are the most sensitive to exploitation. If these species are protected, other species and ecosystem components will benefit as well. To achieve maximum benefits, protect the super-sensitive species.
 - Maximum economic yield is reached at a lower fishing effort as compared to maximum sustainable yield. The differentiation between economics and broadest use is critical to understand.
- Is data available on the new areas that fishing pressures move to when they are displaced by creation of a no fishing area? Based on size structure and abundance of fish, the capacity for fish to move beyond the reserve boundaries has increased.

Dr. Steven Miller and Dr. Jerry Ault take questions together from the working group.

Working Group Discussion:

- Discussed the proposal of closure for a certain period of time to allow fish to spawn resulting in more fish for the rest of the year. Seasonal closure may be more beneficial than a permanent protected zone. Closures can reduce pressure on fish.
- Discussed the benefits to redistribute protected areas and how best to do this: No quick answers are presently possible. Giving up areas that are currently under protection will need to be balanced against why they were designated as protected areas and what the resource protection needs are now. Adaptive management is a good strategy, for which you need a monitoring program. Accountability in management, compliance and enforcement are also essential.
- Noted that the patch reefs are generally in good shape compared to fore-reef areas and have a lot of variability.
- Noted that the amount of shelf area is highly correlated with productivity and Florida has a large shelf area.
- Discussed the importance of size of protected sites in relation to fish stock enhancement and noted that Sanctuary Preservation Areas (SPAs) are postage-stamp sized, and therefore are not optimal. SPAs are mostly fore-reef habitat, limited habitat type. When designing zoning and other measures for ecosystem protection there is a need to consider that species cover a large range of habitat types over their life time.
- What variables should be considered when recommending non-extractive zones? Complicated answer and analysis, however three key variables that were looked at in the past when creating the Sanctuary management plan and associated zoning scheme included (1) undeveloped shoreline, (2) full range of habitats, and (3) the ability to enforce. Many other variables need to be considered as part of this zoning review process.
- Noted that the correlation between algae cover and coral cover is weak. Loss of coral simply

provides more space for algae to inhabit. Consider *Diadema* die-off as an example. Boom and bust cycles occurring for urchin populations is not unusual.

- Noted that management decisions that allow fish to increase in size can contribute to an increased fish stock in the future. The bigger fish become in size, the higher reproductive capacity it will have. This is good both biologically and economically.
- Discussed potential unintended consequence to designating a location as a special area with no fishing allowed as it could encourage more intense user pressure of other kinds at the specific location.
- Request for aerials imagery of usage on the water. Data is available, however unfortunately, it has not been conducted every year. Data associated with spawning aggregations is available from FWC for the past three years for June, July, and August.
- Noted the importance to consider scale, scope, size, and number of protected areas being considered and how best to meet resource protection goals.
- Noted the importance of ensuring adequate data, data synthesis/analysis and decision-support tools for helping to inform management decisions throughout this process.

Follow-Up Actions for Working Group Members

- Continue to review scientific information provided, identify potential data needs, and reach out to constituent groups to ensure they are aware of and participate in this process.

Decision Items of Note

- No decision items were before the working group at this meeting.