

California MLPA Master Plan Science Advisory Team
Draft Level of Protection Decision Matrix
March 31, 2009 Draft

	Question Level		1	2	3	4			
Allowed Use	Level of Protection Designation	Status of LOP	Does Proposed Activity Directly Alter Habitat?	Abundance of Any Species Likely to be Significantly Different in MPA Relative to an SMR?	Habitat Alteration Likely to Substantially Change Community Structure?	Removal of Any Species Likely to Directly or Indirectly Impact Community Structure?	Removal of Any Species Likely to Directly Alter Habitat?	Habitat Alteration Caused by Species Removal Likely to Substantially Change Community Structure?	Is Altered Abundance of Any Species Likely to Substantially Alter Community Structure?
Loxster (trap, hoop net, scuba)	mod-low	SAT approved	NO - gear contacts bottom but habitat damage unlikely	YES - target species has low movement & MPA effect has been shown			NO		YES - important urchin predator and thus may have indirect effects on kelp and associated community
Barred sand bass (hook and line or spear)	mod-low	SAT approved	NO	YES - target species has low movement & MPA effect has been shown			NO		YES - important predator
Kelp bass (hook and line or spear)	mod-low	SAT approved	NO	YES - target species has low movement & MPA effect has been shown			NO		YES - impt predator
Sheephead (hook and line, spear, trap)	mod-low	SAT approved	NO - traps contact bottom but habitat damage unlikely	YES - target species has low movement & MPA effect has been shown			NO		YES - impt urchin predator
Spotted sand bass (hook and line)	mod-low	SAT approved	NO	YES - target species has low movement, restricted to estuaries			NO		YES - impt predator in estuarine embayments
Spot prawn (trap)	moderate	SAT approved	NO - traps contact bottom but habitat damage unlikely	YES - genetics and parasites suggest low movement in BC, no studies from CA			NO		NO - predator and prey
Sea cucumber (scuba/hookah)	moderate	SAT approved	NO	YES - target species abundance and size shown to decrease where not protected			NO		NO - detritivore and prey
Grunion (hand take)	moderate	SAT approved	NO	YES - genetics suggest highly mobile, but likely breeding site fidelity			NO		NO - eggs are a source of food on breeding beaches
Pelagic finfish*, white seabass, and bonito (spear)	high	SAT approved	NO	NO - target species are highly mobile, selective harvest by spear should result in little or no incidental catch		NO - target species are highly mobile and low incidental catch			
Pelagic finfish*, white seabass, and bonito (hook and line) >50 meters depth	high	SAT approved	NO	NO - target species are highly mobile, incidental catch of resident species is likely to be low deeper than 50m where no kelp occurs		NO - target species are highly mobile and low incidental catch			

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Pelagic finfish*, white seabass, and bonito (hook and line) 50>30 meters depth using surface gear on mainland	mod-high	SAT approved	NO	NO - target species are highly mobile, incidental catch of resident species is likely to be moderate as you fish closer to kelp beds		YES - incidental catch of resident benthic species could change community structure			
Pelagic finfish*, white seabass, and bonito (hook and line) <30 meters depth	mod-low	SAT approved	NO	YES - target species are highly mobile, incidental catch of resident benthic species (kelp bass on rocky reef and barred sand bass on soft bottom) is very likely in shallow water			NO		YES - incidentally caught resident species play an important predatory role in the nearshore environment
Rock scallop (scuba)	low	SAT approved	YES		YES - rock scallop removal modifies rugosity of reef and local diversity of benthic species				
Urchin	mod-low	SAT approved	NO	YES - target species has low movement			NO		YES - impt grazer of kelp which can change the entire structure of ecosystem
BELOW THIS POINT WORK GROUP APPROVED, BUT NOT YET REVIEWED BY FULL SAT									
Coastal pelagic finfish* and bonito (seine, dip-net, crowder)	high	SAT work group approved	NO - bottom contact does occur with seine gear, but infrequently	NO - target species are highly mobile, incidental catch is comprised primarily of other highly mobile species		NO - target species are highly mobile and low incidental catch of resident species			
Squid (seine, dip-net, crowder)	high	SAT work group approved	NO - bottom contact does occur with seine gear, but infrequently	NO - target species are highly mobile, incidental catch is comprised primarily of other highly mobile species		NO - target species are highly mobile and low incidental catch of resident species			
Lingcod (hook and line, spear)	mod-low	SAT work group approved	NO	YES - target species has low movement, incidental catch includes other low mobility reef species			NO		YES - lingcod are important predators in nearshore rocky reef

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Rockfish (hook and line, spear)	mod-low	SAT work group approved	NO	YES - target species have low movement, incidental catch includes other low mobility reef species			NO		YES - rockfish are important predators in nearshore rocky reef
Cabezon (hook and line, spear)	mod-low	SAT work group approved	NO	YES - target species has low movement, incidental catch includes other low mobility reef species			NO		YES - cabezon are important predators
Halibut (hook and line)	mod-low	SAT work group approved	NO	YES - halibut move moderate to long distances, incidental catch includes resident species (e.g. barred sand bass)			NO		YES - resident species caught in association with halibut are important predators and their removal is likely to influence community structure
Halibut (spear)	mod-high	SAT work group approved	NO	NO - halibut move moderate to long distances so abundance is unlikely to change relative to an SMR, spear fishing is likely to have low incidental catch			NO		YES - halibut are important predators in benthic ecosystem, any change in abundance could have impacts on community structure
Rock crab (trap)	mod-low	SAT work group approved	NO - bottom contact occurs but damage unlikely	YES - yellow crabs and brown rock crabs likely have a limited home range, several tagging studies show that individuals stay in the same area for months to 1 year while others may participate in migrations on the order of 10km.			NO		YES - important predators and scavengers (predators of small urchins) and thus take likely to impact community structure
Mussels (hand harvest)	low	SAT work group approved	NO - doesn't damage the substrate, per se	YES - mussels are sessile			YES - mussels FORM habitat, so removing them removes the habitat	YES - mussel beds are associated with a unique community, removing them changes community structure	

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Jumbo squid (squid jigs/ drift)	high	SAT work group approved	NO	NO - jumbo squid are highly mobile, incidental catch is low due to use of squid jigs which do not readily capture other species		NO - jumbo squid are highly mobile and low incidental catch of resident species			
Swordfish (harpoon)	high	SAT work group approved	NO	NO - swordfish are highly mobile and harpoon fishing requires visual contact, thus low incidental catch		NO - highly mobile			
Kellet's whelk (trap)	mod-low	SAT work group approved	NO	YES - target species has low movement & MPA effect has been shown			NO		YES - important benthic predator, especially on grazers and thus may have indirect effects on kelp abundance and associated community
Giant kelp (hand harvest)	moderate	SAT work group approved	NO - doesn't damage the substrate, per se	YES - kelp doesn't move			YES - kelp canopy FORMS habitat (notably for the juveniles of commercially important fish), so removing it removes habitat	NO - under current technology and spatial harvest methods, hand harvest results in only patchy removal of surface kelp canopy which likely does not substantially alter community structure	
Giant kelp (mechanical harvest)	low	SAT work group approved	NO - doesn't damage the substrate, per se	YES - kelp doesn't move			YES - kelp canopy FORMS habitat (notably for the juveniles of commercially important fish), so removing it removes habitat	YES - kelp provides structure for a rich and unique community, removal by mechanical harvest extends deeper than hand harvest and removes broad swaths of canopy, changing community structure substantially	

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Clams (hand harvest)	moderate	SAT work group approved	NO - dynamic soft-bottom is not highly sensitive to this disturbance	YES - clams don't move around much, maybe some incidental take or death of other sessile marine invertebrates			NO		NO - clams are an important food source for many fish and elasmobranchs, but hand harvest only occurs in the intertidal zone (a small portion of the depth distribution of clams) thus the impact of harvest on community structure is likely to be limited

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Catch and release (hook and line barbless single hooks, and artificial lures only) in shallow <10 meters water or using surface gear	mod-high	SAT work group approved	NO	NO - likely low hooking mortality for most species using barbless single hooks with artificial lures (which result in fewer gut hookings), barotrauma unlikely in shallow waters (<10m), in estuarine environments unpublished data from LA shows a high tag return rate for spotted sandbass which indicates small populations and good survival rate		YES - sensitivity to handling varies by species, although we expect most species to have a high survival rate with proper handling, some species may be impacted by this catch and release fishing and thus impact community structure relative to an SMR			
Catch and release (hook and line) in open coast environments >10 meters depth	mod-low	SAT work group approved	NO	YES - likelihood of barotrauma and mortality increases with depth			NO		YES - many removed species are important predators
Shore-based finfish (hook and line)	mod-low	SAT work group approved	NO	YES - a wide range of species may be caught from shore--some have limited depth distribution or special breeding habits that make them vulnerable to fishing from shore--catch includes resident estuarine species (spotted sandbass, juvenile halibut), resident rocky reef species (opaleye, kelp bass, rockfish, sheephead), and surf-zone species (breeding surfperch).			NO		YES - many removed species are important predators in nearshore environments.

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Pier-based fishing (hook and line, hoop net)	mod-high	SAT work group approved	NO	NO - most H&L catch is highly mobile species, especially coastal pelagics but some catch of less mobile croaker (8%), surfperch (7%) , and basses (3%), small hoop net catch of lobsters.		YES - a few resident species are caught from piers and this could have an impact on community structure			
Marine algae other than giant and bull kelp (hand harvest)	low	SAT work group approved	NO - doesn't damage the substrate, per se	YES - marine algae doesn't move			YES - all marine algae FORM habitat, so removing it removes habitat	YES - marine algae provide structure for a rich and unique community, removal has the potential to change community structure substantially	