

California MLPA Master Plan Science Advisory Team
Draft Work Group Responses to Science Questions Posed by
Santi Roberts/Oceana in a Letter Dated September 10, 2007
Revised September 28, 2007

The following are draft responses of the MLPA Master Plan Science Advisory Team (SAT) to questions posed by Santi Roberts, representing Oceana and a member of the MLPA North Central Coast Regional Stakeholder Group (NCCRS), in a letter dated September 10, 2007. These draft responses have been prepared by work groups of the SAT.

- 1. How large do MPAs need to be to accomplish the objective of enhancing local populations of forage species (including squid, sardines, anchovies, and herring)?**

Draft response: A draft response to this question is still being formulated.

- 2. Which seafloor habitat types in the study area are most sensitive to physical disturbance and which fishing gear types have the potential to damage the seafloor?**

Draft response: A draft response to this question is still being formulated.

- 3. How can MPAs most effectively protect corridors and hotspots for migratory species (including white sharks)?**

Draft response: Thoughtful placement of MPAs is crucial for protecting migratory species. MPAs placed at migration bottlenecks and in areas that are critical to certain life stages of migratory species will enable better protection for the target species. A good example of a migration bottleneck is when salmon return to their natal rivers to spawn. Placing a protected area in the coastal waters offshore of the river mouth will protect salmon during a crucial life stage. Other species also form spawning aggregations in certain areas, which can frequently, but not always, be identified as areas with the highest catch per unit effort (if the species is fished). Closure of these areas would protect the species during a sensitive life stage, but could have significant fishery impacts.

Since little is known about the breeding locations of white sharks, protecting forage species in areas where white sharks aggregate (e.g. the Farallones, Tomales Point) would likely benefit them.

References:

Roberts, C.M. 2000. Selecting marine reserve locations: optimality versus opportunism. Bull. Mar. Sci. 66: 581-592.

Taylor Chapple, personal communication.

- 4. For the purpose of enhancing populations of groundfish and other benthic species, is it more effective to design MPAs that encompass entire reefs or fractions of reefs?**

Draft response: A draft response to this question is still being formulated.

5. How can MPAs benefit species by protecting them during critical/sensitive life stages, behaviors, or biological processes (e.g. spawning, feeding, resting)?

Draft response: MPAs can benefit species by reducing fishing mortality during sensitive life stages or behaviors. This is only feasible when the behaviors or life stages occur in specific habitats or locations. For example, bat rays congregate in estuaries to breed in the fall. By eliminating fishing mortality in the estuary, you would protect the rays during this vulnerable period and potentially benefit the population as a whole.

6. The central coast SAT [reference is to the 2005-2007 SAT] recognized the need to protect the different assemblages associated with granitic versus sedimentary substrate. Are there similar differences in assemblages associated with different hard-bottom substrates in the NCC region, and can the SAT help identify or predict them?

Draft response: Please refer to the response to Question 9 from the list of questions from the NCCRSG August 22-23, 2007 meeting.