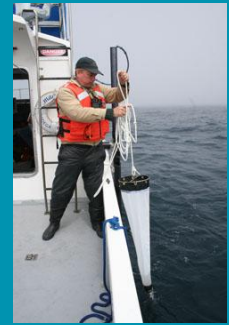


Sanctuary Condition Reports

Florida Keys National Marine Sanctuary

Scott Donahue

Sanctuary Advisory Council Meeting
June 2011



Water Quality



Habitat



Living Resources



Maritime Archaeological Resources

Goals

- Identify why we have condition reports...
- Discuss the process of generating ours...
- Reveal draft status and trends...
- Show how ours fits into the System-Wide Monitoring (SWiM) framework.

What are they for?

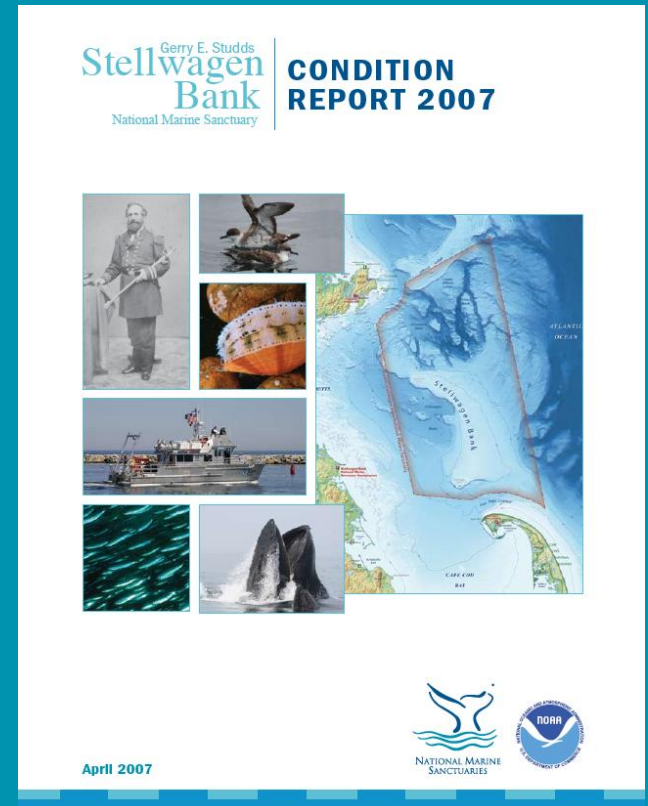
- Ecosystem health in marine sanctuaries is communicated through condition reports.
- Determine if site is achieving its resource protection and improvement goals as reflected in program performance measures.
- Identify information gaps for research and management.

What are they for?

- Serve as an education and outreach tool.
- Serve as a reporting tool to be used by Congress & policy makers, particularly within NOAA and DOC.
- Act as a supporting document for the Management Plan Review Process.

Condition Reports

- A condition report is being written for each Sanctuary
- Stellwagen Bank NMS was first site to complete their report (<http://stellwagen.noaa.gov/>), only two remain to be released.
- 17 questions standard among all sites



Condition Report Details

- Assessment questions relate to:
 - Water
 - Habitat
 - Living Resources
 - Maritime Archaeological Resources
- FKNMS is assessing questions “as a whole”
- FKNMS staff and experts provided assessments
- Currently out for peer review, as required by White House OMB for “Influential Scientific Information”



PEER REVIEW PLAN

NMSP System-Wide Monitoring (SWiM) Condition Reports

In December 2004, the White House Office of Management and Budget (OMB) issued a Final Information Quality Bulletin for Peer Review (OMB Bulletin) establishing minimum peer review standards, a transparent process for public disclosure of peer review planning, and opportunities for public participation. The OMB Bulletin, implemented under the Information Quality Act (Public Law 106-554), is intended to enhance the quality and credibility of the federal government's scientific information, and applies to Influential Scientific Information (ISI) disseminated on or after June 16, 2005. ISI is defined as information that can reasonably be determined to have a "clear and substantial impact on important public policies or private sector decisions."

The National Marine Sanctuary Program (NMSP), in consultation with other NOAA legal and program staff, has determined that the condition reports being prepared as part of the NMSP System-Wide Monitoring (SWiM) program are appropriately defined as Influential Scientific Information. For this reason, these reports are subject to the review requirements of both the Information Quality Act and the OMB Bulletin guidelines.

Below is a general peer review plan for System-Wide Monitoring (SWiM) condition reports prepared by the National Marine Sanctuary Program (NMSP). It describes the process that meets the requirements of the OMB Bulletin, including the preparation of peer review plans for SWiM condition reports, selection of reviewers, conducting reviews, disclosing and responding to reviewer comments, and evaluating potential conflicts of interest.

APPROACH TO PEER REVIEW

Broad discretion is provided in the Bulletin in determining what type of peer review is appropriate and what procedures should be employed to select reviewers. The guidelines require review that is commensurate with the significance of the information being disseminated, the relevance and likely implications for policy decisions, the novelty and complexity of the science to be reviewed, the extent of prior peer reviews, and the expected benefits and costs of additional review.

NMSP has decided that in consideration of the criteria above, the most appropriate approach to reviewing the SWiM condition reports is as follows. Following the completion of internal reviews, which may include reviews by staff, sanctuary advisory councils, and/or other selected informal reviewers, draft condition reports will be sent to three (perhaps more, depending on report content) independent experts who will be requested to submit written reviews. These experts will be selected from a pool of potential reviewers who understand SWiM and the purpose of its reporting system, and who have expertise in either the broader aspects of SWiM (e.g. ecosystem integrity and the impacts of human use) or the specific topic areas of the reports (e.g. water, habitat, living resource, and maritime archaeological resource quality). Written

- Report is a summary of findings from monitoring & characterization programs; quantitative and qualitative information
- Quantitative data may not be available to address each question; best available information and expert opinion



Report Sections

- Overview and Executive Summary
- Site History & Resources
- Pressures (Stressors & Issues) on the Sanctuary
- Status & Trends (State) of Sanctuary Resources
- Sanctuary's Response to Pressures
- References
- Appendix & Explanation of Questions

17 Standardized Questions

Water Stressors

1. Are specific or multiple stressors, including changing oceanographic and atmospheric conditions, affecting water quality?

This is meant to capture shifts in condition arising from certain changing physical processes and anthropogenic inputs. Factors resulting in regionally accelerated rates of change in water temperature, salinity, dissolved oxygen, or water clarity, could all be judged to reduce water quality. Localized changes in circulation or sedimentation resulting, for example, from coastal construction or dredge spoil disposal, can affect light penetration, salinity regimes, oxygen levels, productivity, waste transport, and other factors that influence habitat and living resource quality. Human inputs, generally in the form of contaminants from point or non-point sources, including fertilizers, pesticides, hydrocarbons, heavy metals, and sewage, are common causes of environmental degradation, often in combination rather than alone. Certain biotoxins, such as domoic acid, may be of particular interest to specific sanctuaries. When present in the water column, any of these contaminants can affect marine life by direct contact or ingestion, or through bioaccumulation via the food chain.

[Note: Over time, accumulation in sediments can sequester and concentrate contaminants. Their effects may manifest only when the sediments are resuspended during storm or other energetic events. In such cases, reports of status should be made under Question 7 - Habitat contaminants.]

Status & Trend Ratings

Status:						
GOOD	GOOD/ FAIR	FAIR	FAIR/ POOR	POOR	UNDET.	
Trends:						
▲	Conditions appear to be improving.					
—	Conditions do not appear to be changing.					
▼	Conditions appear to be declining.					
?	Undetermined trend.					
N/A	Question not applicable.					

Report Preparers

Florida Keys National Marine Sanctuary:

Scott Donahue, Joanne Delaney, Brenda Altmeier

Southeast Atlantic, Gulf of Mexico, and Caribbean Region:

Dr. Billy Causey, Sarah Fangman, Dr. Brian Keller

Office of National Marine Sanctuaries:

Kathy Broughton, Dr. Michelle A. Johnston, Dr. Steve Gittings,
Dr. Vernon R. Leeworthy

Contributors

Dr. Alejandro Acosta (FWC)
Lad Akins (REEF)
Dr. Jerald Ault (UM-RSMAS)
Erich Bartels (MML)
Dr. James Bohnsack (NOAA Fisheries)
Dr. Joseph Boyer (FIU)
Joseph Cavanaugh (REEF)
Mark Chiappone (UNCW)
Leda Cunningham (REEF)
Bob Glazer (FWC)
John Hunt (FWC)
Dr. G. Todd Kellison (NOAA Fisheries)
Tom Matthews (FWC)
Dr. Margaret Miller (NOAA Fisheries)
Dr. Steven Miller (UNCW)
Cory Walter (MML)

Contributors (cont)

Anne Morkill (USFWS)

Dr. Jerry Lorenz (Audubon)

Tom Genovese (SFWMD)

Dr. Martin Moe

Jeannette Hobbs (Keys Environmental Restoration Fund)

Cindy Lewis (FWC)

Jon Fajans (FIO)

Alex Score (Eco-Adapt)

Dr. Chris Bergh (TNC)

James Byrne (TNC)

Peter Frezza (Audubon)

Trudy Ferraro (FDEP, John Pennekamp CRSP)

Megan Tinsley (Audubon)

Dr. Dave Vaughn (MML)

Jason Bennis (NPCA)

Contributors (cont)

Rick Beaver (FWC)

Gabriel Delgado (FWC)

Sarah Fangman (ONMS Southeast Region)

Dr. Roland Ferry (EPA, Region 4)

Dr. Michael Feeley (FWC)

Dr. Michelle Johnston (ONMS)

Dr. Brian D. Keller (ONMS Southeast Region)

Dr. William Kruczynski (EPA, Region 4)

Ken Nedimyer (Coral Restoration Foundation)

David Polk (Florida Department of Health)

Joe Schittone (ONMS)

William Sharp (FWC)

Tonya Shearer (Georgia Institute of Technology)

Current and former staff of the Florida Keys National Marine Sanctuary

Water Quality

#	Issue	Rating	Basis for Judgment	Description of Findings
1	Stressors	▼	Large scale changes in flushing dynamics over many decades has altered many aspects of water quality; nearshore problems related to runoff and other watershed stressors; localized problems related to infrastructure.	Selected conditions may inhibit the development of assemblages and may cause measurable but not severe declines in living resources and habitats.
2	Eutrophic Condition	—	Long-term increase in inputs from land; large persistent phytoplankton bloom events, many of which originate outside the sanctuary, but enter and injure sanctuary resources.	Selected conditions have caused or are likely to cause severe declines in some but not all living resources and habitats.
3	Human Health	—	Rating is a general assessment of “all waters” of the sanctuary, knowing that in very specific locations, the rating could be as low as “poor.” Increased frequency of HABs and periodic swim advisories.	Selected conditions have resulted in isolated human impacts, but evidence does not justify widespread or persistent concern.
4	Human Activities	▲	Historically, destructive activities have been widespread throughout the Florida Keys, but many recent management actions are intended to reduce threats to water quality.	Selected activities have caused or are likely to cause severe impacts, and cases to date suggest a pervasive problem.

Habitat

#	Issue	Rating	Basis for Judgment	Description of Findings
5	Abundance/ Distribution	—	In general, mangrove and benthic habitats are still present and their distribution is unchanged; with the exception of the mangrove community, which is about half of what it was historically. The addition of causeways, has changed the distribution of nearshore benthic habitats in their vicinity.	Selected habitat loss or alteration has taken place, precluding full development of living resource assemblages, but it is unlikely to cause substantial or persistent degradation in living resources or water quality.
6	Structure	▼	Loss of <i>Acropora</i> and <i>Montastrea</i> has dramatically changed shallow (<10 m) habitats; regional declines in coral cover since the 1970s, along with increasing abundance and persistence of algae has led to changes in microhabitat at all depths; destruction of seagrass by propeller scaring; vessel groundings impact benthic environment. Alteration of the hard bottom habitat by trap fishing and casitas.	Selected habitat loss or alteration has caused or is likely to cause severe declines in some but not all living resources or water quality.
7	Contaminants	?	Few studies, but no synthesis of information.	N/A
8	Human Activities	▼	Development, highway construction, vessel groundings, fishing, shoreline hardening, marine debris (including derelict fishing gear) and treasure salvaging. and increasing number of private boats; consequences of long-term changes in land cover on nearshore habitats	Selected activities have caused or are likely to cause severe impacts, and causes to date suggest a pervasive problem..

Living Resources

#	Status	Trend	Basis for Judgment	Description of Findings
9	Biodiversity	▼	Relative abundance across a spectrum of species has been substantially altered, with the most significant being large reef building corals, large-bodied fish, sea turtles, and many invertebrates, including, the long-spined sea urchin. Recovery is questionable.	Selected biodiversity loss has caused or is likely to cause severe declines in some but not all ecosystem components and reduce ecosystem integrity.
10	Extracted Species	?	Historical effects of recreational and commercial fishing and collection of both targeted and non-targeted species; it is too early to determine ecosystems effects of new fishery regulations and new ecosystem approaches to fishery management.	Extraction has caused or is likely to cause severe declines in some but not all ecosystem components and reduce ecosystem integrity.
11	Non-Indigenous Species	▼	Several species are known to exist; lionfish have already begun to invade and will likely cause ecosystem level impacts; impacts of other non-indigenous species have not been studied.	Non-indigenous species may inhibit full community development and function, and may cause measurable but not severe degradation of ecosystem integrity.

Living Resources (cont)

#	Status	Trend	Basis for Judgment	Description of Findings
12	Key Species	—	Reduced abundance of selected key species including corals (many species), queen conch, long-spined sea urchin, groupers and sea turtles.	The reduced abundance of selected keystone species has caused or is likely to cause severe declines in ecosystem integrity; or selected key species are at severely reduced levels, and recovery is unlikely.
13	Health of Key Species	▼	Hard and soft coral diseases and bleaching frequency and severity has caused substantial declines over the last two decades; long-term changes in seagrass condition; disease in sea turtles; sponge die-offs; low reproduction in queen conch, cyanobacterial blooms; debris and gear impacts on marine life.	The comparatively poor condition of selected key resources makes prospects for recovery uncertain.

Living Resources (cont)

#	Status	Trend	Basis for Judgment	Description of Findings
14	Human Activities	—	Despite the human population decrease and overall reduction in fishing in the Florida Keys since the 1990s, heavy recreational and commercial fishing pressure continues to suppress biodiversity. Vessel groundings occur regularly within the sanctuary. Annual mean number of reported petroleum and chemical spills hovered around 150 during that time period, with diesel fuel, motor oil, and gasoline representing 49% of these incidents collectively. Over the long term, localized direct impacts may be overwhelmed by the adverse and wide-ranging indirect effects of anthropogenically caused climate change resulting in sea level rise, abnormal air and water temperatures, and changing ocean chemistry.	Selected activities have caused or are likely to cause severe impacts, and cases to date suggest a pervasive problem.

Maritime Archeological Resources

#	Issue	Rating	Basis for Judgment	Description of Findings
15	Integrity	▼	Resources are non-renewable and are subject to deterioration or loss resulting from looting, chemical processes, shifting sediments, marine life, fishing gear entanglement and vessel groundings (the last two are increasing in frequency).	The diminished condition of selected archaeological resources has substantially reduced their historical, scientific, or educational value, and it likely to affect their eligibility for listing in the National Register of Historic Places.
16	Threat to Environment	—	Movement of sunken vessels during storm threatens nearby resources.	Selected maritime archaeological resources may pose isolated or limited environmental threats, but substantial or persistent impacts are not expected.
17	Human Activities	▼	Reports of looting and vessel grounding cases involving potential resources are increasing.	Selected activities have caused or are likely to cause severe impacts, and cases to date suggest a pervasive problem.

Remaining Timeline

- Peer reviews (4) due by end of this week.
- June 27 – July 29 (5 weeks) – site and HQ staff edit report based on reviewer comments.
- August 1 – August 12 (2 weeks) – report is copy edited by HQ.
- August 15 – August 26 (2 weeks) – site and HQ staff edit report based on copy editors comments.

Remaining Timeline

- August 29 – October 7 (6 weeks) – report formatted and website developed by HQ...Congressional letter and press release written.
- October 10 – report finalized and sent to printer...released to the public via websites.
- Early November 2011 hard copies available.

Present SWiM slide