

**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.