

Summary Report

North Central Coast Marine Protected Area Monitoring Planning Workshop 2

March 11-12, 2009
Pacifica, California

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Kearns & West*

INTRODUCTION – WORKSHOP PURPOSE AND ORGANIZATION

This report summarizes the key outcomes from the North Central Coast Marine Protected Area (MPA) Monitoring Workshop held March 11-12, 2009 in Pacifica, California. The workshop was convened by the California Marine Protected Areas Monitoring Enterprise (Monitoring Enterprise) and the California Department of Fish and Game (CDFG). It was facilitated by Kearns & West.

Workshop Objectives and Intended Outcomes

The workshop (“workshop 2”) was a follow-up to an initial workshop that took place October 22-23, 2008 in Pacifica, CA. The purpose of workshop 2 was to help inform the development of a monitoring plan for North Central Coast marine protected areas (MPAs), which are expected to be implemented in late 2009 or early 2010. Key *objectives* of the workshop were to:

1. Provide an update on the North Central Coast MPA monitoring planning process (baseline characterization and long-term monitoring).
2. Review and discuss the MPA Monitoring Enterprise’s draft key attributes and indicators for status and trends monitoring of ecosystem features. [Note: Status and trends monitoring describes the status of, and change in, key components of the system that collectively encompass and represent the North Central Coast system.]
3. Receive an update and discuss the development of the MPA Monitoring Enterprise’s draft approaches to effectiveness monitoring. [Note: effectiveness monitoring questions explore the specific effects of particular MPA management and network design decisions on the ecosystem in order to inform adaptive management]
4. Provide guidance on how to submit written comments, if desired, following the workshop.

Invited participants were invited to comment on the draft approaches at the workshop and to provide additional written comments in the 10 days following the workshop (through March 23) if desired.

The workshop agenda is included as *Appendix 1*.

Workshop 2 was a step within an ongoing process to develop and refine recommendations for the draft North Central Coast MPA Monitoring Plan. This summary report is focused on the monitoring framework, as details within this framework are subject to continued modification. The facilitation team took detailed notes of all comments made at the workshop. The Monitoring Enterprise will consider all of these comments in its ongoing development of the draft monitoring plan.

Workshop Participation and Conveners

Twenty-four invited participants attended the March 11-12, 2009 workshop.¹ The list of workshop participants is attached as *Appendix 2*. Together, the invited participants represented a broad variety of stakeholder interests and scientific expertise. Members of the public were also invited to attend the workshop as observers. Approximately 8 members of the public attended and were provided with opportunities to provide comment on both days.

Ken Wiseman, MLPA Initiative Executive Director, and Craig Shuman, Marine Advisor to the California Fish and Game Commission, opened the meeting with welcoming comments and continued support for the new and innovative approach to monitoring being implemented for the North Central Coast region. Cheri Recchia, Director of the Monitoring Enterprise, and Jason Vasques, of CDFG, additionally welcomed participants and convened the workshop.

UPDATE ON NORTH CENTRAL COAST MPA MONITORING PLANNING PROCESS

Cheri Recchia provided the following updates on the north central coast MPA monitoring planning process with regard to the state budget crisis:

- The monitoring planning process is largely unaffected by the state budget crisis (with the exception of baseline data collection, see below).
- The Monitoring Enterprise intends to continue development of the draft monitoring framework, considering the input received during Workshop 2, the comment period following the workshop, and additional scientific input. The Monitoring Enterprise will send the draft framework out for scientific review later in the year. Once the scientific review is completed, the Monitoring Enterprise will prepare a draft Monitoring Plan that will go out for public review.
- The request for proposals (RFP) process for north central coast baseline characterization is currently on hold until state bond funds are released.

OVERVIEW AND DISCUSSION OF MONITORING APPROACH

Cheri Recchia provided an overview of the Monitoring Enterprise's draft approach to MPA monitoring in the north central coast and highlighted some of the specific challenges faced.

Cheri explained the Monitoring Enterprise's role as an intermediary between "information producers" (e.g., scientific community, agencies, citizen scientists, etc.) and "information users" (e.g., resource managers, stakeholders, etc.).

Cheri outlined the intended products of the north central coast MPA monitoring as:

¹ In all, fifty individuals were invited to participate in Workshop 2. This included all of the individuals who participated in Workshop 1 as well as additional scientists who had participated in scientific working group discussions with the Monitoring Enterprise.

- Clear, understandable and useful results for decision-makers, resource managers, and stakeholders
- Information that is directly applicable to assessing performance against MLPA goals and supporting adaptive management
- Timely and useful reports for 5-year and later reviews

Cheri also provided a brief overview of both status and trends monitoring and effectiveness monitoring.

Status and trends monitoring:

- The purpose of status and trends monitoring is to track the status of, and changes in, key aspects of marine ecosystems, including ecological and human elements of ecosystems and resource use
- Key components of status and trends monitoring include:
 - Ecosystem features: collectively represent and encompass ecological and human aspects of the north central coast system
 - Key attributes: critical aspects of each ecosystem feature required to maintain ecosystem condition
 - Indicators and focal species: collectively gauge the condition of each key attribute. Key considerations in selecting indicators include:
 - What collectively represents north central coast ecosystems?
 - What is most useful for management?
 - What do audiences care about most?
 - What is affordable?
 - Weighing amount of information or detail against costs

Effectiveness monitoring:

- The purpose of effectiveness monitoring is to assess the effects of specific management decisions or actions in order to inform adaptive management. Cheri emphasized that effectiveness monitoring is not intended to provide “pass/fail” type answers with regard to specific MPAs or the MPA network.
- Key components of effectiveness monitoring include prioritized questions and recommended approaches to answer those questions.

Comments on Monitoring Approach

Throughout the workshop, invited participants offered comments on the proposed monitoring approach and MPA monitoring more broadly. Many of the comments were directed to elements of the monitoring plan that extended beyond the monitoring framework that was the focus of Workshop 2. Key comments included:

- There are a variety of key factors that need to be taken into consideration in developing the north central coast MPA monitoring plan. Key factors discussed included the following:
 - Funding availability
 - Existing data and monitoring programs, including citizen science efforts
 - External and contextual factors. Participants discussed a variety of possible external drivers that may have impacts on MPAs and ecosystem health, including:

- Oceanographic features (e.g., water temperature, upwelling, currents, PDO: Pacific Decadal Oscillation)
 - Water quality and pollution
 - Non-biological factors (e.g., water chemistry)
 - Climate change
 - Meteorological factors
 - Existing fishery regulations, including seasonal fishing restrictions
 - Enforcement and management of MPAs
 - Socioeconomic factors
- This type of information will be important for data interpretation.
- Data collection methods and analytical methods/models. Participants stated that both should both be taken into account to determine appropriate attributes and indicators for status and trends monitoring.
- Given limited funding, the intensity of monitoring may vary at different MPA locations.
 - Some participants expressed concern that it would be difficult to draw conclusions in areas lacking comprehensive monitoring.
 - Several participants pointed out that the cost to survey all of the species in some cases may be the same as the cost of surveying a small number of focal species, but this of course depends on the methods being used. In these cases, these participants recommended collecting as much information as possible. Monitoring Enterprise staff clarified that the monitoring program will likely rely on a number of different data sources. As the program will not be able to monitor everything in all places, it will be important to be selective about what will give the best information given a limited budget for monitoring.
 - For socio-economic data to be valuable, they need to be as spatially and temporally explicit as possible. Spatially and temporally explicit data are currently lacking in many data collection efforts (e.g., logbook data).
 - Development of the monitoring framework should consider the extent and timing of the expected changes for particular ecosystem features.
 - Status and trends monitoring and effectiveness monitoring may be linked in many instances and need to be closely coordinated. These linkages need to be made explicit in the monitoring plan.
 - The monitoring plan should be adaptive so that new monitoring methods and ideas can be incorporated when more is known.
 - Monitoring and data collection methods should be standardized across locations and study regions.
 - The monitoring plan should clarify that monitoring will seek to identify and understand trends (both short-term and long-term) and not just determine the current status of the system.

DISCUSSION OF DRAFT ECOSYSTEM FEATURE ATTRIBUTES AND INDICATORS

At the workshop, Liz Whiteman, Lead Scientist for the Monitoring Enterprise, presented a suite of key ecosystem features, along with initial draft attributes and focal species/indicators for monitoring status and trends of each feature. These ecosystem features, listed below, were derived from an original list developed by invited participants at Workshop 1.

Ecosystem Features	
Proposed at Workshop #1	Revised List
Rocky intertidal systems	Rocky intertidal ecosystems
Kelp systems*	Kelp and shallow rock (0-30 m depth) ecosystems
Rocky subtidal systems (deep and shallow)	Deep rock (30-100 m depth) ecosystems
Estuarine systems	Estuarine ecosystems
Soft-bottom intertidal and beach systems	Soft-bottom intertidal and beach ecosystems
Soft-bottom subtidal systems	Soft-bottom subtidal (5-100m depth) ecosystems
Open Ocean	Pelagic ecosystems
Apex predators**	
Consumptive use	Consumptive uses
Non-consumptive use	Non-consumptive uses
Viable coastal communities***	

Notes

* Kelp and shallow (0-30m water depth) rock ecosystems are considered to form a natural group and cohesive ecosystem feature, while deep (30-100m water depth) rock systems are considered a separate feature.

** Apex predators are important considerations in all ecosystems and thus are best addressed in the context of each of the other features, rather than as a separate feature.

*** Viable coastal communities is considered to encompass many aspects that are beyond the scope of the MLPA; viability of consumptive and non-consumptive uses will be reflected through the key attributes and indicators for those features.

The revised list of ecosystem features together with draft attributes and focal species/indicators were developed through detailed conversations with dozens of scientists in the period between Workshop 1 and Workshop 2. The draft attributes and focal species/indicators represent an amalgamation of scientists' views but not a consensus of views expressed.

For each ecosystem feature, Monitoring Enterprise staff presented a list of both ideal (but potentially scientifically out of reach for the present) and currently selected attributes.

After presenting each set of draft attributes, Monitoring Enterprise staff asked invited participants to respond to the following *organizing questions* for each of the ecosystem features under consideration:

- Are there key aspects of the ecosystem feature that are not captured by these attributes?
- Can you suggest attribute refinements or replacements

Workshop participants offered a variety of comments in response to these questions. Most comments focused at the level of focal species or indicators, and many included suggestions for specific additions or replacements. Participants also suggested some attribute refinements or

replacements. All of these comments were captured to inform continued development of the monitoring framework.

DISCUSSION OF PRELIMINARY APPROACH TO EFFECTIVENESS MONITORING

Liz Whiteman described the Monitoring Enterprise’s preliminary approach to effectiveness monitoring for an MPA network. This preliminary approach identifies two main components to effectiveness monitoring for an MPA network:

- 1) Questions that relate to the effects of design on ecosystems and people
- 2) Questions that related to the effects of people on ecosystems

Assessing effects of design on ecosystems and people

Liz Whiteman briefly presented four MPA design aspects currently being considered for effectiveness monitoring. These design aspects were derived from a broader list developed at workshop 1.

Proposed at Workshop #1	Design Aspects
	Current Proposed List
Size and spacing	Size and spacing
Clusters and configuration	Placement/siting
Habitat siting	
Network effect	
SMR vs. SMCA	Level of protection
Level of protection	
Socioeconomics and use	Socioeconomics and use

The Monitoring Enterprise plans to continue discussing and developing these design aspects with scientists following Workshop 2.

Assessing effects of people on ecosystems

Liz situated effectiveness questions to assess the effects of people on ecosystems within goal 3 of the MLPA, which states: “To improve recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbances and to manage these uses in a manner consistent with protecting biodiversity.”

Liz then presented two draft effectiveness questions to assess the effects of people on ecosystems. The first was on the topic of habitat degradation, and the second was on the topic of wildlife disturbance.

- 1) Are there trampling impacts of increased visitors to rocky intertidal ecosystems in MPAs?
- 2) What are the impacts of increased beach visitation on marine mammals and nesting seabirds?

Monitoring Enterprise staff asked invited participants to respond to the following *organizing question*: Do these questions capture the most important predicted impacts of increased recreational, educational, and study opportunities on ecosystems within MPAs?

Invited participants commented that the draft effectiveness questions reflect pertinent management issues and offered some suggestions for refining the effectiveness questions.

Key criteria for developing effectiveness questions

Liz Whiteman reiterated that the goal for developing effectiveness monitoring is to recommend a small number of good questions for the monitoring plan. She then outlined a list of key criteria by which “good” effectiveness questions could be evaluated. These include:

- Be scientifically feasible
 - Provide reasonable certainty
 - Answerable in management-relevant timeframe
 - Empirically verifiable
- Be useful for management
- Have policy relevance
- Be cost-effective
- Be broadly applicable

Invited participants considered these criteria, expressed general support for them, and did not offer additional criteria or modifications.

PUBLIC COMMENT AND PARTICIPANT REFLECTIONS

Members of the public were given the opportunity to ask questions and make comments during designated public comment periods on both days of the workshop. Some comments included suggested refinements or revisions of the draft attributes, focal species and indicators. Other comments recommended that the Monitoring Enterprise coordinate closely with existing monitoring efforts. Still others pointed toward the need for good enforcement and the importance of cooperating effectively with local communities.

POST WORKSHOP FOLLOW UP AND NEXT STEPS

Workshop participants were invited to submit written comments, if desired, on the draft monitoring approaches discussed at the workshop. The purpose was to provide them with additional time for reflection. Written comments were due by March 23, 2009.

Monitoring Enterprise staff will consider all of the input received at Workshop 2 and in subsequent written comments as they continue to further develop and refine the approaches to status & trends and effectiveness monitoring. Revision of the MPA monitoring approach will also be informed by additional discussions with scientists.

Monitoring Enterprise staff will then submit the monitoring framework (consisting of draft approaches to status & trends and effectiveness monitoring) for scientific review. Input from the scientific review will be used in the development of a draft North Central Coast MPA Monitoring Plan for public review later this year.

APPENDICES

1. Workshop Agenda
2. Roster of attendees

Appendix 1

Proposed Agenda

North Central Coast MPA Monitoring Planning – Workshop 2

*Best Western Lighthouse Hotel, Pacifica, CA
Wednesday, March 11, 2009 (9:30 AM – 5:45 PM)
Thursday, March 12, 2009 (8:00 AM – 4:30 PM)*

Introduction

The March 11-12, 2009 North Central Coast Marine Protected Area (MPA) Monitoring Planning Workshop is a follow-up to an initial workshop that took place October 22-23, 2008 in Pacifica, CA. The focus of the current workshop is to present and discuss draft MPA Monitoring Enterprise approaches to MPA monitoring for the North Central Coast. Invited participants will have opportunities to discuss and provide comments on the draft approaches at the workshop, and are invited to provide additional written comments in the 10 days following the workshop (through March 23) if they wish to do so.

Members of the public may attend as observers and will have the opportunity to provide comment during public comment periods scheduled for late morning on Day 1 and mid-afternoon on Day 2.

Meeting Objectives

1. Provide an update on the North Central Coast MPA monitoring planning process (baseline and long-term).
 2. Review and discuss the MPA Monitoring Enterprise's draft key attributes and indicators for status and trends monitoring of ecosystem features.
 3. Review and discuss the MPA Monitoring Enterprise's draft approaches to effectiveness monitoring.
 4. Provide guidance on how to submit written comments, if desired, following the workshop.
- Agenda

Note that this agenda is constructed for 2 days starting on the morning of the first day. The times listed are tentative pending the flow of group discussion.

Day 1

9:30 – 10:00	<i>Breakfast (provided for invited participants) and sign-in</i>
10:00 – 11:30	Introduction <ul style="list-style-type: none">• Welcome and introductions• Agenda review, process guidelines, and anticipated outcomes• North Central Coast MPA monitoring planning process update• Review of monitoring approach
11:30 – 12:00	Public comment
12:00 – 12:45	<i>Lunch (provided for invited participants)</i>

- 12:45 – 2:30 Rocky ecosystems: presentation and discussion of Monitoring Enterprise draft approaches
- Kelp and shallow rock ecosystems
- 2:30 – 3:00 *Coffee Break*
- 3:00 – 4:30 Rocky ecosystems continued
- Deep rock ecosystems
 - Rocky intertidal ecosystems
- 4:30 – 5:30 Pelagic ecosystems: presentation and discussion of Monitoring Enterprise draft approaches
- 5:30 Wrap-up and preview of day 2
- 5:45 *Adjourn for day*
- 6:30 *Dinner (provided for invited participants)*

Day 2

- 7:00 – 8:00 *Breakfast (provided for invited participants) and sign-in*
- 8:00 – 8:15 Recap and agenda review
- 8:15 – 10:15 Soft-bottom ecosystems: presentation and discussion of Monitoring Enterprise draft approaches
- Estuarine ecosystems
 - Soft-bottom subtidal ecosystems
 - Soft-bottom intertidal and beach ecosystems
- 10:15 – 10:45 *Coffee break*
- 10:45 – 12:30 Consumptive and non-consumptive uses: presentation and discussion of Monitoring Enterprise draft approaches
- 12:30 – 1:15 *Lunch (provided for invited participants)*
- 1:15 – 3:30 Effectiveness monitoring: presentation and discussion of Monitoring Enterprise draft approaches
- 3:30 – 3:45 *Coffee break*
- 3:45 – 4:15 Public comment
- 4:15 – 4:30 Next steps
- 4:30 *Adjourn*

Appendix 2

List of Workshop 2 Participants North Central Coast MPA Monitoring Planning – Workshop 2

Best Western Lighthouse Hotel, Pacifica, CA
Wednesday, March 11, 2009 (9:30 AM – 5:45 PM)
Thursday, March 12, 2009 (8:00 AM – 4:30 PM)

Name	Affiliation
Aaron Golbus	Port of San Francisco
Bill Bernard	Abalone Advisory Group
Bob Breen	Educator
Bob Wilson	The Marine Mammal Center
Cassidy Teufel	California Coastal Comm.
Chris La Franchi	Channel Islands National Marine Sanctuary
Dominic Gregorio	State Water Quality Control Board
Ed Tavasieff	California Fresh Fish
Irina Kogan	Gulf of the Farallones National Marine Sanctuary
Jay Yokomizo	F/V New Huck Finn
John Field	NOAA
Jules Jaffe	SIO/UCSD
Karen Garrison	Natural Resources Defense Council
Kellyx Nelson	San Mateo Resource Conservation District
Kip Laws	UCSC
Lance Morgan	Marine Conservation Biology Institute
Mark Carr	University of California, Santa Cruz
Nick Tipon	Federated Indians of Graton Rancheria
Pete Raimondi	University of California, Santa Cruz
Rick Starr	Moss Landing Marine Laboratories
Russ Moll	California Sea Grant
Samantha Murray	The Ocean Conservancy
Shauna Oh	California Sea Grant
Tom Mattusch	F/V Huli Cat
Tony Koslow	Scripps Institute of Oceanography