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December 20, 2009

Jason Vasques, Associate Marine Biologist
MLPA Science Advisory Team Staff Support
350 Harbor Blvd.
Belmont, CA 94002

Re: North Coast Science Advisory Team Deliberations on Size and Spacing of Marine Protected Areas and Habitat Replication Requirements

Dear Mr. Vasques,

I am writing to you as an individual for expediency, but I assure you that the questions I am posing are on behalf of the governments and concerned community members of the North Coast. I request that this letter be circulated to all individuals on Marine Life Protection Act (MLPA) appointed North Coast Science Advisory Team (SAT) and that issues herein be specifically discussed at their next public meeting. The concerns I will address below are regarding larval drift theories and spacing requirements, size of MPAs and the need for following replication guidelines similar to those previously adopted in other regions.

Spacing Guidelines and Larval Drift

The lengthy theoretical discussion of larval drift at your Eureka December 17 SAT meeting had absolutely no foundation. As pointed out by one of the SAT members, the currents of the North Coast are strong and unique and the linear distance model has no basis here. Figure 1 is CenCOOS oceanographic data from between Shelter Cove and Point Arena showing a large circular current or gyre. Gyres are fairly stable features that oscillate and can shift somewhat seasonally. Longshore currents along much of the length of the North Coast reverse from southerly to northerly with seasons. Ekman spirals also develop seasonally that can cause larvae to be moved perpendicular to the coast (Hilborn et al. 2006).

I question other more fundamental assumptions regarding the larval drift model: 1) that larvae must land in an MPA to recruit or 2) that there must be an MPA for larvae to be generated; both assumptions are unmet. For the sake of discussion, let us consider a larvae drifting north linearly from an MPA sited south of the Mattole River. If it were to settle near Cape Mendocino and successfully recruit to the juvenile fish stage, under current fishing pressure it would not likely be harvested until after it spawned, possibly several times. Also, millions of larvae are currently generated along our wild coast without benefit of MPAs, which undermines the corollary assumption. We believe that the statement of Hilborn et al. (2006) that “there is now no evidence that current fishing practices upset the ‘natural’ biological diversity of the marine ecosystem” applies to the North Coast region.

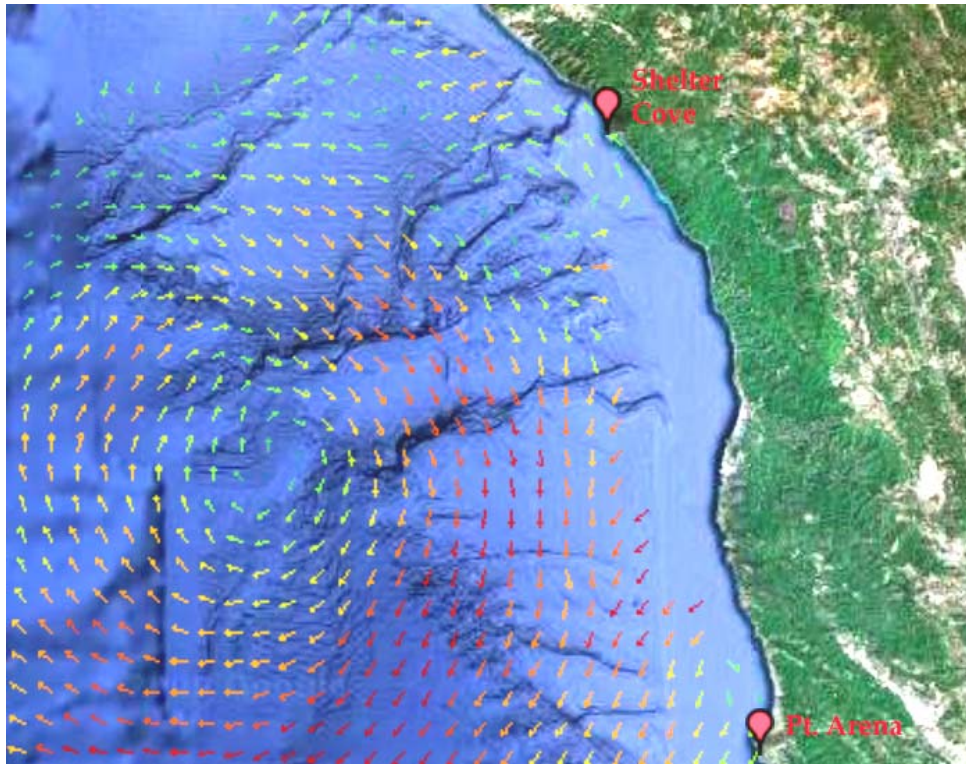


Figure 1. Surface current data (shown as arrows) from the Central Coast Ocean Observatory System (CenCOOS) between Pt. Arena and Shelter Cover show a large gyre or circular pattern in currents that tends to concentrate productivity.

MPA Size Guidelines Used Previously Not Appropriate for North Coast

I strongly favor the arguments of Dr. Ray Hilborn, Professor of Fisheries at the University of Washington, and Hilborn et al. (2006) provide the following insight regarding the size and spacing of MPAs under the California MLPAI:

“The MLPA statute provided no explicit guidance to address the ‘SLOSS’ (single large or several small) MPA debate, but suggested that decisions on size and placement be made by a master plan team and regulatory agencies, with the involvement of stakeholders. The science guidance provided by the MLPA Initiative Science Advisory Team (SAT) clearly favored the SS (several small) approach in its interpretation of the law. The SAT advice produced a very extensive network of MPAs in each of the MPA network proposals, with a heavy emphasis on nearshore rocky habitat protected in marine reserves.”

We in the North Coast region prefer fewer large MPAs and believe they are more likely to achieve the conservation objectives of the MLPA. Small preserves would not succeed in protecting fish populations because of migration of adults out of the MPA and fishing edge effects. Effort shift further complicates impact analysis and needs consideration. There may be a few North Coast areas of special biological significance that should be protected at a smaller scale, but a few well placed large preserves away from ports along remote sections of our coast will serve all aspects of the MLPA mission better than numerous small preserves; and it protects our economy and way of life.

Hilborn et al. (2006) noted that previous SATs had “failed to consider the ecosystem benefits of existing fishery management and failed to integrate existing fishery regulations and restrictions into its MPA size and spacing guidelines and analysis of MPA proposals.” North Coast MPAs need to be considered in conjunction with the Rockfish Conservation Area (RCA). That is, if large preserves run out to the 3 mile limit of State waters, conservation benefits of closure to rockfish take from the 120 foot contour depth line to the 200 mile limit of the U.S. waters protect needs to be considered. Therefore, all conservation needs for water depths greater than 120 feet are already covered by the existing RCA and there is no other activity that jeopardizes the natural balance in waters of those depths. We hope the North Coast SAT will be open to this argument because the RCA closure is based on species that have rebuilding programs that span several decades into the future. Future adaptive management studies could help decide whether more protection is needed after RCAs are discontinued.

Replication of Habitat Requirements

If North Coast residents come up with a workable strategy for fewer large conservation areas, then the area of habitat types protected should be the criteria for judgment of sufficiency, not that habitats have to be in numerous small preserves. The SAT seemed perplexed on December 17 about the possibility of allowing most significant protection to occur in fewer, larger MPAs. I do not think that the theoretical basis of the need for replication can be validated and hope the SAT will also reconsider this convention and its requirement for application on the North Coast.

The SAT process as manifest in your recent Eureka meeting gave me concern because of the pressure to adopt previously formulated guidelines rapidly, but I was relieved that size and spacing decision were delayed. The MLPA has been a major source of controversy and angst in our community, but it has caused us to focus on nearshore ocean conservation needs. We think we will meet these needs through the reserve design we will offer as an External MPA Array proposal. We will provide a scientific framework and a workable plan founded on local knowledge and data and hope the SAT will not constrain itself arbitrarily in judging it.

In the event that we feel there are fatal scientific flaws in the adopted North Coast SAT guidelines, and their imposition may create unknown biological consequences and potentially substantial economic harm, you can expect the North Coast region to challenge the outcome by every means possible.

Sincerely,

A handwritten signature in black ink, appearing to read 'Patrick Higgins', with a stylized, sweeping flourish extending from the end of the name.

Patrick Higgins

Hilborn, R., R. Parrish, and C. Walters. 2006. Peer review of California Marine Life Protection Act (MLPA) Science Advice and MPA Network Proposals. May 25, 2006. Prepared for the California Fisheries Coalition, 1621 B Thirteenth Street, Sacramento, CA 95814. 65 p.