

California Marine Life Protection Act Initiative

1416 Ninth Street, Suite 1311 Sacramento, CA 95814 916.654.1885

To: Ken Wiseman, Executive Director, California MLPA Initiative
From: Eric Bjorkstedt, Mark Carr and Ron LeValley, Co-chairs, MLPA Master Plan Science Advisory Team
Subject: Responses to concerns expressed in an August 24, 2010 letter from the Office of the Tribal Attorney for the Yurok Tribe
Date: September 27, 2010

Last month you requested that the Marine Life Protection Act (MLPA) Master Plan Science Advisory Team (SAT) work with staff to prepare a response to questions posed in a letter from the Office of the Tribal Attorney for the Yurok Tribe. Because this request arrived during a time when the SAT did not have a public meeting scheduled, the SAT co-chairs have developed this response.

The letter from the Office of the Tribal Attorney raises concerns about levels of protection (LOP) designation and assumptions made by the SAT when assigning LOPs. The letter asserts that many species, such as mussels or barnacles, are plentiful in the north coast and that due to lower human population in the north coast than other regions the threat and impacts from harvest are less than in other regions. The letter also suggests that seasonal quarantine on sport harvested mussels adds to the protection of mussel populations and should be considered when designating an LOP for mussel harvest. Further the letter implies that the conditions in the north coast protect intertidal species such that larval dispersal rates mimic those found in marine sanctuaries in other areas. These concerns focus primarily on the potential influence that limited access and natural conditions have on harvest and LOP designation. These concerns reflect similar comments raised by other stakeholder groups (e.g., recreational and commercial fishers) in this and other study regions, arguing that the large population sizes of many fished species negate the necessity of increased protection of populations within marine protected areas.

Paramount to understanding the LOP conceptual model (decision tree) is acknowledging that an activity's LOP designation is based on the role the target species plays in the ecosystem within a marine protected area (MPA) and the potential impairment of that role upon extraction of the species from the MPA, rather than the regional state of a population. The LOP decision tree is not intended to be predictive of the abundance of any species. Rather, LOP designation considers how the removal of a species might impact the overall structure and functioning of the ecosystem within an MPA. Activities that alter habitat, remove sessile or sedentary species, or have high levels of associated catch affect community structure to a greater degree than activities that target highly mobile species and have little associated catch. Thus, activities that alter habitat or have high levels of associated catch are assigned a lower LOP.

LOPs are explicitly designed to be applicable across a range of geographies and future fishing scenarios because of the uncertainty and unpredictability of these scenarios far into the future (i.e. over the lifetime of an MPA). Regardless of the state of a species

population outside of an MPA, the extraction of a species will alter an ecosystem within an MPA relative to that which would develop in a fully protected area; LOPs are intended to capture the potential magnitude of the change from this fully protected ecosystem state associated with removal of a species.

Again, when assigning a level of protection, the SAT considers the role that the target species plays in the marine ecosystem and the extent to which its removal has the potential to alter the marine community. This potential change to the marine ecosystem may not be realized in all areas of the MPA; however, the SAT assigns levels of protection conservatively, so that fishing activities that receive a high or moderate-high LOP are unlikely to impact ecosystems within the MPA even if fishing effort is locally intense or increases to high levels in the future. In assigning LOPs the SAT assumes that take of a species could increase to the maximum extent allowable by law and therefore does not base LOP designation on existing levels of take or current species abundances. Additionally, since most fishing regulations are not spatially explicit, even a low level of fishing pressure may result in locally intense fishing, as effort is concentrated in accessible areas. For this reason, limited coastal access in the north coast increases the likelihood that accessible areas, including MPAs, will experience high fishing pressure.

The seasonal quarantine on recreationally harvested mussels does not affect the LOP for removing mussels. Mussels are a “foundation” species and provide a fundamental source of habitat structure for a myriad of species that live both on and within the bed. While a seasonal quarantine on mussel harvest protects mussels for a portion of the year, the harvest of mussels or any other biogenic habitat at any time of the year impacts an otherwise more persistent (multi-year) habitat structure for other species, thus altering community structure and function.

Larval dispersal (including rate) is influenced by larval duration and local and oceanic conditions. Larval abundance is also affected by local and oceanic conditions as well as the density and abundance of spawning stock and predator interactions. Both larval dispersal and abundance are just two of many factors affecting recruitment patterns that are important to population dynamics for any individual species. Successful recruitment strongly depends on suitable habitat, reinforcing the importance of many intertidal species as biogenic habitat. The removal of habitat forming species receives a low LOP because their removal can affect community structure. Building on the rationale above that limited access to much of the north coast increases the likelihood that easily accessed areas may experience locally intense harvest, removal of habitat forming species may limit successful recruitment in spite of an ample supply of larvae. Similarly, regardless of the rate of larval delivery to an MPA, the removal of habitat structure, including biogenic habitat, affects community structure and function.

Cc: Office of the Tribal Attorney, Yurok Tribe
MLPA Blue Ribbon Task Force
MLPA Master Plan Science Advisory Team
MLPA North Coast Regional Stakeholder Group