

**CALIFORNIA MARINE LIFE PROTECTION ACT INITIATIVE
MASTER PLAN SCIENCE ADVISORY TEAM (SAT)
DRAFT MEETING AGENDA
Tuesday June 26, 2007
9:30 a.m. - 4:00 p.m.**

**Aviation Library and Museum
International Terminal
San Francisco International Airport**

Members of the public are invited to attend the meeting in person or view and listen to the meeting via simultaneous webcasting on the Internet and may view an archived version approximately two days after the meeting. Please visit the MLPA website at www.dfg.ca.gov/mrd/mlpa/meetings.html for more information.

Meeting Objectives

- Introduce new SAT members, select chair(s), and select North Central Coast Science Sub-team
- Review SAT charter
- Review and potentially adopt draft SAT operating guidelines
- Review "California MLPA Master Plan for Marine Protected Areas" guidance on MPA design
- Review 2005-2006 SAT criteria for reviewing MPA proposals
- Preliminary discussion of existing north central coast MPAs evaluation

Meeting Agenda

9:30 a.m. 1. Welcome, introductions, and review of agenda

John Ugoretz, Marine Habitat Conservation Program Manager, California Department of Fish and Game
Ken Wiseman, Executive Director, MLPA Initiative

10:00 a.m. 2. SAT charter and draft operating guidelines

- A. Review SAT charge - questions from SAT members
- B. Review draft operating guidelines - SAT edits and potential adoption
- C. Select SAT chair(s)
- D. Select North Central Coast Science Sub-team

11:00 a.m. Break

11:15 a.m. 3. Master Plan guidance on MPA design

- A. Review and discuss SAT guidance
- B. Discuss areas needing new guidance based on differences in study regions
- C. Determine process for developing new guidance, if necessary

12:00 p.m. Lunch – provided for SAT members and staff onsite (food court nearby for the public)

1:00 p.m. 3. Continued discussion of Master Plan guidance

- 1:30 p.m. 4. SAT criteria for reviewing MPA proposals**
- A. Demonstration of proposal review from central coast process
 - B. Presentation on automating proposal review
 - C. Discussion of potential additional review criteria and methods
- 2:30 p.m. Break**
- 2:45 p.m. 5. Evaluation of existing north central coast MPAs**
- A. Presentation of review based on existing criteria and framework
 - B. Discussion of additional review and modeling possibilities
- 3:30 p.m. 6. Public Comment - Public comment may be allowed at other times during the meeting at the discretion of the chair**
- 3:45 p.m. 7. Wrap up and next steps**
- A. Meeting schedule for future SAT and associated meetings
- 4:00 p.m. Adjourn**

Draft Key Outcomes Memorandum

Date: July 5, 2007

To: Science Advisory Team, North Central Coast Study Region

From: MLPA I-team

Re: 1st North Central Coast Regional SAT – June 26, 2007 Meeting

cc: MLPA Initiative Staff and California Department of Fish and Game MLPA Staff (collectively the I-team)

Executive Summary – Key Outcomes

The first North Central Coast Study Region Science Advisory Team meeting took place on June 26, 2007 at the San Francisco International Airport Aviation Library and Museum. The key outcomes of this meeting are as follows:

- I-team staff described the mandates of the Marine Life Protection Act (MLPA) and the Master Plan in developing the SAT. Additionally, staff presented the charter and operating principles – the members adopted the operating principles.
- The SAT members were briefed on the Bagley-Keen Open Meeting Act
- The Master Plan Team, as described in the MLPA, was identified as: Mr. John Ugoretz (representative the from California Department of Fish and Game (CDFG)); Mr. Dominic Gregorio (representative from the State Water Resources Control Board); and Dr.'s Mark Carr, Steve Gaines, Ray Hillborn, Steve Morgan, Karina Nielsen, Astrid Scholz, and Carl Walters (the “five to seven scientists” listed in MLPA). One more scientist on the team will be designated as the representative coming from “a list prepared by Sea Grant marine advisors” after consulting Sea Grant. A member will also be requested to represent the California Department of Parks and Recreation.
- The SAT members elected Mark Carr and Steve Morgan as co-chairs
- Volunteers to the North Central Coast Science Sub-team are: Caroline Hermans, Sara Allen, Karina Nielsen, Astrid Scholz, and Steve Morgan
- The central coast SAT guidance on MPA design from the Master Plan was presented by I-team staff. This presentation and discussion included a summary of the MLPA goals and objectives, a discussion on size and spacing, MPA replication with respect to habitats, connectivity issues, and a discussion of biogeographic components pertinent to the North Central Coast Study Region (NCCSR) such as offshore islands, shelf size, riverine areas, estuaries, and oceanographic components such as the San

Francisco Bay plume. Additionally various models were discussed at length and will presented at the next SAT meeting

- I-team staff presented criteria developed by the central coast SAT for reviewing MPA proposals which focused on MLPA goals 1, 2, 4, and 6, and discussed automation of size analysis, habitat replication, and habitat coverage and GIS habitat calculations, and discussed a list of species likely to benefit from MPAs that was developed in the central coast process and will be revised by the north central coast study region SAT
- I-team staff presented a draft evaluation of existing MPAs in the NCCSR which includes size, spacing, and habitat analysis, regulations, and conformity to feasibility criteria

I. Meeting Objectives, Participants and Materials

On June 26, 2007 the first Science Advisory Team meeting for the north central coast region was held. Science Advisory Team members present were; Carl Walters, Pete Raimondi, Steve Morgan, Chris Costello, Ray Hilborn, Astrid Scholz, Sara Allen, Karina Nielsen, Mark Carr, Gerry McChesney, Caroline Hermans, John Ugoretz, others present were; Steve Ralston and Constance Anderson, not present were; Steve Gaines and Dominic Gregorio.

The primary objectives of the meeting were to:

- 1) Introduce new SAT members, select chairs, and select North Central Science Sub-team
- 2) Review SAT charter
- 3) Review and potentially adopt draft SAT operating guidelines
- 4) Review “California MLPA Master Plan for Marine Protected Areas” guidance on MPA design
- 5) Review 205-206 SAT criteria for reviewing MPA proposals; and
- 6) Preliminary discussion of existing north central coast MPAs evaluation

MLPA Initiative and California Department of Fish and Game (DFG) staff—collectively known as the “I-Team”—staffed the meeting.

Meeting agenda may be found on the MLPA website at:
<http://www.dfg.ca.gov/mrd/mlpa/meetings.html#sat>

II. Key Outcomes

1. SAT charter and draft operating principles

- a. I-team staff described the mandates of the Marine Life Protection Act (MLPA) with respect to developing the SAT. Key points were that • The Master Plan Team, as described in the MLPA, was identified as: Mr. John Ugoretz (representative the from California Department of Fish and Game); Mr. Dominic Gregorio (representative from the State Water Resources Control Board);

and Dr.'s Mark Carr, Steve Gaines, Ray Hillborn, Steve Morgan, Karina Nielsen, Astrid Scholz, and Carl Walters (the "five to seven scientists" listed in MLPA). One more scientist on the team will be designated as the representative coming from "a list prepared by Sea Grant marine advisors" after consulting Sea Grant. A member will also be requested to represent the California Department of Parks and Recreation.

- b. There is an emphasis towards increased involvement with the North Central Coast Regional Stakeholder Group (NCCRSG). The SAT will not craft their own proposal but will work with and inform the NCCRSG in developing alternative proposals. A sub-team will be formed to work with the NCCRSG and at least one member should be present at NCCRSG meetings. The SAT will work with I-team staff to craft documents and field incoming questions. The SAT is also subject to the Bagley-Keen Open Meetings Act 2004.
 - i. A question about the use of web based public discussions such as message boards was raised. *I-team staff will discuss this with Department legal counsel and report back at the next SAT meeting.*
- c. Selection of chair(s) – SAT members elected Mark Carr and Steve Morgan as co-chairs
- d. Selection of North Central Coast Science Sub-team – volunteers to the science sub-team are: Caroline Hermans, Sara Allen, Karina Nielsen, Astrid Scholz, and Steve Morgan
- e. The SAT adopted the operating principles by unanimous vote.

2. Master Plan guidance on MPA design

- a. The SAT guidance on MPA network design was reviewed and discussed. A summary of the MLPA goals and objectives was presented. The existing size and spacing guidelines were discussed (size – along shore span of 5-10 km with preference for 10-20 km, and spacing – 50-100 km). SAT discussions included questioning whether these guidelines were appropriate for the NCCR and how modeling might help refine them. The need for MPA replication for habitat within a biogeographical region was discussed (3-5 replicate MPAs for each habitat are recommended).
- b. An important note is that, although the BRTF and Fish and Game Commission adopted these guidelines, there are areas that need amending. These include consideration for offshore islands, extended shelf area (lack of canyon habitat), and riverine areas or oceanographic features such as the San Francisco Bay plume. Discussion points included biodiversity at the Farallon Islands as having a suite of species that are not as prevalent along the mainland. Additionally, connectivity issues regarding various models and how they differ for sessile organism versus more mobile organisms and larval dispersal were discussed. As

mentioned above it was identified that the San Francisco Bay plume would have a large impact on dispersal patterns and would need specific consideration.

- c. As a starting point to reviewing the existing guidance and developing new guidance for the NCCRSR various models were discussed at length. Key points were that all models are restricted to the input data and are species oriented. There was also a desire to use a model that would assess how MPA proposals would affect factors such as species abundance or fisheries catch. Chris Costello and Ray Hilborn were asked to run their models for existing NCCSR MPAs over the next month. At the next SAT meeting various models will be presented by Ray Hilborn, Chris Costello, Carl Walters, and Lou Botsford. Additionally, Astrid Scholz will discuss decision support tools such as Marxan or Marzone.
 - i. Data needs include a list of species most likely to benefit from MPAs (*this draft list is attached and requires review by the SAT*), species distribution and habitat distribution, (it should be noted much of this information is included in the regional profile and some is being presented to the NCCRSR and will be presented to the SAT), and water quality aspects.

3. SAT criteria for reviewing MPA proposals

- a. I-team staff presented how the SAT evaluated proposals in the central coast study region. This discussion included size and spacing analysis, a discussion of the automation of those analyses, habitat replication and coverage, and GIS habitat calculation. Habitat in the NCCSR has been mapped at a finer resolution than the central coast study region and is expected to be available August or September. The SAT members discussed the use of sub-regions as a means to determine fine scale variations among communities. The process by which habitat categories were determined was discussed and is essentially included in the *SAT guidance on MPA design* document. Again, a species list developed for the central coast study region and the criteria for amending this list for the NCCSR was discussed (attached).
- b. There was an additional discussion on the level of socioeconomic analysis that would be necessary. The MLPA and California Environmental Quality Act (CEQA) do not specifically require an economic analysis. However, Ecotrust is conducting a use pattern and stated importance analysis in the NCCSR. Additional discussion included the need to predict impacts outside of MPAs such as displacement of fishing pressure.
- c. The SAT and I-team staff also discussed how the MLPA and CDFG relate to other management processes. In general CDFG co-manages with federal partners in and out of state waters and the

State does not have the authority to establish MPAs outside of state waters. In general the MLPA is not about fishery management and fishery management through the MLMA may change to help meet the goals of the MLPA.

4. Draft evaluation of existing north central coast MPAs

- a. An overview of a draft evaluation of existing MPAs in the NCCSR was presented by I-team staff. The preliminary evaluation includes habitat coverage (habitat information will be updated when fine scale maps become available, expected to be August or September), MPA regulations and level of protection, size and spacing, and conformity to feasibility criteria.
 - i. The SAT asked that information on when and why these MPAs were created be included (*this information is included in the attached revised version*). It is important to keep in mind that an analysis should look at whether these MPAs meet the goals of the MLPA rather than the specific MPA objectives when they were created.
 - ii. A question was raised about whether existing data for these MPAs could provide a baseline. However, since these MPAs are significantly smaller than the SAT guidelines developed in the central coast and all but one allows some form of take, the catch data are unlikely to be identifiable in the existing data layers at the resolution that catch is reported.

Summary of public comments

Public comments addressed issues such as water quality, fisheries specific issues, and consideration for other management measures. Additionally, members of the NCCRSB that were present stressed the need for clear and specific guidance from the SAT to assist them in developing a single proposal. Communication Partnership for Science and the Sea offered communication services to the SAT.

III. Next Steps

- 1. Proposed meeting schedule:** (to be confirmed)
 - a. August 14, 2007 - Location: San Francisco International Airport, Aviation Library and Museum
 - b. November 13, 2007 (Location TBD)
 - c. January 8, 2008 (Location TBD)
 - d. March 6, 2008 (Location TBD)
- 2. Next SAT meeting presentations**
 - a. Presentation of models by Ray Hilborn, Chris Costello, Carl Walters, and Lou Botsford
 - b. Decision support tools by Astrid Scholz
 - c. Presentation given to the NCCRSB to be provided to SAT

- d. MLPA I-team presentation of specific goals of the MLPA and language specific to guidance such as size and spacing

3. Reviews

- a. Review and assessment of draft evaluation of existing NCCSR MPAs
- b. Review and revision of species list
- c. Review Draft North Central Coast Regional Profile

Documents provided at June 26, 2007 meeting

- 1. SAT member contact list
- 2. MLPA Initiative meeting schedule
- 3. A handy guide to the Bagley-Keen Act 2004
- 4. Draft operating principles
- 5. Science guidance on MPA design from the Master Plan
- 6. CD copies of the draft north central coast regional profile

Documents provided subsequent to meeting

- 1. Contact information for I-team support staff – to be emailed
- 2. Revised draft preliminary evaluation of existing NCCSR MPAs
- 3. Species list and criteria

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team (SAT)
Draft Meeting Agenda
(revised August 6, 2007)**

**Thursday August 16, 2007
9:30 a.m. - 5:00 p.m.**

**Aviation Library and Museum *
International Terminal
San Francisco International Airport**

Members of the public are invited to attend the meeting in person or view and listen to the meeting via simultaneous webcasting on the Internet and may view an archived version approximately two days after the meeting. Please visit the MLPA website at www.dfg.ca.gov/mrd/mlpa/meetings.html for more information.

Meeting Objectives

- *Consider measurability of regional goals and objectives (request from MLPA North Central Coast Regional Stakeholder Group, NCCRSG)*
- *Identify process for responding to NCCRSG science questions*
- *Review existing science guidelines and evaluation framework for MPA proposals in context of north central coast*
- *Receive presentations of potential parallel approaches for evaluating MPA proposals*
- *Create sub-team to develop draft list of north central coast species likely to benefit from MPAs*
- *Provide input to draft north central coast regional profile*

Meeting Agenda

Note: the SAT will take a short lunch break at approximately 12:15 p.m.

- 1. Welcome, introductions, and review of agenda**
- 2. North central coast regional goals and objectives (attachments 1 & 2)**
 - A. Presentation of revisions to regional goals and objectives
 - B. Consider NCCRSG concerns about measurability of goals and objectives
- 3. Science questions from the NCCRSG**
 - A. Develop process for addressing NCCRSG science questions
 - B. Review first set of questions
- 4. Draft regional profile for the north central coast study region**
 - A. Overview of draft regional profile
 - B. SAT input on draft regional profile
- 5. Guidelines and framework for evaluating MPA proposals (attachments 3 & 4)**
 - A. Specific goals of and guidance provided in the MLPA, master plan for MPAs, and feasibility criteria
 - B. Logic/creation of guidelines in the central coast and application to the north central coast

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5. **Guidelines and framework for evaluating MPA proposals (continued)**
 - C. Proposal evaluation process, refinements and application in the context of north central coast
 - D. Presentation of draft evaluation of north central coast MPAs
6. **Public comment** (approximately 12:00 noon)
Public comment may be solicited at other times during the meeting at the discretion of the co-chairs. Written comments are encouraged to ensure that all comments are included in the public record. Please be prepared to summarize comments in the time allotted by the co-chairs.
7. **Potential parallel approaches for MPA proposal evaluation**
 - A. *A model to evaluate MPA alternatives and size and spacing criteria* - Ray Hilborn
 - B. *Status of Central California Marine Populations and Potential Effects of MPAs on their Sustainability* - Loo Botsford
 - C. *Ecospace models for evaluation of multispecies and ecosystem impacts of alternative MPA proposals* - Carl Walters
 - D. *Spatial flow, fish, and fishing and their consequences for reserves* - Chris Costello
 - E. *Marxan\Marzone and it's Application to California's Marine Life Protection Act* - Charles Steinback
8. **Potential parallel evaluation approaches and how they might be used**
 - A. Identify sub-team to develop recommendations regarding potential parallel processes
9. **List of species likely to benefit from MPAs (attachment 5)**
 - A. Mandate and background for list of species likely to benefit
 - B. Identify sub-team responsible and process for developing list for north central coast
10. **Public comment**
11. **Wrap up and next steps**
 - A. Schedule for future SAT meetings
12. **Adjourn**

Attachments

1. *Draft Provisional Regional Goals and Objectives for Review by the MLPA SAT at its August 14, 2007 Meeting*, revised July 19, 2007 (in both clean and markup versions)
2. Monitoring Framework for Central Coast MPA Objectives from the MLPA Baseline Science-Management Panel, excerpted from the draft *California Marine Life Protection Act Master Plan for Marine Protected Areas* (April 2007), pages 147-155
3. Memo to the MLPA North Central Coast Regional Stakeholder Group regarding guidelines for developing marine protected area proposals (June 25, 2007)
4. *Draft Preliminary Evaluation of Existing State Marine Protected Areas in the MLPA North Central Coast Study Region* (July 3, 2007)
5. *Some Key Species Likely to Benefit from Marine Protected Areas in the Central Coast Study Region* (November 28, 2005)

**CALIFORNIA MARINE LIFE PROTECTION ACT INITIATIVE
MASTER PLAN SCIENCE ADVISORY TEAM
THURSDAY, AUGUST 16, 2007 MEETING SUMMARY
Aviation Library and Museum, International Terminal
San Francisco International Airport
Burlingame, California
Revised September 10, 2007**

Note: Audio and video recordings of this meeting are available on the Internet at <http://www.dfg.ca.gov/mlpa/>. Please contact AGP Video Services at (805) 772-2715 to obtain DVD copies of these recordings.

Welcome, Introductions, and Review of Agenda

SAT members attending: Sarah Allen, Mark Carr, Chris Costello, Steve Gaines, Dominic Gregorio, Caroline Hermans, Ray Hilborn, Gerry McChesney, Steven Morgan, Pete Raimondi, Astrid Scholz, John Ugoretz, Carl Walters

SAT members absent: Eric Bjorkstedt, John Largier, Karina Nielsen

MLPA staff present: Dr. Mary Gleason, Seth Miller, Melissa Miller-Henson, Paulo Serpa, Rebecca Studebaker, Jason Vasques, Ken Wiseman

Meeting objectives:

- *Consider measurability of regional goals and objectives (request from MLPA North Central Coast Regional Stakeholder Group, NCCRSG)*
- *Identify process for responding to NCCRSG science questions*
- *Review existing science guidelines and evaluation framework for MPA proposals in context of north central coast*
- *Receive presentations of potential parallel approaches for evaluating MPA proposals*
- *Create sub-team to develop draft list of north central coast species likely to benefit from MPAs*
- *Provide input to draft north central coast regional profile*

North Central Coast Regional Goals and Objectives

MLPA staff presented draft NCCSR provisional regional goals and objectives for SAT review as requested by the NCCRSG members at their July 10-11, 2007 meeting. The NCCRSG requested the SAT to consider three key issues; 1) the measurability of all objectives, 2) the selection of a measurable indicator in Goal 3, objective 2, and 3) identify unique habitats in the NCCSR. It was requested that each sub-team produce responses on behalf of the SAT, in time for the NCCRSG meeting August 22-23, 2007. These responses would be considered "provisional" until the entire SAT could review them at its next meeting.

SAT sub-groups were formed to review and provide responses to the proposed changes made by NCCRSG members:

Goal 1: “To protect the natural diversity and abundance’s of marine life, and the structure, function, and integrity of marine ecosystems.” (Sub-team: Mark Carr, Steve Gaines, Sarah Allen)

Goal 2: “To help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted.” (Sub-team: Steven Morgan, John Largier, Loo Bostford to assist sub-team)

Goal 3:”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.” (Sub-team: Caroline Hermans, Chris Costello, Astrid Scholz, Gerry McChesney)

Goal 4: “To protect marine natural heritage, including protection of representative and unique marine life habitats in north central California waters, for their intrinsic value.” (Sub-team: Mary Gleason, Pete Raimondi, Domonic Gregorio)

Science Questions from the NCCRSG

SAT Co-Chair Mark Carr outlined a process for handling questions from the NCCRSG. The SAT voted in agreement that the co-chairs and MLPA staff will determine the appropriateness of questions prior to SAT review. It was decided that provisional responses will be created by SAT support staff or sub-groups of the SAT and may then be passed on to the NCCRSG as provisional pending full SAT review. Responses will become final only after they are agreed upon by the full SAT. Questions presented to the SAT and some of the discussions included:

1. Determine the measurability of draft north central coast provisional regional goals and objectives and review the language content of these goals and objectives (addressed above in section II, 1 goals and objectives).
2. What are the key and unique habitats in the north central coast study region?
 - i. The San Francisco Bay tidal plume and the Farallon Islands were identified as potential candidates as “unique habitats”. A sub-team was formed to create a clear statement of what is meant by unique and to identify habitats or features that should be included in this list (sub-team: Mary Gleason, Pete Raimondi, and Dominic Gregorio).
3. Review the list of species most likely to benefit from MPAs and revise as appropriate to the NCCSR (sub-team: Pete Raimondi, Gerry McChesney, John Ugoretz, and Mark Carr).
4. Do existing depth zones need to be split up or revised?
 - i. (Currently the SAT guidelines include three major depth strata: 0-30 m, 30-100 m, 100 - 200 m and >200m) A sub-team was tasked to address whether it is necessary to increase the resolution within the 30-100 m depth zone (the NCCSR has limited depth strata over 100 m). An additional question to be answered is: are there certain species ranges that include only a certain portion of a depth stratum (sub-team: Mark Carr, Pete Raimondi, and John Ugoretz)?

5. What is the influence of offshore habitats, such as Bodega Canyon and Cordell Bank, upon state waters? More specifically, do these offshore habitats affect species assemblages and communities within state waters?
 - i. Cordell Bank was discussed as an area to consider and National Marine Sanctuaries was identified as a source of information on this topic. A sub-team was tasked to address these questions. (sub-team: Mark Carr, Dominic Gregorio, Sarah Allen)
6. What is the proper spacing and seasonal buffers to prevent disturbance of marine mammals and nesting sea bird colonies (sub-team: Sarah Allen, Gerry McChesney)?
7. Can the SAT review and comment on the list of important features found within the draft north central coast regional profile? It was requested that members of the SAT review the list of important features in the north central study region (section 3.3 of the draft regional profile), and send comments to Mary Gleason who will include comments into the draft profile and formulate a response to address this question.
 - i. Are there biological breaks in species distribution within the NCCSR? More specifically; what are the latitude and longitudinal discontinuity of species structure within the NCCSR?
8. Discussion of this question raised three major regions of biotic breaks along the coastline; north and south of Point Reyes headlands and the Farallon Islands. (sub-team: Pete Raimondi, Steve Gaines, Mark Carr)

Draft Regional Profile for the North Central Coast Study Region

MLPA staff presented an overview of the draft regional profile for the north central coast. The SAT was asked to review the document and send comments to the MLPA comments address (MLPAComments@resources.ca.gov) or directly to Dr. Mary Gleason.

Guidelines and Framework for Evaluating MPA Proposals

MLPA staff presented three sources of guidance to the regional stakeholders in developing alternative MPA proposals: 1) the Marine Life Protection Act, 2) science guidelines in the draft *California Master Plan for Marine Protected Areas*, and 3) DFG feasibility criteria. It was stated that the guidelines provided in the feasibility criteria are not rules, but rather criteria DFG will take into consideration when analyzing alternative MPA proposals.

Dr. Mark Carr and Dr. Steve Gaines presented the guidelines and rationale for the guidelines that were used in the first phase of the MLPA Initiative (and applied to the central coast).

Evaluation of Existing MPAs in the NCCSR

MLPA staff presented the *Preliminary Evaluation of Existing North Central Coast MPAs* as created by staff based upon existing SAT guidelines and DFG feasibility criteria. The SAT was asked to review this document and provide further analysis if needed. This document provides

important information to assist the NCCSRG in its task of evaluating existing MPAs as part of the process of developing alternative MPA proposals.

Potential Parallel Approaches for MPA Proposal Evaluation

Five models were presented to the SAT for possible use in evaluating alternative MPA proposals in the NCCSR. The model presentations and associated presenters were:

- *Marxan/Marzone and its Application to California's Marine Life Protection Act* – Astrid Scholz
- *Status of Central California Marine Populations and Potential Effects of MPAs on their Sustainability* - Loo Botsford
- *A model to evaluate MPA alternatives and size and spacing criteria* - Ray Hilborn
- *Ecospace models for evaluation of multispecies and ecosystem impacts of alternative MPA proposals* - Carl Walters
- *Spatial flow, fish, and fishing and their consequences for reserves* - Chris Costello

A sub-team was formed and tasked with evaluating these models to provide two pieces of information: 1) whether, any common themes exist among the models presented that could refine the existing SAT guidelines, and 2) a description of how some or all of the models could be applied as a parallel approach to evaluating MPA proposals. Members of the sub-team are Chris Costello, Steve Gaines, Ray Hilborn, Astrid Scholz, Sara Allen, Caroline Hermans, Eric Bjorkstedt, and John Largier. Loo Botsford will assist the group as an outside advisor.

List of Species Likely to Benefit from MPAs

MLPA staff presented the mandate and background for the list of species likely to benefit from MPAs. The SAT agreed that a sub-team could review the list from the central coast and provide revisions as they apply to the NCCSR, along with rationale for revisions. A sub-team was created for this task: Pete Raimondi, Gerry McChesney, John Ugoretz, and Mark Carr.

Summary of Public Comments

Public comments addressed issues such as the uniqueness of the Farallon Islands and the area between Saunder's Landing and Stewart's Point, eelgrass in Tomales Bay, and concern about the use of models in the process. Additional comments included concern about socioeconomics, fisheries management measures in regard to MPA implementation and a request to provide more opportunity for public comment during SAT meetings. Also, members of the NCCSRG stressed the need for clear and specific guidance from the SAT to assist them in developing a single proposal.

Next Steps

Upcoming meetings are:

- September 17, 2007 (via conference call - conference line information will be posted with meeting agenda)
- October 1, 2007 – Aviation Library and Museum, San Francisco International Airport

Briefing Documents Provided Before or at the August 16, 2007 SAT Meeting

1. Provisional Draft Regional Goals and Objectives
2. Memo to NCCRSG regarding guidelines for developing marine protected area proposals (June 25, 2007)
3. Draft Preliminary Evaluation of Existing State Marine Protected Areas in the MLPA North Central Coast Study Region (July 3, 2007)
4. Some Key Species Likely to Benefit from Marine Protected Areas in the Central Coast Study Region (November 2005)
5. Key Species Likely to Benefit from MPAs (November 2005)
6. Monitoring Framework from the MLPA Baseline Science-Management Panel for Central Coast MPA Objectives

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team (SAT)
Draft Meeting Agenda
(revised September 16, 2007)**

**Monday September 17, 2007
1:00 p.m.**

**Via teleconference and webconference
Toll free phone number: 800.974.2163
Passcode: 98039355#**

GoToWebinar registration/sign in: <https://www.gotomeeting.com/register/658432472>

**For teleconference access: Resources Building *
1416 Ninth Street, Suite 1311
Sacramento, CA 95814**

Members of the public are invited to listen to the meeting using the toll-free phone number and passcode, or may also use the MLPA offices in the Resources Building for telephone access. This agenda may be found on the MLPA website at www.dfg.ca.gov/mlpa.

Public participation: The public will be invited by the co-chairs to offer comments on the agenda action items. General comments on the MLPA Initiative and the work of the MLPA Master Plan Science Advisory Team, ***not directed to specific agenda items***, will be taken at approximately 1:15 p.m.

Meeting Objectives

- *Consider NCCRSG revision of provisional regional goals and objectives (request from MLPA North Central Coast Regional Stakeholder Group, NCCRSG)*
- *Discuss and potentially approve responses to NCCRSG science questions*
- *Receive report from work group on parallel approaches to evaluating marine protected area (MPA) proposals*
- *Identify an MPA proposal evaluation work group*
- *Receive report from work group on developing a list of north central coast species likely to benefit from MPAs*

Meeting Agenda

- 1. Welcome, introductions, review of agenda, and teleconference protocol**
Co-chairs Steven Morgan and Mark Carr
- 2. Updates**
 - A. Communication among SAT members and work groups
- 3. Public comments**
- 4. North central coast regional goals and objectives (attachment 1 and handout 1)**
 - A. Report from work groups
 - B. Additional questions
 - C. Response to NCCRSG preliminary text

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- 5. Science questions from the NCCRSG (attachments 2-3)**
 - A. Report on initial drafts of responses
 - B. Approval of responses to first set of questions
 - C. Review questions from NCCRSG's August 22-23, 2007 meeting
- 6. Evaluating MPA proposals (attachment 4)**
 - A. Discuss evaluation process and products to be generated by subcommittee
 - B. Discuss a time frame for evaluating alternative MPA proposals
 - C. Identify an evaluation subcommittee
 - D. Report from work group on status of reviewing approaches as evaluation tools and recommended steps for using parallel approaches
- 7. List of species likely to benefit from MPAs (attachment 5)**
 - A. Report from work group
 - B. Provide feedback to sub-team
 - C. Determine steps to finalize by October 1, 2007
- 8. Wrap up and next steps**
 - A. Next meeting October 1, 2007
 - B. Review items requiring action for October 1, 2007 meeting
- 9. Adjourn**

Attachments

1. *Revised Provisional Regional Goals and Objectives for Review and Adoption by the NCCRSG at its October 2007 Meeting (Revised August 23, 2007)*
2. Provisional work group responses to NCCRSG questions
3. NCCRSG August 22-23 meeting questions to the SAT
4. MPA proposal evaluation methods from the MLPA Initiative Central Coast Project
5. Draft work group list of some key species likely to benefit from MPAs in the north central coast
6. Meeting summary from SAT August 16, 2007 meeting

Handouts

1. Draft Comments on the July 2007 Draft North Central Coast Regional Goals and Objectives as Developed by SAT Work Groups

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team (SAT)
September 17, 2007 Meeting Summary
(Revised September 21, 2007)**

**Monday, September 17, 2007
1:00 p.m. - 5:30 p.m.**

**Via teleconference and web conference
Access at Resources Building
1416 Ninth Street, Suite 1311
Sacramento, CA 95814**

*Note: The meeting agenda may be found on the MLPA website at:
<http://www.dfg.ca.gov/mlpa/meetings.asp#sat>*

Executive Summary

The third North Central Coast Study Region Science Advisory Team meeting took place via teleconference and web conference on September 17, 2007. The summary of this meeting is as follows:

- The SAT voted to accept the revisions to the goals and objectives proposed by the work group and to create a document to evaluate the relative difficulty and cost of measuring each goal and objective.
- The SAT reviewed and approved draft responses to the first set of science questions submitted by the NCCRSO.
- Questions from the NCCRSO's August 22-23, 2007 meeting were reviewed and members of the SAT were identified to aid the science team assistants in crafting draft responses to those questions.
- The evaluation process utilized in the CCSR was presented and discussed and a work group was formed to evaluate MPA proposals for the NCCRSO.
- Members of the parallel approaches work group presented their progress and gave a timeline for their next steps.

SAT members attending: Carl Walters, Pete Raimondi, Steven Morgan, Karina Nielsen, Ray Hilborn, Astrid Scholz, Sarah Allen, Mark Carr, John Largier, Eric Bjorkstedt, John Ugoretz, and Dominic Gregorio

SAT members absent: Chris Costello, Gerry McChesney, Caroline Hermans and Steve Gaines.

Meeting Objectives

- Discuss and approve responses to NCCRSO science questions
- Receive a report from work group on parallel approaches to evaluating marine protected area (MPA) proposals
- Identify an MPA proposal evaluation work group
- Receive a report from work group developing a list of north central coast species likely to benefit from MPAs

Meeting Summary

1. Welcome, introductions, and review of agenda, and teleconference protocol

Meeting was convened at 9:40 a.m. No changes were made to the agenda; however, there was insufficient time during the meeting to discuss parallel processes, so an additional SAT meeting was scheduled to cover this topic.

2. Updates

Updates included a review of the meeting attachments and handouts.

3. Summary of public comments

Members of the NCCRSG posed additional questions to the SAT to assist them in developing MPA proposals. Comments focused on how the SAT will evaluate proposals, what level of protection it would assign to protected areas that allowed different fishing techniques (such as catch-and-release and trawling vs. trolling), and how species that were not the focus of MPA efforts in the central coast study region would be protected during this effort. The public also thanked the SAT for adhering to the Bagley-Keene Act.

4. North central coast regional goals and objectives (Attachment 1 and Handout 1)

SAT members reviewed the responses to the NCCSR provisional goals and objectives that subgroups had provided to the NCCRSG at their August 22-23, 2007 meeting. Of particular concern was the measurability of some goals and objectives, such as “high scenic value” and “structure and integrity.” Members also discussed the differences between something being measurable and something actually being measured. Concern was raised about not having a plan in place for measuring the goals and objectives, and there was discussion surrounding the cost and difficulty of measuring some of the goals and objectives. SAT members voted to approve the changes to the NCCSR provisional goals and objectives since each one is fundamentally measurable, and also formed a work group to address the concerns surrounding the practical measurability of each of the objectives. Work group members included John Ugoretz, Karina Nielsen, Sarah Allen, and Mark Carr. The work group is tasked with evaluating the difficulty and cost of measuring each objective. This document will be prepared and approved by the SAT for the December NCCRSG meeting.

5. Science questions from the NCCRSG (Attachments 2-3)

Mary Gleason presented the list of draft responses to questions from the NCCRSG’s July 10-11, 2007 meeting. One member of each question’s work group summarized their findings and explained their response. The SAT voted to approve all completed draft responses, which included questions 1, 2, 4, 6, and 8. Questions 5 and 7 required further research before a draft response could be completed, and question 3 (a list of species most likely to benefit from MPAs)

was a separate agenda item for this meeting. Also under this agenda item, Mary explained new protocol for responding to science questions from the NCCRSG. The science team assistants, Amy Brookes and Seth Miller, will create draft responses to questions with the help of identified SAT members and specialists. These responses will then be amended and approved by the entire SAT before being sent to the NCCRSG. SAT members reviewed new questions generated at the NCCRSG's August 22-23, 2007 meeting and identified information sources for the science team assistants.

6. Evaluating MPA proposals (Attachment 4)

A. SAT co-chair Mark Carr presented guidelines used previously in the MPA evaluation process for the central coast region and described the work involved in the evaluation process, including the need for the formation of an evaluation work group. Dr. Carr and MLPA staff also discussed the time constraints that the evaluation work group would be working under and reminded SAT members that this is an iterative process.

B. The first MPA draft proposals are expected from the NCCRSG on October 1, 2007, and the evaluation work group will be expected to present their evaluations of these initial proposals to the full SAT at its November 13, 2007 meeting. The evaluation work group will develop a general approach on how they will evaluate proposals using the existing guidelines and report on what that approach is at the October 1, 2007 SAT meeting.

C. The evaluation work group was formed with the following SAT members: Mark Carr, Pete Raimondi, Steven Morgan, Sarah Allen, Steve Gaines, Ray Hilborn, John Largier, Chris Costello, and Astrid Scholz. Loo Botsford will provide guidance.

D. Dr. Ray Hilborn presented a summary of progress made by the parallel approaches work group. Members of the work group agreed to use datasets from the central coast to test the models. It was suggested that these models will be important for evaluating how various size and spacing guidelines impact the success of marine protected areas. A rough timeframe for model preparation has been suggested by Dr. Steve Gaines as follows: size and spacing guidelines ready in about a month, the full model package ready in a couple of months, and a revision of the guidelines based on this model before the next regional effort.

7. List of species likely to benefit from MPAs

Due to limited time, a discussion of species likely to benefit from MPAs was deferred until the October 1, 2007 meeting of the SAT. Dr. Mark Carr requested that all comments from SAT members on the list of species be sent to him by September 21, 2007 so he can incorporate them before the next meeting.

8. Next Steps

Next meeting: October 1, 2007 – Aviation Library and Museum, San Francisco International Airport

Attachments

1. Revised Provisional Draft Regional Goals and Objectives for Review and Adoption by the NCCRSG at its October 2007 Meeting (revised August 23, 2007)
2. Provisional work group responses to NCCRSG questions
3. NCCRSG August 22-23 meeting questions to the SAT
4. MPA proposal evaluation methods from the MLPA Initiative Central Coast Project
5. Draft work group list of some key species likely to benefit from MPAs in the north central coast
6. Meeting summary from SAT August 16, 2007 meeting

Handouts

1. Draft comments on the July 2007 Draft North Central Coast Regional Goals and Objectives as developed by SAT work groups

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team (SAT)
Draft Meeting Agenda
(revised September 28, 2007)**

**Monday October 1, 2007
9:30 a.m.**

**Aviation Library and Museum *
International Terminal
San Francisco International Airport**

Members of the public are invited to attend the meeting in person or view and listen to the meeting via simultaneous webcasting on the Internet, and may view an archived version approximately two days after the meeting. Please visit the MLPA website at www.dfg.ca.gov/mlpa/meetings.asp for more information.

Public participation: The public will be invited by the co-chairs to offer comments on the agenda action items. General comments on the MLPA Initiative and the work of the MLPA Master Plan Science Advisory Team, ***not directed to specific agenda items***, will be taken at approximately 12:45 p.m.

Meeting Objectives

- *Review, discuss and potentially approve list of key species likely to benefit from MPAs in the MLPA North Central Coast Study Region*
- *Review, discuss and potentially approve responses to science questions*
- *Review and discuss revised preliminary evaluation of existing north central coast marine protected areas (MPAs)*
- *Discuss and potentially approve framework for evaluating MPA proposals based on master plan science guidelines*
- *Receive report from work group on parallel approaches to evaluating marine protected area (MPA) proposals and potentially approve parallel approach(es) for use in the MLPA North Central Coast Study Region*

Meeting Agenda

- 1. Welcome, introductions, and review of agenda**
- 2. Updates**
- 3. List of species likely to benefit from MPAs (Handout A)**
 - A. Report from work group
 - B. Review, discuss and potentially approve the list of species most likely to benefit from marine protected areas in the north central coast

** This facility is accessible to persons with disabilities. To request reasonable accommodations for a disability, please contact California Relay Service (at least two days prior to the meeting) at 800.735.2929 (TT) or 800.735.2922 (voice) and ask them to contact the California Marine Life Protection Act Initiative at 916.653.5656.*

- 4. Science questions (Handouts B-D)**
 - A. Review and potentially approve responses to MLPA North Central Coast Regional Stakeholder Group questions
 - B. Review new questions submitted to SAT
- 5. Public comment**
- 6. Preliminary evaluation of existing north central coast MPAs (Attachment 1)**
 - A. Discuss and potentially approve the evaluation of existing north central coast MPAs
- 7. Evaluation framework for MPA proposals**
 - A. Report from work group on evaluation framework
 - B. Report from work group on status of reviewing potential parallel approaches to MPA proposal evaluation and recommended steps for using parallel approaches
 - C. Discuss and potentially adopt the evaluation framework, including potential parallel approaches
- 8. Wrap up and next steps (Handout E)**
 - A. Meeting schedule for future SAT meetings
- 9. Adjourn**

Attachments

1. *Draft Preliminary Evaluation of Existing State Marine Protected Areas in the MLPA North Central Coast Study Region (revised September 24, 2007)*

Handouts

- A. *Draft Work Group List of Species Likely to Benefit from Marine Reserves in the MLPA North Central Coast Study Region (revised September 28, 2007)*
- B. *Draft Work Group Responses to Science Questions Posed by the NCCRSG at its July 10-11, 2007 Meeting (revised September 28, 2007)*
- C. *Draft Work Group Responses to Science Questions Posed by the NCCRSG at its August 22-23, 2007 Meeting (revised September 28, 2007)*
- D. *Draft Work Group Responses to Science Questions Posed by Santi Roberts/Oceana in a Letter Dated September 10, 2007 (revised September 28, 2007)*
- E. MLPA master calendar, revised September 11, 2007

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team
October 1, 2007 Meeting Summary
(revised October 22, 2007)**

**Aviation Library and Museum
International Terminal
San Francisco International Airport
9:30 a.m.**

Note: Audio and video recordings of this meeting are available on the Internet at <http://www.dfg.ca.gov/mlpa/>. Please contact AGP Video Services at (805) 772-2715 to obtain DVD copies of these recordings.

SAT members attending: Sarah Allen, Eric Bjorkstedt, Mark Carr, Dominic Gregorio, Ray Hilborn, John Largier, Gerry McChesney, Steven Morgan, Karina Nielsen, Pete Raimondi, Astrid Scholz, John Ugoretz. Steve Gaines attended by teleconference.

SAT members absent: Chris Costello, Caroline Hermans and Carl Walters.

MLPA staff present: Amy Brookes, Mary Gleason, Melissa Miller-Henson, Rebecca Studebaker, Jason Vasques, Ken Wiseman

Meeting Objectives

- Review, discuss and potentially approve list of key species likely to benefit from marine protected areas (MPAs) in the MLPA North Central Coast Study Region
- Review, discuss and potentially approve responses to science questions
- Review and discuss revised preliminary evaluation of existing north central coast MPAs
- Discuss and potentially approve framework for evaluating MPA proposals based on master plan science guidelines
- Receive report from work group on parallel approaches to evaluating MPA proposals and potentially approve parallel approach(es) for use in the MLPA North Central Coast Study Region

The meeting agenda may be found on the MLPA website at http://www.dfg.ca.gov/mlpa/meeting_100107.asp

Meeting Summary

1. Welcome, introductions and review of agenda

No changes were made to the agenda.

2. Updates

No updates were reported.

3. Species likely to benefit from MPAs in the MLPA North Central Coast Study Region

Mark Carr reported on behalf of the workgroup assigned to the task of developing this list, and a lengthy discussion among the SAT followed. Issues discussed included the problem of illegal harvesting, and the criteria for placing species in the 'Likely' or 'Most Likely' to benefit categories. The question came up of whether or not to include on the list species that most likely will not show a response to MPAs. A **summary of criteria** for determining 'Likely' or 'Most Likely' to benefit was agreed upon, whereby any of the following would indicate Likely status:

- Species is currently fished
- Prey is harvested
- Mortality associated with human activity other than fishing
- Predicted detectable responses of species inside relative to outside MPA
- Significant proportion of species' distribution occurs within the study region
- A significant level of exploitation indicates Most Likely status

Alterations to the list were: The two sole species and herring were moved from 'Most Likely' to 'Likely'; giant chiton will be added to the 'Likely' list; and rock prickleback will be added to 'Most Likely'.

In addition, the following changes were adopted: An explanation of what distinguishes 'Most Likely' from 'Likely' to be included with the lists and, wherever "marine reserve" appears in the document, 'marine protected area' will take its place.

The list of species likely and most likely to benefit was approved (with the caveat that the list is not final, and that criteria will be solidified).

4. Science questions from the MLPA North Central Coast Regional Stakeholder Group (NCCRSB)

Work groups reported on the progress of questions posed by the NCCRSB, and responses were discussed.

- Concerning the measurability of objectives, it was suggested to begin measuring early on to make up for the lack of 'before' data. The twofold nature of the question was addressed (sheer possibility vs. feasibility), and the need for considering the component of natural change was highlighted.
- The question about the subtidal zone was clarified as originating from a previous question about the Farallon Islands. The mean lower low tide line was suggested and seconded as a modification to the mean low tide line.
- It was suggested to include which species might decline as a result of MPA protection (due to increased abundance of predator populations).
- Whether the state has jurisdiction over serious ecological impacts other than fishing (such as drilling for oil and dumping dredge) in MPAs was discussed. It was confirmed that the MLPA limits extraction, and that nothing can be extracted from a marine reserve.

- Dominic Gregorio recommended as an upcoming agenda item the consideration of water quality problems that alter the effectiveness of MPAs, and volunteered to address this topic for the next meeting.
- A point was made that the regional stakeholder group members need to be very clear with the wording of their questions to communicate exactly what they want to know. For example, homogeneous was interpreted by SAT members to refer to substrate type, but later was thought to refer to depth. It was suggested and seconded that 'homogeneous' refers to depth, substrate, and oceanographic habitat.
- After some discussion due to confusion about cross-shore sizing guidelines for MPAs in the homogeneous parts of the study region, Mark Carr explained that the minimum longitudinal length for MPAs was based on adult movement, and that an MPA would never be less than that limit whether along the cross-shore or the long-shore extent.

Responses were approved (with some approved changes to be made).

5. Preliminary evaluation of existing north central coast MPAs

An overview was presented of what an evaluation of existing MPAs should look like, based on central coast study region evaluations. The presented guidelines are awaiting preliminary approval, with the possibility of future amendments. An important point was raised that estuaries are missing as types of habitat to protect, and should be added.

6. Evaluation framework for MPA proposals

A. Report from evaluation work group

Key issues raised were habitat representation, levels of protection, subregional division, and protection of forage, nursery, and breeding areas.

- The evaluation work group is working to define a minimum habitat area that would satisfy habitat representation requirements.
- After lengthy discussion of how to divide the study region into evaluation subregions, the SAT agreed on three: 1) Point Arena to North Beach Road at Point Reyes; 2) North Beach Road at Point Reyes to Pigeon Point; and 3) the Farallon Islands
- It was proposed that MPAs assigned to the Farallon Islands would be subject to the same size guidelines as those alongshore, but that these MPAs would not be subject to the same spacing guidelines.

B. Report from parallel approaches work group

A presentation by Will White illustrated several modeling approaches designed to predict performance of MPAs relative to various size and spacing options. Modeling results indicated that size is very important, suggesting larger MPAs may be more effective.

7. Public Comment

Issues raised included the impact of underwater noise pollution, and how this might be addressed in the MPA process. A question was put forward as to which aspects of water quality are of concern for the stakeholders. Several general suggestions were also made to the SAT:

- Consider the region between Point Arena and Stewart's Point for MPA status. Due to extremely windy conditions, this area cannot be heavily exploited, and thus an MPA designation would not disrupt the small, local economy.
- Encourage the regional stakeholder group members to be as clear and explicit as possible about what their expectations are for MPA performance over time, and to guard against the assumption of failure if a marked change is not seen (for instance, in an MPA that was chosen for its lack of fishing pressure).
- Ensure that an appropriate level of attention remains focused on the issue of species interaction, as this is an area where not a lot is known – make sure to mark unknown as 'unknown' and not zero.
- Use a matrix approach for levels of protection, with variables for biodiversity, ecosystem function, and habitat.
- Consider the San Mateo coast as a separate bioregion based on the particular substrate and different oceanographic conditions south of the Golden Gate Bridge.

8. Next steps

The next MLPA Blue Ribbon Task Force meeting has been changed to November 19-20, 2007 in San Rafael.

The next SAT meeting is November 13, 2007 in Pacifica.

9. Adjourn

The meeting adjourned at approximately 5:30 p.m.

Documents provided at or in preparation for the meeting

1. *Draft Preliminary Evaluation of Existing State Marine Protected Areas in the MLPA North Central Coast Study Region (revised September 24, 2007)*
2. *Draft Draft Work Group List of Species Likely to Benefit from Marine Reserves in the MLPA North Central Coast Study Region (revised September 28, 2007)*
3. *Draft Work Group Responses to Science Questions Posed by the NCCRSG at its July 10-11, 2007 Meeting (revised September 28, 2007)*
4. *Draft Work Group Responses to Science Questions Posed by the NCCRSG at its August 22-23, 2007 Meeting (revised September 28, 2007)*
5. *Draft Work Group Responses to Science Questions Posed by Santi Roberts/Oceana in a Letter Dated September 10, 2007 (revised September 28, 2007)*
6. MLPA master calendar, revised September 11, 2007

California Marine Life Protection Act Initiative
Master Plan Science Advisory Team (SAT)
Draft Meeting Agenda
(revised November 12, 2007)

Tuesday November 13, 2007
9:30 a.m.

Best Western Lighthouse Hotel *
105 Rockaway Beach Avenue
Pacifica, CA 94044

Members of the public are invited to attend the meeting in person or view and listen to the meeting via simultaneous webcasting on the Internet and may view an archived version approximately two days after the meeting. Please visit the MLPA website at www.dfg.ca.gov/mlpa/meetings.asp for more information.

Public participation: The public will be invited by the co-chairs to offer comments on the agenda action items. General comments on the MLPA Initiative and the work of the MLPA Master Plan Science Advisory Team (SAT), ***not directed to specific agenda items***, will be taken after lunch at approximately 12:40 p.m.

Meeting Objectives

- *Review, discuss and potentially approve responses to science questions*
- *Review and potentially approve evaluations of draft options for MPA arrays by work groups of the MLPA North Central Coast Regional Stakeholder Group and draft external MPA proposals submitted external to the work group process*
- *Determine how and who to present evaluations*
- *Review and discuss next steps for parallel processes assessments of draft options for MPA arrays and draft external MPA proposals*

Meeting Agenda

(note that the SAT will break for lunch at approximately 12:00 noon)

- 1. Welcome, introductions, and review of agenda**
- 2. Updates (Attachments 1-3)**
- 3. Science questions (Attachments 4-5 and Handouts A-B)**
 - A. Report on new questions and initial drafts of responses
 - B. Review and potentially adopt outstanding responses to previous sets of science questions

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4. **Evaluation process for draft options for MPA arrays and draft external MPA proposals (Attachment 6 and Handouts C-D)**
 - A. Overview of draft options for MPA arrays (developed by regional stakeholder work groups) and draft external MPA proposals (developed external to the work group process) – Mary Gleason
 - B. Discussion of levels of protection – Mark Carr
 - C. Discussion of habitat representation – Pete Raimondi
 - D. Discussion of size and spacing evaluation – Steve Gaines
 - E. Discuss evaluation of protection of foraging, breeding, rearing areas – Sarah Allen and Gerry McChesney
 - F. Discussion of socioeconomic evaluation – Astrid Scholz
 - G. Discussion with stakeholder panel regarding draft options for MPA arrays and draft MPA proposals
5. **Parallel processes assessment (Handouts E-F)**
 - A. Report from parallel processes work group on results of modeling MPA arrays – Ray Hilborn
 - B. Report from parallel processes work group on socioeconomic models – Astrid Scholz
6. **Presenting evaluations to the MLPA Blue Ribbon Task Force and North Central Coast Regional Stakeholder Group**
 - A. Discuss and potentially approve initial evaluations of draft options for MPA arrays and draft external MPA proposals
 - B. Discuss how to prepare and present evaluations to the blue ribbon task force
 - C. Discuss how to provide feedback to the north central coast regional stakeholder group
7. **Wrap up and next steps**
8. **Adjourn**

Attachments

1. SAT October 1, 2007 meeting summary
2. *List of Species Likely to Benefit from Marine Protected Areas in the MLPA North Central Coast Study Region (adopted October 1, 2007)*
3. November 1, 2007 memo from the California Department of Fish and Game regarding special closures as they apply to the Marine Life Protection Act
4. *Draft Responses to Science Questions Posed by the NCCRSG at its July 10-11, 2007 Meeting (revised November 5, 2007)*
5. *Draft Responses to Science Questions Posed by Santi Roberts/Oceana in a Letter Dated September 10, 2007 (revised November 5, 2007)*
6. Descriptions of draft options for MPA arrays EA, EB, JA, JB, TA and TB, and draft external MPA proposals A, B, C and D
7. PowerPoint presentation: *Ocean Patterns* (John Largier, Bodega Marine Laboratory)

Handouts

- A. *Draft Responses to Questions Posed at the October 16-17, 2007 Meeting of the North Central Coast Regional Stakeholder Group (revised November 9, 2007)*
- B. *Draft Work Group Responses to Science Questions Posed by the NCCRSB at its August 22-23, 2007 Meeting (revised November 9, 2007)*
- C. PowerPoint presentation: *Overview of Draft Options for MPA Arrays and First Draft Proposals* (Mary Gleason, MLPA Initiative)
- D. *Draft MLPA Evaluation Methods for MPA Proposals*
- E. Overview of modeling approaches for parallel approaches work group
- F. PowerPoint presentation: *Reviewing Stakeholder Proposals Using Models* (Ray Hilborn, MLPA Master Plan Science Advisory Team, Parallel Approaches Work Group)

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team
November 13, 2007 Meeting Summary
(revised January 3, 2008)**

**Best Western Lighthouse Hotel
105 Rockaway Beach Avenue
Pacifica, CA 94044**

Note: Audio and video recordings of this meeting are available on the Internet at <http://www.dfg.ca.gov/mlpa/>. Please contact AGP Video Services at (805) 772-2715 to obtain DVD copies of these recordings.

SAT members attending: Sarah Allen, Eric Bjorkstedt, Mark Carr, Chris Costello, Steve Gaines, Dominic Gregorio, Caroline Hermans, Ray Hilborn, John Largier, Gerry McChesney, Steven Morgan, Karina Nielsen, Pete Raimondi, Astrid Scholz, John Ugoretz

SAT members absent: Carl Walters

MLPA staff present: Allison Arnold, Susan Ashcraft, Mary Gleason, Seth Miller, Melissa Miller-Henson, Rebecca Studebaker, Jason Vasques, Ken Wiseman

Meeting Objectives

- Review, discuss, and potentially approve responses to science questions
- Review and potentially approve evaluations of draft options for marine protected area (MPA) arrays by work groups of the MLPA North Central Coast Regional Stakeholder Group and draft external MPA proposals submitted external to the work group process
- Determine how and who to present evaluations
- Review and discuss next steps for parallel processes assessments of draft options for MPA arrays and draft external MPA proposals

Meeting Summary

1. Welcome, introductions, and review of agenda

Meeting was convened at 9:40 a.m. No changes were made to the agenda; however, there was insufficient time during the meeting to discuss parallel processes, so an additional SAT meeting was scheduled to cover this topic.

2. Updates (Attachments 1-3)

Updates included a review of the meeting attachments and handouts.

3. Science questions (Attachments 4-5 and Handouts A-B)

The SAT reviewed science questions posed at the October 16-17, 2007 meeting of the

NCCRSG, and identified certain SAT members to assist in drafting responses to the questions. The SAT reviewed outstanding draft responses to questions posed at previous NCCRSG meetings and adopted all responses, pending minor revisions to certain questions.

4. Evaluation process for draft options for MPA arrays and draft external MPA proposals (Attachment 6 and Handouts C-D)

- A. Mary Gleason presented an overview of draft options for MPA arrays (developed by regional stakeholder work groups) and draft external MPA proposals (developed external to the work group process). The SAT evaluated ten proposals in this first round of the iterative evaluation process, and presented preliminary evaluations concerning levels of protection, habitat representation, size and spacing, and potential socioeconomic impacts.
- B. Mark Carr presented the levels of protection used in the evaluation of the draft MPA arrays and proposals. Protection levels were divided into six categories ranging from “very high” protection (state marine reserves) to “low” protection (areas permitting fishing methods with high ecosystem impacts). The protection level designations initially had a numeric naming, but the SAT voted to remove the numbers to avoid confusion since they were only being used for naming purposes rather than for any numerical evaluation.

Each level of protection has permitted activities, and SAT members discussed the appropriate placement for the various activities. Most of the discussion focused on whether or not salmon trolling should remain divided into two categories, with trolling in water deeper than 50 meters falling in the “high” protection category and trolling in water shallower than 50 meters falling in the “moderately high” protection category. The SAT voted to maintain the separation between the two trolling depths and to discuss this topic further at a future SAT meeting, but will add a statement for the MLPA Blue Ribbon Task Force indicating that this distinction is based on the best available data, which is limited.

The SAT discussed levels of protection for other fishing activities, and voted to leave crab fishing at its current level of protection and move salmon mooching from moderately high protection to moderate protection. The SAT unanimously approved the levels of protection methods pending splitting the herring fishery between nearshore and pelagic fisheries and several minor changes (such as specifying differences in the take of various kelp species and clarifying the rationale behind certain decisions).

- C. Pete Raimondi and Mark Carr presented the evaluation of habitat representation with a discussion of the habitat determination methodology and a graphical representation of the percentage of available habitats protected in each MPA array. The SAT approved the habitat representation methodology.
- D. Steve Gaines presented the evaluation of size and spacing for each MPA array. Reserve spacing was evaluated by habitat type, since species assemblages depend on specific habitat types. The SAT approved the size and spacing methodology.
- E. The evaluation of foraging, breeding, and rearing areas discussion was tabled to a future

SAT meeting.

- F. Astrid Scholz presented the evaluation of socioeconomic factors for each MPA array, describing the maximum possible financial impacts each array could incur. The SAT approved the socioeconomic evaluation methodology.
- G. Members from each stakeholder work group (jade, emerald and turquoise) and each draft external proposal (A, B, C and D) held a panel discussion with members of the SAT to discuss each draft MPA array/proposal and answer specific questions. Panel members described the rationale behind their arrays and asked the SAT questions about future evaluations. Panel members were Karen Garrison, Rick Johnson, Patricia King, Paul Pierce, Santi Roberts, Ben Sleeter (left early with the flu), Ed Tavasieff, Kate Wing, Dan Wolford, Dave Yarger

5. Parallel processes assessment (Handouts E-F)

There was insufficient time to discuss parallel processes, so an additional SAT meeting was scheduled for November 29, 2007 specifically for this topic.

6. Presenting evaluations to the MLPA Blue Ribbon Task Force and North Central Coast Regional Stakeholder Group

SAT members discussed the procedure for presenting SAT evaluations to the MLPA Blue Ribbon Task Force (BRTF). Members involved in the MLPA Central Coast Project discussed how evaluations were presented, which included standardized presentations given by SAT members; it was agreed that this format would be used to present evaluations during the NCCSR as well. SAT members who presented evaluations during this meeting volunteered to present the same evaluations to the BRTF at their next meeting.

7. Public comments

Public comment primarily focused on fishing regulations and the levels of protection evaluation presented by Mark Carr. Members of the public commented on the use of the term “bycatch” and requested that it be more clearly defined when the SAT uses the term (the term has formal definition in fisheries management that may not be appropriate for this context). The public also discussed various fishing techniques and the possible impacts each technique could have on the ecosystem. Other topics included the recent oil spill in San Francisco Bay and the need to set up a statewide interests group for the MLPA process.

8. Next steps

Future meetings will be scheduled to discuss the findings of the parallel approaches workgroup, which was an agenda item that the SAT did complete at this meeting.

Documents provided at or in preparation for the meeting

Attachments

1. SAT October 1, 2007 meeting summary
2. *List of Species Likely to Benefit from Marine Protected Areas in the MLPA North Central Coast Study Region (adopted October 1, 2007)*
3. November 1, 2007 memo from the California Department of Fish and Game regarding special closures as they apply to the Marine Life Protection Act
4. *Draft Responses to Science Questions Posed by the NCCRSG at its July 10-11, 2007 Meeting (revised November 5, 2007)*
5. *Draft Responses to Science Questions Posed by Santi Roberts/Oceana in a Letter Dated September 10, 2007 (revised November 5, 2007)*
6. Descriptions of draft options for MPA arrays EA, EB, JA, JB, TA and TB, and draft external MPA proposals A, B, C and D
7. PowerPoint presentation: *Ocean Patterns (John Largier, Bodega Marine Laboratory)*

Handouts

- A. *Draft Responses to Questions Posed at the October 16-17, 2007 Meeting of the North Central Coast Regional Stakeholder Group (revised November 9, 2007)*
- B. *Draft Work Group Responses to Science Questions Posed by the NCCRSG at its August 22-23, 2007 Meeting (revised November 9, 2007)*
- C. PowerPoint presentation: *Overview of Draft Options for MPA Arrays and First Draft Proposals (Mary Gleason, MLPA Initiative)*
- D. *Draft MLPA Evaluation Methods for MPA Proposals*
- E. Overview of modeling approaches for parallel approaches work group

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team (SAT)
Draft Meeting Agenda
(prepared November 19, 2007)**

Thursday, November 29, 2007

11:00 a.m. via teleconference and webinar (for presentations)

Toll free phone number: 800.974.2163 (passcode: 99849343#)

Presentations via GoToWebinar: <https://www1.gotomeeting.com/register/790387828>

**For teleconference and webinar access: Resources Building *
1416 Ninth Street, Suite 1311
Sacramento, CA 95814**

Members of the public are invited to listen to the meeting using the toll-free phone number and passcode, or may use the MLPA offices for telephone access. This agenda may be found on the MLPA website at www.dfg.ca.gov/mlpa/meetings.asp.

Public participation: The public will be invited by the co-chairs to offer comments on the agenda item. General comments on the MLPA Initiative and the work of the MLPA Master Plan Science Advisory Team not specific to the agenda item will be taken at approximately 11:10 a.m.

Meeting Objectives

- *Receive report from the work group on parallel processes for evaluating marine protected area (MPA) proposals and discuss potential uses of various models*

Meeting Agenda

1. **Updates**
2. **Public comment**
3. **Parallel processes work group report and discussion**

** This facility is accessible to persons with disabilities. To request reasonable accommodations for a disability, please contact California Relay Service (at least two days prior to the meeting) at 800.735.2929 (TT) or 800.735.2922 (voice) and ask them to contact the California Marine Life Protection Act Initiative at 916.653.5656.*

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team (SAT)
November 29, 2007 Meeting Summary
(revised January 3, 2008)**

**Via teleconference and webconference
Access at Resources Building
1416 Ninth Street, Suite 1311
Sacramento, CA 95814**

Note: Audio and video recordings of this meeting are available on the Internet at <http://www.dfg.ca.gov/mlpa/>. Please contact AGP Video Services at (805) 772-2715 to obtain DVD copies of these recordings.

SAT members attending: Eric Bjorkstedt, Mark Carr, Chris Costello, Steve Gaines, Dominic Gregorio, Ray Hilborn, John Largier, Steven Morgan, Karina Nielsen, John Ugoretz, Carl Walters

SAT members absent: Sarah Allen, Caroline Hermans, Gerry McChesney, Pete Raimondi, Astrid Scholz,

MLPA and SAT staff present: Allison Arnold, Susan Ashcraft, Amy Brooke, Darci Connor, Evan Fox, Mary Gleason, Seth Miller, Melissa Miller-Henson, Rebecca Studebaker, Jason Vasques, Ken Wiseman

Others attending: Dr. Loo Botsford, Will White, Mike Mertens

Meeting Objective

- *Receive report from the work group on parallel processes for evaluating marine protected area (MPA) proposals and discuss potential uses of various models*

Meeting Summary

The meeting was brought to order at 11:10 a.m.

1. Updates

Updates included an overview of the ground rules for a web-conference.

2. Public comment

Public comment was moved to later in the agenda, after the parallel processes work group report.

3. Parallel processes work group report and discussion

Members of the parallel processes work group presented an overview of their individual models to the full SAT. Five models were presented: Three single-species models by Ray Hilborn, Chris Costello, and Loo Botsford; an ecosystem model by Carl Walters; and a socioeconomic impacts model by Mike Mertens and Ecotrust. Single-species models were largely similar, but differed in spatial scales.

Key issues for model development include:

- whether or not to consider only state waters,
 - models are sensitive to how catch is regulated,
 - larval dispersal and connectivity is not based on local oceanography,
 - adult movement patterns are poorly understood, and
 - the timing of density dependent mortality varies.
- A. The model presented by Ray Hilborn deals with area/catch tradeoffs—more areas in reserves leads to less total catch but higher biomass, but the significance of the tradeoff varies by species.
- B. The model presented by Chris Costello showed that there was little difference among proposed MPA arrays if fishing regulations outside the MPAs allow take at the level of maximum sustainable yield, and that ranking the arrays for biomass depends critically on assumptions of fishing pressures outside MPAs. Thus models that are robust to different management types are important for this process.
- C. Loo Botsford's presentation showed that the impacts of MPAs depends upon existing fishing pressure, with MPAs providing no benefit in areas of extreme fishing pressure and having no effect in areas of very low fishing pressure. None of the proposed MPA arrays would allow the persistence of any of the species with larger home ranges, but this result was unsurprising given that none of the proposed MPA arrays met the size and spacing guidelines.
- D. The model presented by Carl Walters is the only model that currently can evaluate the impacts of the proposed MPA arrays on several species simultaneously. The model also allows for dynamic fleet movement, so fishing pressure can shift as protected areas are closed to fishing.
- E. The Marxan socioeconomic model presented by Mike Mertens aims to minimize the cost to fisheries while maintaining habitat protection requirements, and could possibly help MLPA North Central Coast Regional Stakeholder Group members adjust the boundaries of their proposed MPA arrays to protect larger areas with fewer socioeconomic costs.

Combining existing models

Members of the parallel processes work group and SAT discussed the possibility of merging existing models and presenting the new models at the January 8, 2008 meeting of the MLPA

Master Plan Science Advisory Team (SAT). Modelers agreed that they could consolidate the five models into two models: an optimization model created by Chris Costello and Carl Walters with input from Mike Mertens, and a non-optimization model created by Loo Botsford and Ray Hilborn. These models will be made as user-friendly as possible and be accompanied by a fact sheet at the January 8, 2008 SAT meeting, which will serve as a trial run to determine their suitability for use during the MLPA Initiative process. Additionally, the MARXAN model will be discussed at the January 8, 2008 SAT meeting.

4. Public comment

Members of the public primarily requested that models be user-friendly and simple to understand, so that stakeholders can easily use them—the model output is currently too confusing to be useful for stakeholders. Members of the public also expressed concerns that these models might not successfully evaluate how well different proposed MPA arrays achieve goals such as habitat protection and enhanced recreational experiences.

5. Next steps

Parallel processes work group members will develop two models for presentation at the January 8, 2008 meeting of the SAT. Each model will be as user-friendly as possible by the meeting, and SAT members are invited to send suggestions to work group members as to how to achieve that goal. The MARXAN model will be discussed for its potential as an evaluative tool by both the parallel processes work group and at the January 8, 2008 SAT meeting. A simplified fact sheet describing parameters and assumptions will be included with each model during its presentation at the January 8, 2008 SAT meeting.

Documents provided at the November 29, 2007 meeting

No documents were provided as attachments or handouts at this meeting; all materials were presented via PowerPoint slides.

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team (SAT)
Draft Meeting Agenda
(revised January 8, 2008)**

**Tuesday January 8, 2008
9:30 a.m.**

**Aviation Library and Museum *
International Terminal
San Francisco International Airport**

Members of the public are invited to attend the meeting in person or view and listen to the meeting via simultaneous webcasting on the Internet, and may view an archived version approximately two days after the meeting. Please visit the MLPA website at www.dfg.ca.gov/mlpa/meetings.asp for more information.

Public participation: The public will be invited by the co-chairs to offer comments on agenda action items. General comments on the MLPA Initiative and the work of the MLPA Master Plan Science Advisory Team, **not directed to specific agenda items**, will be taken after lunch at approximately 1:15 p.m.

Meeting Objectives

- *Receive report from work group on parallel approaches to evaluating marine protected area (MPA) proposals and potentially approve parallel approach(es) for use in the MLPA North Central Coast Study Region*
- *Review, discuss, and potentially approve draft evaluation methods for MPA proposals*
- *Review, discuss, and potentially approve responses to science questions*

Meeting Agenda

(note that the SAT will break for lunch at approximately 12:30 p.m.)

1.	Welcome, introductions, and review of agenda
2.	Updates (Attachments 1-2)
3.	Parallel Processes Workgroup Report and Discussion (Attachment 3 and Handouts A, J-M) A. MARXAN: Optimized solver for selection / modification of MPA networks – Mike Mertens (Ecotrust) B. Equilibrium Optimization Model – Chris Costello C. Population Sustainability and Yield Model – Dr. Loo Botsford (University of California, Davis) D. Discuss and potentially approve parallel approach(es) for use in the MLPA North Central Coast Study Region

** This facility is accessible to persons with disabilities. To request reasonable accommodations for a disability, please contact California Relay Service (at least two days prior to the meeting) at 800.735.2929 (TT) or 800.735.2922 (voice) and ask them to contact the California Marine Life Protection Act Initiative at 916.653.5656.*

4.	<p>Evaluation methods and process for draft MPA proposals (Attachment 4 and Handouts B-F and H-I)</p> <p>A. Review, discuss and potentially approve <i>Draft MLPA Evaluation Methods for MPA Proposals</i></p> <ul style="list-style-type: none"> a. Informative evaluations to support core evaluations (informational) b. Linear versus area calculations (new) c. Bird/mammal foraging, breeding and rearing areas (new) d. Size and spacing for estuaries (new) e. Application of replication guidelines (informational) f. Application of size guidelines (informational) g. Levels of protection (potential revisions) <p>B. Evaluation timeline and presentations to the MLPA North Central Coast Regional Stakeholder Group and Blue Ribbon Task Force</p>
5.	<p>Science questions (Attachment 5 and Handout G)</p> <p>A. Report on new questions and drafts of responses</p> <p>B. Review and potentially approve responses to outstanding science questions</p>
6.	<p>Wrap up and next steps</p> <p>A. Meeting schedule for future SAT and other meetings</p>
7.	<p>Adjourn</p>

Attachments

1. November 13, 2007 SAT meeting summary and November 29, 2007 SAT meeting summary
2. Calendar of MLPA Initiative meetings, revised January 2, 2007
3. Parallel processes fact sheets
 - a. MARXAN Model
 - b. Equilibrium Optimization Model (detailed Hilborn, et al. paper)
 - c. Population Sustainability and Yield Model
4. Cover memo and data summaries to support discussion of *Draft MLPA Evaluation Methods for MPA Proposals*
 - a. Memo regarding CRFS data and summary of commercial passenger fishing vessel (CPFV) logbook data
 - b. Summary of commercial passenger fishing vessel (CPFV) trip counts
 - c. Rockfish bycatch report from the National Marine Fisheries Service
 - d. Memo regarding shorefishing, Moss Beach fishing records draft analysis and summary charts, and summary of reported and estimated catch from shore based fishing modes
 - e. Potential impacts of selective harvesting in crab populations
5. Cover memo and draft responses to science questions
 - a. *Draft Responses to Questions Posed at the October 16-17, 2007 NCCRS Meeting (revised January 3, 2008)*

- b. *Draft Work Group Responses to Science Questions Posed at the November 28, 2007 NCCRSB meeting (revised January 3, 2008)*
- c. *Draft Responses to Science Questions Posed by the NCCRSB at its December 11-12, 2007 Meeting (revised December 31, 2007)*

Handouts

- A. *Parallel processes fact sheet: Draft Layperson's Guide to Interpreting EDOM Model*
- B. *Methods Used to Evaluate Draft MPA Proposals in the North Central Coast Study Region (January 7, 2008 revised draft)*
- C. *Draft Data Summary: Proportion of Recreational and Commercial Salmon Fishing Grounds by Depth Strata*
- D. *Further analysis of salmon associated catch*
- E. *Potential Impacts of Sex- and Size-Selective Harvesting in Crab Populations*
- F. *Potential Impacts of Mariculture Activities in the MLPA North Central Coast Study Region*
- G. *Draft Responses to Question #9 Received at the October 16-17, 2007 Meeting of the North Central Coast Regional Stakeholder Group (January 6, 2008)*
- H. *PowerPoint slides: An analysis of rockfish landings associated with commercial salmon troll fishery off California (Eric Bjorkstedt, MLPA Master Plan Science Advisory Team, Parallel Approaches Work Group)*
- I. *PowerPoint slides: Impact of associated catch from salmon trolling (Ray Hilborn, MLPA Master Plan Science Advisory Team, Parallel Approaches Work Group)*
- J. *PowerPoint slides: Equilibrium Delay-Difference Optimization Model Designing, evaluating, and comparing proposals under the MLPA (Carl Walters, Ray Hilborn and Chris Costello)*
- K. *PowerPoint slides: A Model to Evaluate Sustainability and Yield of Proposed MPA Plans (Dr. Loo Botsford, et al., University of California, Davis)*
- L. *PowerPoint slides: Use of Marxan in evaluation of stakeholder proposals for the North Central Coast Study Region: MLPA (Mike Mertens, Ecotrust)*
- M. *PowerPoint slides: Seabird and Marine Mammal Evaluations for the MLPA North Central Coast Study Region (Gerry McChesney and Sarah Allen)*

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team (SAT)
January 8, 2008 Meeting Summary
(revised March 31, 2008)**

**Aviation Library and Museum
International Terminal
San Francisco International Airport
9:30 a.m. - 6:30 p.m.**

Note: Audio and video recordings of this meeting are available on the Internet at <http://www.dfg.ca.gov/mlpa/>. Please contact AGP Video Services at (805) 772-2715 to obtain DVD copies of these recordings.

SAT members attending: Sarah Allen, Eric Bjorkstedt, Mark Carr, Chris Costello, Steve Gaines, Dominic Gregorio, John Largier, Gerry McChesney, Steve Morgan, Karina Nielsen, Astrid Scholz, and Ray Hilborn (by teleconference).

SAT members absent: Caroline Hermans, Carl Walters

MLPA staff present: Allison Arnold, Susan Ashcraft, Amy Brookes, Darci Connor, Matt Erickson, Delbra Gibbs, Mary Gleason, Seth Miller, Melissa Miller-Henson, Rebecca Studebaker, Lynn Takata, Jason Vasques, Ken Wiseman.

Other meeting contributors: Dr. Loo Botsford, Mike Mertens

Meeting Objectives

- *Receive report from work group on parallel approaches to evaluating marine protected area (MPA) proposals and potentially approve parallel approach(es) for use in the MLPA North Central Coast Study Region*
- *Review, discuss, and potentially approve draft evaluation methods for MPA proposals*
- *Review, discuss, and potentially approve responses to science questions*

The meeting agenda can be found on the MLPA website at:
http://www.dfg.ca.gov/mlpa/meeting_010808.asp

Meeting Summary

The meeting was brought to order at 9:30 a.m.

1. Welcome, introductions, and review of agenda

Meeting was brought to order. Agenda was revised to move Costello's presentation before Ecotrust's (Mike Merten), due to a plane delay. Also, public comments may be taken after Agenda Item 5.

2. Updates

Mary Gleason provided an update on the status of draft MPA proposals, of which there are now five arrays.

3. Parallel processes workgroup report and discussion (Attachment 3 and Handouts A, J-M)

- A. Equilibrium Optimization Model - Presentation by Chris Costello
- B. Population Sustainability and Yield Model – Presentation by Dr. Loo Botsford (University of California, Davis)
- C. *MARXAN*: Optimized solver for selection/modification of MPA networks – Presentation by Mike Mertens (EcoTrust)

Mike Mertens recommended that *MARXAN* not be used for evaluating proposals.

- D. Discuss and potentially approve parallel approach(es) for use in the MLPA North Central Coast Study Region

The SAT provided the following suggestions for the parallel processes workgroup:

- Include larval movement from north/south instead of assuming a closed system.
- Incorporate more data on larval dispersal and adult home ranges.
- Incorporate species hitherto not considered by the models: non-fished species, especially those subject to anthropogenic impact, and species with short larval dispersal distances or small adult home ranges.
- Consider ecological interactions in modeling; focus on ecologically important species and foundation species.
- Include aspects of water quality.
- Reach consensus on parameters used in models.
- Use *MARXAN* fleet data to help parameterize the biological models.
- Ensure models incorporate varying levels of protection for MPAs.
- Account for differences in land ownership and meteorological patterns.
- Perform comparisons among the different modeling approaches.
- Determine which goals and objectives each model can help evaluate.
- Discuss future directions to be taken by the modeling effort, especially given the prospect of budget reductions.

The SAT made a general suggestion to consider submitting a request to the Fish and Game Commission to change the Master Plan, by replacing the size and spacing

guidelines with an appropriate model. For now, models may be complementary to the size and spacing guidelines, but cannot replace them.

4. Public comment (added to agenda)

More than twenty members of the public provided commentary. Most of the commentary was focused on the issue of potential revisions in the levels of protection for salmon trolling. Many members of the public provided anecdotal evidence and explanations of discrepancies in logbook data, suggesting that salmon trolling does not result in significant rockfish bycatch. Others questioned the quality of data currently being used for assessing the impact of salmon trolling. The lack of data on private boats was highlighted. Some recommended focusing on the actual number of rockfish taken as opposed to the percentage relative to salmon take, for the sake of addressing ecosystem functioning.

The use of models provoked much discussion as well. Many supported the use of models, but to a limited extent, expressing concern that models were going to replace stakeholder collaboration, local knowledge, or even scientific advising.

5. Evaluation methods and process for draft MPA proposals (Attachment 4 and Handouts B-F and H-I)

A. Review, discuss and potentially approve *Draft MLPA Evaluation Methods for MPA Proposals*

- a. Informative evaluations to support core evaluations (informational)
- b. Linear versus area calculations (new)
- c. Bird/mammal foraging, breeding and rearing areas (new)
- d. Size and spacing for estuaries (new)
 - Overall estuarine area must be at least 0.12 sq mi to be considered, and any habitat in that must be 0.4 sq mi. The eelgrass feature is a subtidal habitat and thus includes channels.
- e. Application of replication guidelines (informational)
- f. Application of size guidelines (informational)
- g. Levels of protection (potential revisions)

After lengthy discussion, the SAT agreed to vote on one of three alternatives, given the current status of salmon trolling. Salmon trolling currently has a high level of protection in depths greater than 50m, and has a moderate-high level in waters less than 50m, regardless of bottom type.

The alternatives:

- Salmon trolling level of protection is high regardless of depth and habitat type.

- The level of protection in less than 50m would differ with respect to habitat type, with sand having a high level, and rock having moderate-high level. In this case, it would be necessary to identify how much rock habitat is rock-dominated and how much sand habitat is sand-dominated.
- No change.

B. Evaluation timeline and presentations to the MLPA North Central Coast Regional Stakeholder Group and Blue Ribbon Task Force

6. Science questions (Attachment 5 and Handout G)

- A. Report on new questions and drafts of responses
- B. Review and potentially approve responses to outstanding science questions

7. Wrap up and next steps

The SAT postponed voting on salmon trolling until the next SAT meeting, as several key members had left the meeting and would not be able to contribute. It was requested that the SAT consider all the evaluation and levels of protection topics prior to the next meeting so that these may be reviewed quickly.

The SAT voted on bird and mammal evaluation methods, with 10 in favor and no dissents. The SAT also voted in favor of linear vs. area calculations, size and spacing for estuaries, and changing the wording for replication guidelines to Blue Ribbon Task Force.

The SAT formed a subgroup to help modelers with incorporating the suggestions outlined above, and to converge on a set of parameters to be used in the models. The subgroup includes Mark Carr, Steve Gaines, Dominic Gregorio, and John Largier.

Next SAT meeting:

January 23, 2008
Best Western Lighthouse Hotel, Pacifica
Analysis of draft MPA proposals for the north central coast

8. Adjourn

The meeting adjourned at 6:25 p.m.

Documents provided at January 7, 2008 meeting

- A. Parallel processes fact sheet: *Draft Layperson's Guide to Interpreting EDOM Model*
- B. *Methods Used to Evaluate Draft MPA Proposals in the North Central Coast Study Region (January 7, 2008 revised draft)*

- C. *Draft Data Summary: Proportion of Recreational and Commercial Salmon Fishing Grounds by Depth Strata*
- D. *Further analysis of salmon associated catch*
- E. *Potential Impacts of Sex- and Size-Selective Harvesting in Crab Populations*
- F. *Potential Impacts of Mariculture Activities in the MLPA North Central Coast Study Region*
- G. *Draft Responses to Question #9 Posed at the October 16-17, 2007 Meeting of the North Central Coast Regional Stakeholder Group (January 6, 2008)*
- H. *PowerPoint slides: An analysis of rockfish landings associated with commercial salmon troll fishery off California (Eric Bjorkstedt, MLPA Master Plan Science Advisory Team, Parallel Approaches Work Group)*
- I. *PowerPoint slides: Impact of associated catch from salmon trolling (Ray Hilborn, MLPA Master Plan Science Advisory Team, Parallel Approaches Work Group)*

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team (SAT)
Draft Meeting Agenda
(revised January 23, 2008)**

**Wednesday January 23, 2008
9:30 a.m.**

**Best Western Lighthouse Hotel *
105 Rockaway Beach Avenue
Pacifica, CA 94044**

Members of the public are invited to attend the meeting in person or view and listen to the meeting via simultaneous webcasting on the Internet, and may view an archived version approximately two days after the meeting. Please visit the MLPA website at www.dfg.ca.gov/mlpa/meetings.asp for more information.

Public participation: The public will be invited by the co-chairs to offer comments on agenda action items. General comments on the work of the MLPA SAT, **not directed to specific agenda items, will be taken after lunch at approximately 1:15 p.m.** Note that the general comment period is for public comment specific to the MLPA Master Plan Science Advisory Team; comments related to the regional stakeholder group, task force or other MLPA Initiative activities should be directed to those bodies or MLPA staff.

Meeting Objectives

- Review and potentially approve evaluation methods for MPA proposals
- Review, discuss, and potentially approve evaluations of draft MPA proposals
- Receive report from modeling work group and potentially approve parallel approach(es) for use in the MLPA North Central Coast Study Region and/or future study regions
- Review, discuss, and potentially approve responses to science questions

Meeting Agenda

(note that the SAT will break for lunch at approximately 12:30 p.m.)

9:30 a.m.	1.	Welcome, introductions, and review of agenda
9:45 a.m.	2.	Updates (Attachment 1)
9:50 a.m.	3.	Evaluation methods for north central coast draft MPA proposals (Attachments 2-4, Handout A) A. Review, discuss and potentially approve evaluation methods for MPA proposals in the north central coast

* This facility is accessible to persons with disabilities. To request reasonable accommodations for a disability, please contact California Relay Service (at least two days prior to the meeting) at 800.735.2929 (TT) or 800.735.2922 (voice) and ask them to contact the California Marine Life Protection Act Initiative at 916.653.5656.

11:30 a.m.	4.	Evaluations of draft MPA proposals (Handouts B-E, G) A. Review, discuss and <i>potentially approve</i> evaluations of draft MPA proposals for the north central coast B. Evaluation timeline and presentations to the MLPA North Central Coast Regional Stakeholder Group and Blue Ribbon Task Force
2:35 p.m.	5.	Modeling work group (Attachment 5, Handout F, H, I, J) A. Equilibrium Delay-difference Optimization Model – Chris Costello B. Population Sustainability and Yield Model – Dr. Loo Botsford (University of California, Davis) C. Discuss and <i>potentially approve</i> recommendation regarding parallel approach(es) for use in the MLPA North Central Coast Study Region and/or future study regions, including modeling group synthesis document
4:35 p.m.	6.	Science questions (Attachments 6-7) A. Report on new questions and drafts of responses B. Review and <i>potentially approve</i> responses to outstanding science questions
5:20 p.m.	7.	Adjourn

Attachments

1. Calendar of MLPA Initiative meetings, revised January 17, 2007
2. *Methods Used to Evaluate Draft MPA Proposals in the North Central Coast Study Region (January 16, 2008 revised draft)*
3. Cover memo and data summaries to support discussion of *Draft MLPA Evaluation Methods for MPA Proposals*
 - a. Memo regarding CRFS data and summary of commercial passenger fishing vessel (CPFV) logbook data
 - b. Summary of commercial passenger fishing vessel (CPFV) trip counts
 - c. Rockfish bycatch report from the National Marine Fisheries Service
 - d. Memo regarding shorefishing, Moss Beach fishing records draft analysis and summary charts, and summary of reported and estimated catch from shore based fishing modes
4. Additional data to support discussion of *Draft MLPA Evaluation Methods for MPA Proposals*
 - a. *Draft Data Summary: Proportion of Recreational and Commercial Salmon Fishing Grounds by Depth Strata*
 - b. *Further analysis of salmon associated catch*
 - c. *Potential Impacts of Sex- and Size-Selective Harvesting in Crab Populations*
 - d. *Potential Impacts of Mariculture Activities in the MLPA North Central Coast Study Region*
5. Parallel processes fact sheets
 - a. *Draft Layperson’s Guide to Interpreting UC Davis Model (Population Sustainability and Yield Model)*

- b. *Draft Layperson's Guide to Interpreting EDOM Model (Equilibrium Delay-difference Optimization Model)*
6. Cover memo and draft responses to science questions
 - a. *Draft Responses to Questions Posed at the October 16-17, 2007 NCCRSO Meeting (revised January 3, 2008)*
 - b. *Draft Work Group Responses to Science Questions Posed at the November 28, 2007 NCCRSO meeting (revised January 3, 2008)*
 - c. *Draft Responses to Science Questions Posed by the NCCRSO at its December 11-12, 2007 Meeting (revised December 31, 2007)*
7. *Draft Responses to Question #9 Posed at the October 16-17, 2007 Meeting of the North Central Coast Regional Stakeholder Group (January 6, 2008)*

Handouts

- A. *Addendum to Methods Used to Evaluate Draft MPA Proposals in the North Central Coast Study Region: Known important prey for the harbor seal in north central California* (January 21, 2008)
- B. PowerPoint presentation: *Evaluations of draft MPA proposals for the north central coast* (Mary Gleason, MLPA Initiative)
- C. PowerPoint presentation: *Draft MPA proposal evaluations north central coast study region* (Dr. Mark Carr, Master Plan Science Advisory Team) regarding habitat representation and replication
- D. PowerPoint presentation: *North Central Coast Size and Spacing Evaluations* (Dr. Steve Gaines, Master Plan Science Advisory Team)
- E. PowerPoint presentation regarding preliminary bird and mammal evaluation (Gerry McChesney and Dr. Sarah Allen)
- F. *A synthesis of insights and results from spatially explicit models to support evaluation and revision of MPA proposals* (Eric P. Bjorkstedt draft, January 22, 2008)
- G. *Summary of potential impacts of the December 2007 MPA proposals on commercial and recreational fisheries in the North Central Coast Study Region* (January 22, 2008 – Ecotrust)
- H. PowerPoint presentation: *Package Evaluation by the Delay-Difference Model* (Dr. Chris Costello, Master Plan Science Advisory Team)
- I. *Equilibrium Delay Difference Model: Summary of Results* (January 23, 2008 - Dr. Chris Costello, et al.)
- J. PowerPoint presentation: *A Model to Evaluate Sustainability and Yield of Proposed MPA Plans II* (Dr. Loo Botsford, et al.)

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team (SAT)
January 23, 2008 Meeting Summary
(revised March 31, 2008)**

**Best Western Lighthouse Hotel
105 Rockaway Beach Avenue
Pacifica, CA
9:30 a.m.**

Note: Audio and video recordings of this meeting are available on the Internet at <http://www.dfg.ca.gov/mlpa/>. Please contact AGP Video Services at (805) 772-2715 to obtain DVD copies of these recordings.

SAT members attending: Sarah Allen, Eric Bjorkstedt, Mark Carr, Chris Costello, Steve Gaines, Dominic Gregorio, Gerry McChesney, Steven Morgan, Karina Nielsen, Ray Hilborn, John Ugoretz, Carl Walters

SAT members absent: Caroline Hermans, John Largier, Pete Raimondi, Astrid Scholz

Others attending: Dr. Loo Botsford

Meeting Objectives

- *Review and potentially approve evaluation methods for MPA proposals*
- *Review, discuss, and potentially approve evaluations of draft MPA proposals*
- *Receive report from modeling work group and potentially approve parallel approaches in the MLPA North Central Coast Study Region and/or future study regions*
- *Review, discuss, and potentially approve responses to science questions*

Meeting agenda may be found on the MLPA website at:
<http://www.dfg.ca.gov/mlpa/meetings.asp>

Meeting Summary

The meeting was brought to order at 9:30 a.m.

1. Welcome, introductions, and review of agenda

No changes were made to the agenda.

2. Updates

Couple of updates.

- Three upcoming public workshops (February 4- 6)
- Future meetings
- Track changes version of the Methods Used to Evaluate Proposals, as well as an addendum to that Methods document

3. Science questions

- A. Report on new questions and drafts of responses
- B. Review and potentially approve responses to outstanding science questions

Members of the SAT reviewed draft responses to science questions that had been generated by the NCCRSG. Members discussed the responses, heard public comment relating to the questions, and then unanimously voted to approve the draft responses.

4. Evaluation methods for north central coast draft MPA proposals (Attachments 2-4, Handout A)

- A. Review, discuss and **potentially approve** evaluation methods for MPA proposals in the north central coast

The SAT reviewed existing levels of protection for salmon trolling (changed to “high” in water deeper than 50m and “high/moderate-high” in water shallower than 50m), crab fishing, striped bass fishing, shorefishing, and halibut hook and line fishing (all remained at their previous level of protection). Members also established new levels of protection for mariculture activities (“low”), which had not been previously reviewed.

Salmon Trolling

During the January 8, 2008 SAT meeting, members agreed to postpone a vote on the level of protection assigned to areas permitting salmon trolling until the January 23, 2008 meeting. A four-part vote was established to afford this complex issue the attention it deserved. First, SAT members voted unanimously to reject the division of salmon trolling into areas deeper than 50 meters and shallower than 50 meters for the purposes of assigning levels of protection. Next, members voted on three alternative plans:

1. Designate areas with salmon trolling as “high” level of protection, regardless of depth and substrate.
2. Designate areas with salmon trolling as “high” level of protection over soft bottom habitats and “moderate-high” over rocky habitats.
3. Designate areas with salmon trolling as “high” level of protection deeper than 50 meters and “high/moderate-high” level of protection in areas shallower than 50 meters.

SAT members voted 4-8 for alternative 1 and 5-7 for alternative 2, so both failed. Alternative 3 received a 7-4 vote (with one member not present), so alternative 3 passed. Alternative 3 was created to indicate to the Blue Ribbon Task Force (BRTF) that a level of uncertainty existed in the data for salmon trolling, and the SAT was divided as to how best to interpret the data.

Mariculture

SAT co-chair Mark Carr presented information about the potential and actual impacts of mariculture activities in the North Central Coast Study Region (NCCSR). After discussion among SAT members and after hearing public comment, the SAT unanimously voted to assign a “low” level of protection to areas allowing mariculture activities.

Shorefishing

Members of the SAT heard comments from the public on the impacts of shorefishing and did not make a motion to change the current level of protection, so it remained at “moderate.”

Crabs

SAT co-chair Steven Morgan presented information about the potential impacts of crab fishing in the NCCSR. After discussion among SAT members and after hearing public comment, no motion was made to change the current level of protection, so it remained at “moderate-high.”

Halibut hook and line

After discussion among SAT members and hearing public comment, no motion was made to change the current level of protection, so it remained at “moderate.”

Striped Bass

After discussion among SAT members and hearing public comment, SAT co-chair Mark Carr moved to give a “moderate-high” protection to areas allowing striped bass fishing. Members voted 2-7, so the motion failed and the level of protection remained at “moderate.”

Changes to the Evaluation Methods document

SAT members unanimously voted to approve changes in the evaluation methods document to reflect the above votes and add information about the potential impacts of crab fishing in the appendix.

4. Evaluations of draft MPA proposals

- A. *Review, discuss and **potentially approve** evaluations of draft MPA proposals in the north central coast*
- B. *Evaluation timeline and presentations to the MLPA North Central Coast Regional Stakeholder Group and the BRTF*

Mary Gleason introduced the evaluations of draft MPA proposals for the NCCSR. SAT co-chair, Mark Carr, presented the evaluations of habitat types and replication. Steve Gaines presented the evaluations of the size and spacing guidelines. Gerry McChesney and Sarah Allen presented the evaluations for birds and mammals. Susan Ashcraft presented a summary of the potential socioeconomic impacts of the draft MPA proposals.

After discussion among SAT members and after hearing public comments on all aspects of the MLPA process, members unanimously voted to accept the evaluations of draft MPA proposals and present them at the next BRTF meeting.

5. Modeling work group

- A. *Equilibrium Delay-difference Optimization Model – Chris Costello*

- B. *Population Sustainability and Yield Model – Dr. Loo Botsford (University of California, Davis)*
- C. *Discuss and **potentially approve** recommendation regarding parallel approach(es) for use in the MLPA North Central Coast Study Region and/or future study regions, including modeling group synthesis document*

Members of the modeling work group presented their evaluations of the draft MPA proposals, which showed overall similar results. Chris Costello presented a sensitivity analysis that revealed model results are insensitive to adult home range and larval dispersal parameters, which indicated that exact measurements of these parameters was not required for successful model runs. Eric Bjorkstedt presented a document showing that the rankings among draft MPA proposals were the same between models and the size and spacing guidelines, and suggested that the models could be used to illuminate detailed differences among the proposals that were not evident using the other evaluation methods. A new modeling work group was formed to create model user's guides and to determine how to develop these models as complementary approaches to the draft MPA proposal evaluation process. SAT members voted unanimously to move forward with both models.

6. Public Comments

Throughout the day, members of the public commented on levels of protection, the progress of the modeling work group, and the MLPA process in general. Most public comments focused on presenting data and opinions in support of or against changing the levels of protection assigned to certain activities. Members of the public also commented on socioeconomic issues related to the draft MPA proposals, and reminded the SAT that most fishers fish multiple species and thus could be impacted multiple times by fishing closures. Members of the public also requested more clarity on how the models work and how to use them when outlining MPA arrays.

7. Next Steps

SAT members will present their evaluations at the next BRTF meeting. The new modeling work group will continue to work towards a goal of presenting easily-digestible data to the BRTF and the NCCRSB, and will continue the development of the models as complementary tools in the evaluation process.

8. Adjourn

The meeting adjourned at 5:20 p.m.

Documents provided at the January 23, 2008 meeting

- A. *Addendum to Methods Used to Evaluate Draft MPA Proposals in the North Central Coast Study Region: Known important prey for the harbor seal in north central California (January 21, 2008)*
- B. *PowerPoint presentation: Evaluations of draft MPA proposals for the north central coast (Mary Gleason, MLPA Initiative)*

- C. PowerPoint presentation: *Draft MPA proposal evaluations north central coast study region* (Dr. Mark Carr, Master Plan Science Advisory Team) regarding habitat representation and replication
- D. PowerPoint presentation: *North Central Coast Size and Spacing Evaluations* (Dr. Steve Gaines, Master Plan Science Advisory Team)
- E. PowerPoint presentation regarding preliminary bird and mammal evaluation (Gerry McChesney and Dr. Sarah Allen)
- F. *A synthesis of insights and results from spatially explicit models to support evaluation and revision of MPA proposals* (Eric P. Bjorkstedt draft, January 22, 2008)
- G. *Summary of potential impacts of the December 2007 MPA proposals on commercial and recreational fisheries in the North Central Coast Study Region* (January 22, 2008 – Ecotrust)
- H. PowerPoint presentation: *Package Evaluation by the Delay-Difference Model* (Dr. Chris Costello, Master Plan Science Advisory Team)
- I. *Equilibrium Delay Difference Model: Summary of Results* (January 23, 2008 - Dr. Chris Costello, et al.)
- J. PowerPoint presentation: *A Model to Evaluate Sustainability and Yield of Proposed MPA Plans II* (Dr. Loo Botsford, et al.)

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team (SAT)
Draft Meeting Agenda
(revised April 2, 2008)**

**Thursday, April 3 2008
9:30 a.m.**

**Best Western Lighthouse Hotel *
105 Rockaway Beach Avenue
Pacifica, CA 94044**

Members of the public are invited to attend the meeting in person or view and listen to the meeting via simultaneous webcasting on the Internet, and may view an archived version approximately two days after the meeting. Please visit the MLPA website at www.dfg.ca.gov/mlpa/meetings.asp for more information.

Public participation: The public will be invited by the co-chairs to offer comments on agenda action items. General comments on the work of the MLPA SAT, ***not directed to specific agenda items, will be taken after lunch at approximately 1:30 p.m.*** Note that the general comment period is for public comment specific to the MLPA Master Plan Science Advisory Team; comments related to the regional stakeholder group, task force, or other MLPA Initiative activities should be directed to those bodies or MLPA staff.

Meeting Objectives

- *Review and potentially approve revised evaluation methods for north central coast MPA proposals*
- *Review and discuss evaluations of MLPA North Central Coast Regional Stakeholder Group (NCCRSG) marine protected area (MPA) proposals*
- *Review and discuss results of modeling NCCRSG MPA proposals*
- *Discuss and potentially make recommendations regarding use of models for evaluation purposes*
- *Review, discuss and potentially approve responses to north central coast science questions*
- *Identify potential science questions related to the MLPA South Coast Study Region and work groups to begin researching such questions*
- *Discuss and potentially add to the list of species likely to benefit from MPAs*

Meeting Agenda

Note: the science team will break for lunch at approximately 12:45 p.m.

9:30 a.m.	1.	Welcome, introductions and review of agenda
9:45 a.m.	2.	Updates (Attachment 1) A. MLPA north central coast timeline B. Resignation of SAT member

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		C. South coast science advisory team D. Next SAT meeting date May 22 or 30
10:00 a.m.	3.	Species likely to benefit from MPAs (Attachment 2, Handout A) A. Discuss and potentially add to the list of species likely to benefit from MPAs
10:20 a.m.	4.	Evaluation methods for north central coast MPA proposals (Attachment 3) <i>Review and potentially approve revised evaluation methods for north central coast MPA proposals</i> A. Operationalizing LOP assignment for salmon trolling B. Mariculture C. LOP assignments D. Methods document
11:30 a.m.	5.	Evaluations of NCCRSR MPA proposals (Handouts B-H) <i>Review and discuss evaluations of MLPA North Central Coast Regional Stakeholder Group (NCCRSR) marine protected area (MPA) proposals</i> A. Habitat representation and replication B. Size and spacing C. Birds and mammals D. Socioeconomics
2:45 p.m.	6.	Digestible modeling work group (Handout I) A. Review and discuss results of modeling NCCRSR MPA proposals B. Discuss and potentially make recommendations regarding use of the models for evaluation purposes.
4:15 p.m.	7.	Science questions (Attachment 4) A. Review, discuss and potentially approve responses to north central coast science questions B. Potential science questions related to the MLPA south coast study region C. Work groups to begin researching south coast science questions?
5:00	8.	Adjourn

Attachments

1. *California MLPA Initiative North Central Coast Regional Planning Timeline* (revised March 20, 2008)
2. *Consideration of Barred Surfperch for the List of Species Likely to Benefit from Marine Protected Areas* (revised March 25, 2008)
3. *Methods Used to Evaluate Draft MPA Proposals in the North Central Coast Study Region (March 31, 2008 revised draft)* in both clean and tracked changes format
4. Cover memo and draft responses to science questions
 - a. *Draft Work Group Responses to a Science Question Posed at the February 21, 2008 NCCRSR Meeting* (revised March 12, 2008)
 - b. *Draft Responses to Questions Received at the October 16-17, 2007 NCCRSR Meeting* (revised March 14, 2008)
 - c. *Responses to Science Questions Posed at the November 28, 2007 NCCRSR Meeting* (revised February 15, 2008)

- d. *Response to a Science Question Posed at the December 11-12, 2007 NCCRSG meeting* (revised February 15, 2008)

Handouts

- A. PowerPoint presentation: *Potential Additions to the List of Species Likely to Benefit from MPAs* (Jason Vasques, California Department of Fish and Game)
- B. PowerPoint presentation: *Evaluation of NCCRSG ("Round 3") Marine Protected Area Proposals* (Mary Gleason, MLPA Initiative)
- C. PowerPoint presentation: *Draft Habitat Evaluations of NCCRSG MPA Proposals, North Central Coast Study Region* (Dr. Mark Carr, Master Plan Science Advisory Team)
- D. PowerPoint presentation: *Size and spacing evaluation - north central coast MPA proposals* (Dr. Steve Gaines, Master Plan Science Advisory Team)
- E. Powerpoint presentation: *Birds and mammal evaluation* (Gerry McChesney and Dr. Sarah Allen)
- F. *Evaluations of Benefits to Seabirds and Waterfowl from Proposed Marine Protected Areas and Special Closures in the North Central Coast Study Region, California* (April 2, 2008)
- G. *Evaluations of Benefits to Marine Mammals from Proposed Marine Protected Areas and Special Closures in the North Central Coast Study Region, California* (April 2, 2008)
- H. Powerpoint presentation: *Summary of Potential Impacts of March 2008 NCCRSG MPA proposals on Commercial and Recreational Fisheries* (Dr. Astrid Scholz, Ecotrust)
- I. *Spatially Explicit Models to Support Evaluation and Revision of Draft Marine Protected Area Proposals* (April 2, 2008)

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team
Thursday, April 3, 2008 Meeting Summary
(revised May 20, 2008)**

**Best Western Lighthouse Hotel
105 Rockaway Beach Avenue
Pacifica, CA 94044
9:30 a.m.**

Note: Audio and video recordings of this meeting are available on the Internet at <http://www.dfg.ca.gov/mlpa/>. Please contact AGP Video Services at (805) 772-2715 to obtain DVD copies of these recordings.

SAT members attending: Sarah Allen, Eric Bjorkstedt, Mark Carr, Chris Costello, Steve Gaines, Dominic Gregorio, John Largier, Gerry McChesney, Karina Nielsen, Pete Raimondi, Astrid Scholz, John Ugoretz.

SAT members absent: Ray Hilborn, Steven Morgan and Carl Walters. It was announced that Caroline Hermans has resigned from the SAT to pursue a new job opportunity.

Executive Summary

The ninth Master Plan Science Advisory Team (SAT) meeting took place at the Best Western Lighthouse Hotel in Pacifica on April 3, 2008.

- The SAT added barred surfperch to the list of species most likely to benefit from marine protected areas (MPAs).
- The SAT reviewed draft changes to the evaluation methods document concerning levels of protection and guidelines for evaluating MPAs with respect to the 50 meter isobath and the allowance of salmon trolling. The SAT approved the changes to the evaluation methods document with the caveat that it is a working document and will be revised in the future.
- SAT members presented evaluations for habitat representation, size and spacing, birds and mammals, and potential socioeconomic impacts of MPA proposals and voted to present the evaluations to the MLPA Blue Ribbon Task Force (BRTF).
- Modeling work group members presented model evaluations of draft MPA proposals and a draft document discussing the use of models in the MLPA process. The document and model evaluations were approved by the SAT for presentation to the BRTF, pending minor changes.
- A work group was formed to anticipate science questions related to the MLPA South Coast Study Region (SCSR) and to identify unique features of the SCSR.

I. Meeting Objectives and Materials

On April 3, 2008 the ninth SAT meeting for the north central coast study region was held. It was announced that Caroline Hermans had resigned from the SAT to pursue a new job opportunity.

The primary objectives of the meeting were to:

- Review and potentially approve revised evaluation methods for MPA proposals
- Review and discuss evaluations of MLPA North Central Coast Regional Stakeholder Group (NCCRSG) MPA proposals
- Review and discuss results of modeling NCCRSG MPA proposals
- Discuss and potentially make recommendations regarding the use of models for evaluation purposes
- Review, discuss, and potentially approve responses to science questions
- Identify potential science questions related to the MLPA SCSR
- Discuss and potentially add to the list of species likely to benefit from MPAs

The meeting agenda may be found on the MLPA website at <http://www.dfg.ca.gov/mlpa/meetings.asp>

II. Meeting Summary

Species likely to benefit from MPAs

Members of the SAT reviewed information regarding the potential inclusion of barred surfperch, flat and northern abalone, and white sharks on the MLPA North Central Coast Study Region (NCCSR) species likely to benefit list. Members voted unanimously (with one abstention) to add barred surfperch to the species most likely to benefit list, since other surfperch species on that list had similar life histories and levels of take. No motion was made to add flat abalone, northern abalone, or white sharks to the species likely to benefit list.

Evaluation methods for the north central coast draft MPA proposals

A. Salmon Trolling

Salmon trolling in areas shallower than 50 meters (m) receives a moderate-high level of protection, while salmon trolling in areas deeper than 50m receives a high level of protection. SAT co-chair Mark Carr presented information concerning the evaluation of proposals that included boundaries along the 50m isobath. MPAs were evaluated as clusters, and MPAs that allowed salmon trolling in water deeper than 50m received a high level of protection if they included no more than 15% of the habitat shallower than 50m present in the entire cluster. This method was based on an estimate of error in effort of drawing a straight line along a curved isobath; the best-fit straight lines generally captured about 15% of the inshore area along the isobath.

B. Mariculture

SAT co-chair Mark Carr presented revisions to the document concerning potential impacts of mariculture activities that had been presented to the SAT at its January 23 meeting. Revisions were made by SAT co-chair Steven Morgan and SAT assistant Seth Miller in response to industry concerns that the document could be used in an adverse way by permitting agencies. Language was modified to remain more neutral rather than negative, and a disclaimer was added to the document describing what its purpose was and that it was not intended to be used outside of the immediate arena of the SAT. SAT members discussed how the extent of mariculture activities could impact the LOP, and how new mariculture techniques would be evaluated in the future.

C. Level of Protection Assignments

SAT members were presented with revised language in the table detailing level of protection assignments. Members discussed how the allowance of multiple types of fishing might create cumulative impacts and influence LOPs, but no changes were made.

D. Evaluation Methods Document

SAT members were presented with revised language in the evaluation methods document. Astrid Scholz noted that additional information on socioeconomic impacts would be included in the document. Based on the future revision of the methods document, the mariculture document, and the LOP table, SAT members voted to accept these documents as working drafts and recognized that future changes will be made and evaluated.

Evaluations of NCCRSR MPA proposals

Mary Gleason introduced the evaluations of NCCRSR MPA proposals. SAT co-chair Mark Carr presented the evaluations of habitat representation and replication, Steve Gaines presented the evaluations of size and spacing, and Gerry McChesney and Sarah Allen presented the evaluations for birds and mammals. Astrid Scholz presented the socioeconomic evaluations. After discussion among SAT members and hearing public comments on all aspects of the MLPA process, members unanimously voted to accept the evaluations of draft MPA proposals and present them at the next BRTF meeting.

Digestible modeling work group evaluations

SAT member Chris Costello presented the evaluations performed using the UC Davis and EDOM models. After discussing some changes to the modeling presentation, SAT members voted unanimously to have Chris Costello present the modeling evaluations to the BRTF. SAT members also discussed the use of models in this region and their potential use in the SCSR. The recommendation document prepared by the digestible modeling work group was evaluated and members commented on the utility of models as planning tools and evaluation tools. Members noted that these models could be especially useful for the planning process in the SCSR, since they have been so extensively developed and debated in the NCCSR. It was noted that other models (such as ROHMS) that have been developed by other agencies in southern California could be useful during the planning process. Members voted unanimously

to present a revised version of the recommendation document to the BRTF to indicate how models could be used in future study regions.

Science questions

SAT members voted unanimously to approve the draft response to a science question from the February NCCRSG meeting. Members then discussed a list of potential science questions for the SCSR and added new potential questions to the list. A work group was formed to review the list of questions and to identify new issues that are unique to the south coast. Work group members are Chris Costello, Sarah Allen, Dominic Gregorio, John Largier, and Steve Gaines. Additionally, Dominic Gregorio and John Largier formed a work group to discuss water quality and provide recommendations to the SAT on how to address this issue in future study regions at the next SAT meeting.

Summary of public comments

Members of the public commented on a variety of issues concerning the MLPA process. Several comments from oyster growers reiterating the need for language clarifying how documents created during the MLPA process are to be used. Members of the public also asked clarifying questions about the evaluation presentations and voiced support for the continued use and development of the models during future study regions. Clarifications were made by NCCRSG members regarding the use of special closures in their MPA proposals.

III. Next Steps

SAT members will present their evaluations at the next BRTF meeting. The next SAT meeting will be held May 30, 2008.

IV. Documents provided at April 3, 2008 meeting

- A. PowerPoint presentation: *Potential Additions to the List of Species Likely to Benefit from MPAs* (Jason Vasques, California Department of Fish and Game)
- B. PowerPoint presentation: *Evaluation of NCCRSG ("Round 3") Marine Protected Area Proposals* (Mary Gleason, MLPA Initiative)
- C. PowerPoint presentation: *Draft Habitat Evaluations of NCCRSG MPA Proposals* (Dr. Mark Carr, Master Plan Science Advisory Team)
- D. PowerPoint presentation: *Size and spacing evaluation - north central coast MPA proposals* (Dr. Steve Gaines, Master Plan Science Advisory Team)
- E. PowerPoint presentation: Bird and mammal evaluation (Gerry McChesney and Dr. Sarah Allen)
- F. *Evaluations of Benefits to Seabirds and Waterfowl from Proposed Marine Protected Areas and Special Closures in the North Central Coast Study Region, California (April 2, 2008)*

- G. *Evaluations of Benefits to Marine Mammals from Proposed Marine Protected Areas and Special Closures in the North Central Coast Study Region, California (April 2, 2008)*
- H. *PowerPoint presentation: Summary of Potential Impacts of March 2008 NCCRSO MPA proposals on Commercial and Recreational Fisheries (Dr. Astrid Scholz, Ecotrust)*
- I. *Spatially Explicit Models to Support Evaluation and Revision of Draft Marine Protected Area Proposals (April 2, 2008)*

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team (SAT)
Draft Meeting Agenda
(revised May 29, 2008)**

**Friday May 30, 2008
9:30 a.m.**

**Best Western Lighthouse Hotel *
105 Rockaway Beach Avenue
Pacifica, CA 94044**

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Meeting Objectives

- *Review, discuss and potentially approve revisions to evaluation methods for marine protected area (MPA) proposals for the MLPA North Central Coast Study Region*
- *Review and discuss evaluations of the Integrated Preferred Alternative for the north central coast as recommended by the MLPA Blue Ribbon Task Force*
- *Receive report from modeling work group and discuss ideas for future study regions*
- *Discuss recommendations for considering water quality for MPA planning purposes*
- *Review and discuss south coast science questions and potentially create related work groups*

Meeting Agenda

1.	Welcome, introductions and review of agenda
2.	Updates
3.	Evaluation methods for north central coast MPA proposals [Attachment 1] A. Review, discuss, and potentially approve revisions to the evaluation methods for north central coast study MPA proposals. <ul style="list-style-type: none">• Mariculture• Socioeconomics• Cumulative effects of allowing take of multiple species within one level of protection• Water quality

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4.	Evaluation of the Integrated Preferred Alternative [Attachments 2-5; Handouts A-G] <ul style="list-style-type: none"> A. Review and discuss evaluation of IPA for the north central coast <ul style="list-style-type: none"> • Overview of MPA proposals • Habitat representation and replication • Size and spacing • Birds and marine mammals • Socioeconomic impacts
5.	Model results for the Integrated Preferred Alternative [Handouts H-I] <ul style="list-style-type: none"> A. Presentation and discussion of model results for Integrated Preferred Alternative B. Receive report from the modeling work group and discuss any recommended changes and uses of models in future study regions
6.	Water quality work group report [Handouts J-L] <ul style="list-style-type: none"> A. Review and discuss recommendations for considering water quality for MPA planning purposes B. Discuss potential water quality evaluation approaches for MPA proposals in the south coast
7.	South coast science questions work group report [Handout M] <ul style="list-style-type: none"> A. Review and discuss initial list of science questions for the MLPA South Coast Study Region B. Potentially identify work groups for specific south coast science questions
8.	Adjourn

Attachments

1. *Methods Used to Evaluate Draft MPA Proposals in the North Central Coast Study Region* (May 23, 2008 revised draft)
2. *Summary of SAT Habitat Representation, Habitat Replication, and Size and Spacing Analyses of the North Central Coast Study Region MPA Proposals* (May 22, 2008)
3. *Evaluations of Benefits to Seabirds and Waterfowl from Proposed Marine Protected Areas and Special Closures in the MLPA North Central Study Region, California* (May 16, 2008)
4. *Evaluations of Benefits to Marine Mammals from Proposed Marine Protected Areas in the MLPA North Central Study Region, California* (May 18, 2008)
5. *Summary of potential impacts of the Integrated Preferred Alternative and the North Central Coast Regional Stakeholder Group (NCCRSG) MPA proposals on commercial and recreational fisheries in the North Central Coast Study Region* (May 13, 2008)

Handouts

- A. PowerPoint presentation: *Overview of April 2008 North Central Coast MPA Proposals* (Dr. Mary Gleason, MLPA Initiative)
- B. PowerPoint presentation: *SAT Habitat Evaluations of MPA Proposals for the North Central Coast Study Region* (Dr. Mark Carr, Master Plan Science Advisory Team)
- C. PowerPoint presentation regarding the SAT size and spacing evaluation (*Dr. Steve Gaines, Master Plan Science Advisory Team*)

- D. PowerPoint presentation: Marine Birds and Mammals Evaluation for the April 2008 North Central Coast Marine Protected Area Proposals (*Dr. Sarah Allen, Master Plan Science Advisory Team*)
- E. *Errata Sheet for Evaluations of Benefits to Seabirds and Waterfowl from Proposed Marine Protected Areas and Special Closures in the MLPA North Central Coast Study Region, California* (May 29, 2008)
- F. *Errata Sheet for Evaluations of Benefits to Marine Mammals from Proposed Marine Protected Areas in the MLPA North Central Coast Study Region, California* (May 29, 2008)
- G. PowerPoint presentation: *Summary of Potential Impacts of April 2008 MPA proposals on Commercial and Recreational Fisheries DRAFT* (Dr. Astrid Scholz, Ecotrust)
- H. PowerPoint presentation: *Model Evaluations of April 2008 North Central Coast MPA Proposals* (Dr. Chris Costello, MLPA Master Plan Science Advisory Team)
- I. *Spatially Explicit Models to Support Evaluation and Revision of Marine Protected Area Proposals* (revised May 27, 2008)
- J. *Recommendations for Considering Water Quality and Marine Protected Areas in Future MLPA Study Regions* (report of the SAT Water Quality Work Group, revised May 28, 2008)
- K. PowerPoint presentation: *Water Quality along the North Central Coast* (Dominic Gregorio, State Water Resources Control Board and MLPA Master Plan Science Advisory Team)
- L. *Areas of Special Biological Significance (ASBSs) within the Marine Life Protection Act North Central Coast Study Region, reasons for designation and unique features*, January 28, 2008 (State Water Resources Control Board)
- M. *Initial science questions to consider for the MLPA South Coast Study Region* (report of the SAT South Coast Science Questions Work Group, revised May 29, 2008)
- N. Meeting summary for the April 3, 2008 SAT meeting