

California Marine Life Protection Act Initiative

1416 Ninth Street, Suite 1311 Sacramento, CA 95814 916.654.1885

To: MLPA South Coast Regional Stakeholder Group
From: MLPA Initiative Staff
Subject: Use of Levels of Protection in the MLPA Initiative Process
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The Marine Life Protection Act (MLPA) Master Plan Science Advisory Team (SAT) has developed levels of protection (LOP) as a tool utilized in some SAT evaluations of marine protected area (MPA) proposals. MLPA Initiative staff has developed the following memorandum to increase MLPA South Coast Regional Stakeholder Group (SCRSG) understanding of LOPs, so that Round 2 draft MPA proposals may be more effectively designed. Note that further information regarding LOPs, some of which is referenced in this memorandum, can be found in chapter 3 of the document, *Draft Methods Used to Evaluate MPA Proposals in the MLPA South Coast Study Region*.

Use of Levels of Protection by the Science Advisory Team

LOPs were developed by the SAT during the MLPA Central Coast Project as a means of distinguishing between the ecosystem impacts of allowed uses proposed by stakeholders in different kinds of MPAs. In general, proposed MPAs with regulations that are likely to have a small impact on the marine ecosystem were assigned a higher LOP and proposed MPAs with regulations that are likely to have a larger impact on the marine ecosystem were assigned a lower LOP.

The SAT has continued to use LOPs as a tool throughout the MLPA North Central Coast Project and now the MLPA South Coast Project. Proposed allowed uses are reviewed by the SAT and assigned one of six LOPs, ranging from "very high" to "low" (see Figure 1). These LOPs are then used to group MPAs in several different analyses, including SAT evaluations of habitat representation, habitat replication, MPA size, and MPA spacing. Note that several SAT evaluations, including bioeconomic modeling, evaluations of benefits to marine birds and mammals, and evaluation of potential impacts to commercial and recreational fisheries do not utilize LOPs, but instead focus directly on proposed regulations.

In SAT evaluations of habitat representation, the percentage of each habitat captured within MPAs is grouped by level of protection. That is, for a given habitat, the contributions of all proposed MPAs that include that habitat are evaluated and reported at the six respective LOPs. In the evaluations of habitat replication, MPA size, and MPA spacing, separate evaluations are conducted at threshold levels of protection. For example, when conducting an evaluation at the "moderate-high" threshold, the SAT includes any proposed MPA that has been assigned an LOP of at least moderate-high (i.e., moderate-high, high, or very high LOPs). Further details of how LOPs are used in the evaluations listed above can be found in the document, *Draft Methods Used to Evaluate MPA Proposals in the MLPA South Coast Study Region*.

Figure 1: Activities Assigned a Level of Protection (updated April 22, 2009)

Level of Protection	MPA Types	Activities associated with this protection level
Very high	SMR	No take
High	SMCA	Coastal pelagic finfish and bonito (pelagic seine, dip net); pelagic finfish, bonito and white seabass (spearfishing); market squid (pelagic seine, dip net); jumbo squid (H&L-squid jigs); swordfish (harpoon); In water depth > 50m: pelagic finfish, bonito and white seabass (H&L);
Mod-high	SMCA	Pier fishing (H&L, hoop-net); halibut (spearfishing); catch and release (H&L-surface gear, single barbless hooks, and artificial lures) In water depth <10m: Catch and release (H&L-single barbless hooks and artificial lures) In water depth 30<50m on mainland: pelagic finfish, bonito and white seabass (H&L, surface gear only);
Moderate	SMCA SMP	spot prawn (trap); sea cucumber (diving); grunion (hand harvest); giant kelp (hand harvest); clams (hand harvest);
Mod-low	SMCA SMP	Shore fishing (H&L, hoop net); kelp bass, barred sand bass, lingcod, cabezon, and rockfish (H&L, spearfishing); sheephead (H&L, spearfishing, trap); spotted sand bass and halibut (H&L); lobster (trap, hoop net, diving); urchin (diving); rock crab and Kellet's whelk (trap); catch and release (H&L-general) In water depth <10m: Catch and release (H&L-single barbless hooks and artificial lures) In water depth <50m at islands and <30m on mainland: pelagic finfish, bonito and white seabass (H&L);
Low	SMCA SMP	Rock scallop (diving); mussels (hand harvest); giant kelp (mechanical harvest); marine algae other than giant and bull kelp (hand harvest);

How Levels of Protection are Determined for an MPA

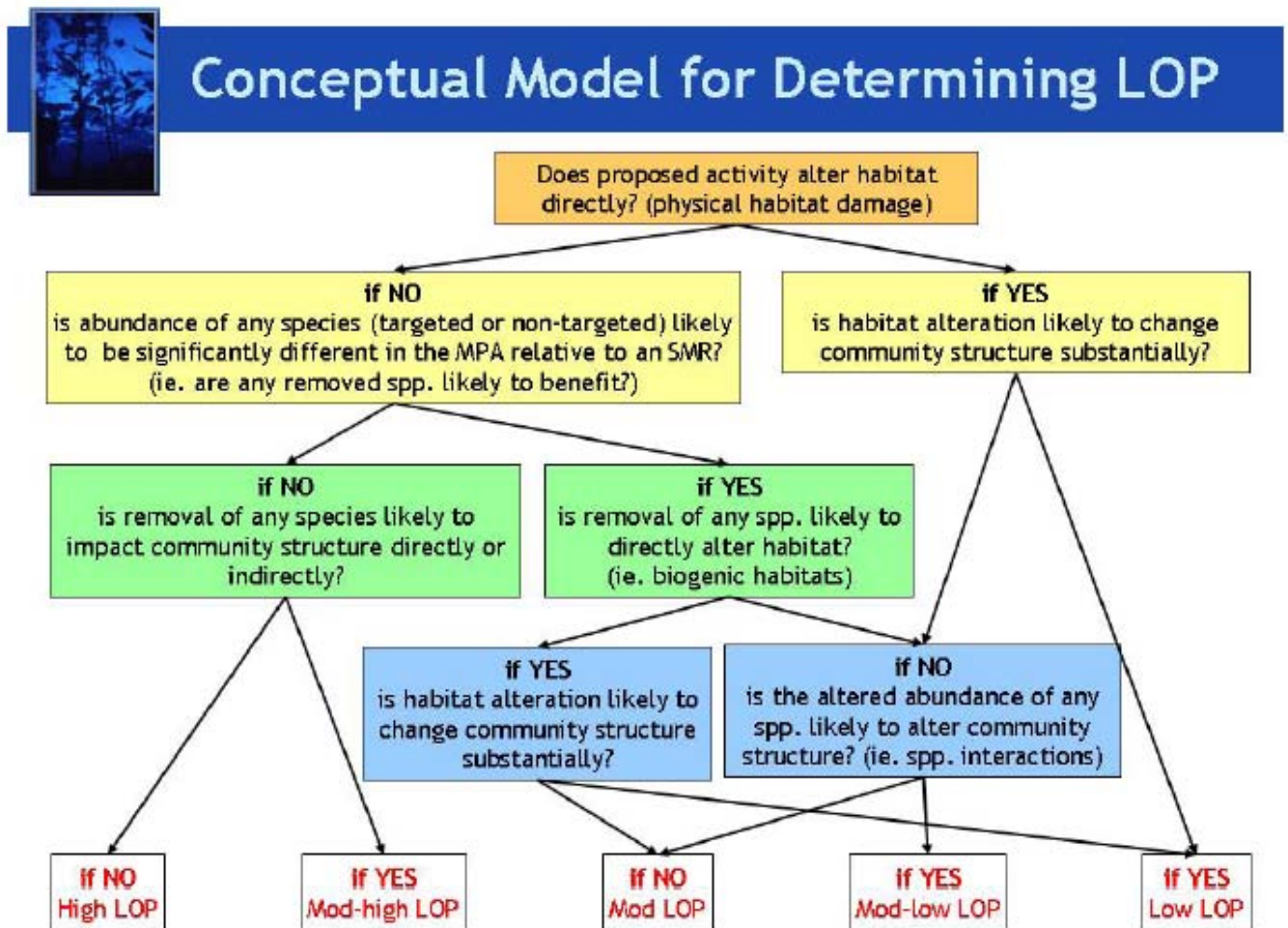
The SAT assigns an LOP to a particular MPA based on the allowed uses that are proposed within that MPA. In order to do this, the SAT must first consider each of the proposed allowed uses within that MPA individually and then determine an appropriate LOP. The SAT then identifies the proposed allowed use that has the lowest LOP and assigns that LOP to the entire MPA. For example, consider a hypothetical MPA that proposes the following allowed uses:

- Recreational take of pelagic finfish by spear (high LOP)
- Recreational take of grunion by hand (moderate LOP)
- Commercial take of lobster by trap (moderate-low LOP)

In assigning an LOP for this hypothetical MPA, the SAT would first review each of the three allowed uses above and determine an appropriate LOP for that activity (see below for more details). Once this has been done for each of the proposed allowed uses within an MPA, the SAT determines which activity has the lowest LOP (in this case, commercial take of lobster by trap) and assigns the MPA that LOP (in this case, moderate-low).

The SAT uses a rigorous methodology to determine the appropriate LOP for any given activity. In essence, the SAT gathers readily available information regarding potential direct and indirect impacts of an activity to marine ecosystems. Direct impacts might include impacts of a particular method of fishing to marine habitats (for example, removal of kelp habitat) while indirect impacts might include alterations in community structure as a result of removal of a species (for example, removal of a high level predator). Using this information, the SAT uses a set of predefined questions to determine the appropriate LOP (Figure 2).

Figure 2: Conceptual Model for Determining LOPs



It is important to note that the SAT has not determined LOPs for the full range of activities that may potentially be proposed as allowed uses within MPAs. Rather, the SAT reviews allowed uses and determines LOPs when they are included in MPA proposals generated by the SCRSG or external groups. Due to the rigorous process for determining LOPs described above, this may require several weeks. As a result, analytical tools that rely on LOPs -- including some reporting functions in MarineMap -- cannot provide immediate feedback for MPAs with proposed allowed uses that have not yet been reviewed by the SAT and assigned an LOP.

Guidelines for Stakeholders in Developing Allowed Uses

When crafting allowed uses for proposed MPAs, it is important for stakeholders to carefully consider the particular activities they intend to allow. Most importantly, it is critical that stakeholders are as specific as possible in drafting proposed allowed uses. Stakeholders should include information on allowed species and gear types, as well as whether commercial or recreational take is allowed. In the absence of specific allowed uses, the SAT will determine an LOP based on the most general possible scenario. For instance, if an MPA proposes that "recreational fishing is allowed," the SAT will assume that any form of recreational extraction is intended, including all species of fish, invertebrates, and algae by any potential extraction method. This may affect the LOP assigned to an MPA, as the SAT may assume that activities that have low levels of protection (for instance, recreational take of mussels by hand) are allowed within the MPA.

Stakeholders may wish to review the activities that have been assigned an LOP by the SAT (see Figure 1) to predict what LOP will likely be assigned to a proposed MPA. In MarineMap, a drop down menu under the proposed regulations tab includes those activities that have been reviewed by the SAT and allows stakeholders to run calculations based on that LOP. It is important to note that stakeholders are in no way limited to proposing allowed uses that have been reviewed by the SAT. In MarineMap, a text field is provided where stakeholders may include allowed uses that do not appear in the list reviewed by the SAT. If these allowed uses are included in a draft proposal submitted to the MLPA process, these activities will be reviewed and assigned an LOP. Note that MarineMap will not have the ability to generate some reports for MPAs that propose allowed uses not yet assigned an LOP by the SAT.

In some cases, the LOP assigned to a particular activity depends on the depth in which that activity occurs. For example, recreational take of pelagic finfish by hook and line is assigned a "moderate-low" level of protection when it occurs in water shallower than 30 meters, and a higher level of protection when it occurs in waters deeper than 30 meters. It is important to note that the SAT assigns an LOP to the entire area of an MPA for activities where the LOP is depth-dependent; the SAT does not assign different LOPs to different parts of the MPA located at different depths. Using the example above, if recreational take of pelagic finfish was proposed in an MPA that spans depths from 0 to 100 meters, the entire area within that MPA would receive an LOP of "moderate low" (not just the portion of the MPA shallower than 30 meters). When proposing allowed uses that vary based on depth, stakeholders should note feasibility criteria conveyed by the California Department of Fish and Game. Specifically, regulations within a single MPA should not vary with depth. As a result, if a proposed MPA's boundaries span an

area ranging from 0 to 100 meters, stakeholders should not propose that regulations apply to only the portion of that MPA that lies in waters deeper than 30 meters. Rather, MPA boundaries should be created so that consistent regulations apply throughout the MPA.