

California MLPA Master Plan Science Advisory Team
Draft List of Species Likely to Benefit from
Marine Protected Areas in the MLPA South Coast Study Region
(revised September 11, 2008)

The Marine Life Protection Act (MLPA) requires that species likely to benefit from marine protected areas (MPAs) be identified; identifying these species will contribute to the identification of habitat areas that will support achieving the goals of the MLPA. The draft *Marine Life Protection Act Master Plan for Marine Protected Areas* (January 2008) includes a broad list of species likely to benefit from protection within MPAs. The master plan also indicates that regional lists will be developed by the MLPA Master Plan Science Advisory Team for each study region of the California coast. Species in each of the regional lists are likely to be prioritized for monitoring in evaluating MPA effectiveness.

A set of criteria were used to create both the list of species likely to benefit from MPAs and the list of species *most likely to benefit* from MPAs in the MLPA North Central Coast Study Region.

Species are included in the list of species *likely to benefit* if they meet one or more of the following conditions:

- Occurs in the appropriate study region
- Taken directly or indirectly in commercial or recreational fisheries
- Has life history characteristics that make them more conducive to protection by MPAs, such as: sedentary behavior, a relatively small home range, long life spans, slow growth, or association with habitats that need additional spatial protection. An MPA would be expected to increase the species abundance or spawning biomass if the species is at an abnormally low abundance or abnormally low size frequency (i.e. below the range of natural fluctuations).

The SAT defined the species *most likely to benefit* as those likely to show a detectable change in local population as a result of MPA implementation. Species are included in the species most likely to benefit list if they meet one or more of the following conditions:

- Evidence exists for direct fishing effects on the species in question (e.g., the species is targeted by a fishery, known to be taken as bycatch in a local fishery, or fishing reduces important resources required of a species)
- Species suffers negative impacts associated with human activities other than fishing
- A significant proportion of the species distribution occurs within habitats represented in the study region.

These conditions were the basis upon which the attached draft list of species likely to benefit from MPAs in the MLPA South Coast Study Region was created. Through initial work group review it has been noted that important criteria to be considered includes the species having a relatively small home range and limited propagule dispersal distance such that individuals are more likely to be protected throughout their lifetime within an MPA and their populations are more likely to be self-replenishing within an MPA. This and other criteria require further SAT discussion and consideration (e.g. How limited should home range be?). The draft SCSR list of species likely and most likely to benefit will be revised and amended by the SAT.

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Consideration	Criteria	Clarifying Questions	Ranking
Human Impact	1 - Direct Take: Are taken directly or indirectly in commercial or recreational fisheries or are otherwise targeted for take or collection for other uses (including but not limited to aquariums, research, and tide pooling).	Is it taken DIRECTLY in a fishery (commercial, recreational, aquarium trade, biomedical research, tide pooling)?	1
		Is it taken INDIRECTLY in a fishery (commercial, recreational, aquarium trade, biomedical research, tide pooling)?	1
		Is a fishery causing or has caused a noticeable decline in the population?	2
Human Impact	2 - Bycatch: Are a bycatch species that cannot be returned to the water with a high rate of survival.	Is it returned to the water as bycatch in a fishery?	1
		Is not expected to have a high rate of survival after being returned to the water?	1
		Has its capture in a fishery caused a noticeable decline in the population?	2
Human Impact	3 - Habitat Degradation: Suffers negative impacts through ecological or habitat changes associated with human activities other than fishing.	Is its critical habitat disappearing or being degraded as a result of NON-FISHING human activity?	1
		Is that habitat disappearing or being degraded as a result of FISHING activities?	1
		Is it suffering negative population effects as a result of the loss or degradation of their critical habitat?	2
Biological/ Life History	4. Life History traits: A) Has low dispersal tendency, B) Adult home range, or C) long life spans and slow growth.	A) What is its potential for dispersal in the LARVAL state?	1-2
		B) What is its potential for migration as an ADULT and adult home range?	1-2
		C) How sensitive is it to exploitation? (i.e. long life span, slow growth, low fecundity?)	1-2
Biological/ Life History	5 - Limited distribution: A significant portion of its distribution occurs within habitats represented in the study region.	Does a SIGNIFICANT PORTION of its distribution occur within the study region?	1
		Does ALL of its U.S. distribution occur solely within habitats found in the study area?	2

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Consideration	Criteria	Clarifying Questions	Ranking
Biological/ Life History	6 - Habitat association: Would benefit (i.e. abundance or biomass is expected to increase) due to the protection of habitats, which they are known to use (such as foraging, breeding, nesting, or resting sites).	Would its population increase significantly if any of its critical habitats were included in an MPA? If yes, which habitats?	1
		Is the species special status or is its abundance below the range of natural fluctuations?	2
Biological/ Life History	7 - Ecological importance: Are the dominant species whose removal would cause major ecological change (food chain, diversity, etc), or are a key species that defines or characterizes a habitat type.	Is it the dominant species in its ecosystem? Would its removal cause major ecological change?	1
		Is it a key species that defines or characterizes a habitat type?	2

Criteria and information were compiled by the Santa Monica Bay Restoration Commission in conjunction with MLPA staff.

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Fish															
<i>Amphistichus argenteus</i>	Surfperch, barred	1			1						0	73		sand/ softbottom	bear live, free swimming young
<i>Amphistichus koelzi</i>	Surfperch, calico	2			1						0	9		sand/ softbottom	bear live, free swimming young
<i>Anisotremus davidsonii</i>	Sargo	1					1	1	1		0	30		rocky reefs, kelp, sand/ softbottom	broadcast spawner
<i>Atherinops affinis</i>	Topsmelt	1							1					kelp, sand/ softbottom	spawns in eel grass and algal beds, possibly kelp beds; eggs attach to spawning substrate by adhesive filaments
<i>Atherinopsis californiensis</i>	Jacksmelt	1							1		0	30		kelp, sand/ softbottom	eggs with filaments for attachment to eel grass and shallow algal beds
<i>Atractoscion nobilis</i>	Seabass, white	2					1	1	1	1	0	122	1	rocky reefs, kelp, sand/ softbottom	adult aggregate in spring-summer during spawning
<i>Caulolatilus princeps</i>	Whitefish, ocean	1						1	?		0	91	1	rocky reefs	responds favorably to El Nino conditions
<i>Cheilotrema saturnum</i>	Croaker, black	1				1	1	2	1		0	30		rocky reefs, sand/ softbottom	one of few croakers to prefer rocky reefs and kelp beds
<i>Chromis punctipinnis</i>	Blacksmith	1				1		2	1		0	46		rocky reefs, kelp, sand/ softbottom	demersal eggs in nests; defended by male
<i>Citharichthys sordidus</i>	Sanddab, Pacific	1	1								30	201		sand/ softbottom	may spawn twice a year
<i>Citharichthys stigmatæus</i>	Sanddab, speckled		1								0	30	1	sand/ softbottom	abundant in nearshore soft bottom
<i>Citharichthys xanhostigma</i>	Sanddab, longfin	1	1					2			0	101		sand/ softbottom	abundant on shelf
<i>Cymatogaster aggregata</i>	Surfperch, shiner	1		1	1				1		0	146		rocky reefs, kelp, sand/ softbottom	bear live, free swimming young
<i>Embiotoca jacksoni</i>	Surfperch, black	1			1	1			1	1	0	40		rocky reefs, kelp	bear live, free swimming young
<i>Eopsetta jordani</i>	Sole, petrale		1							1	30	201		sand/ softbottom	migrates, spawns at 900-1200 ft
<i>Eptatretus stoutii</i>	Hagfish, Pacific	1	1								30	503		sand/ softbottom	deposit egg cases
<i>Eptatretus mcconnaugheyi</i> *	Hagfish, shorthead							1							
<i>Genyonemus lineatus</i>	Croaker, white	1	1							1	0	101		sand/ softbottom	schooling; multiple spawning each year; adults in deeper water than juveniles
<i>Girella nigricans</i>	Opaleye	1				1		1	1		0	29	1	rocky reefs, kelp	may regulate kelp growth by grazing
<i>Glyptocephalus zachirus</i>	Sole, Rex		1								101	503		sand/ softbottom	spawns at 300-900 ft
<i>Heterodontus francisci</i>	Shark, horn	1			1	1		2	1	1	0	150		rocky reefs, kelp	lay egg cases
<i>Hyperprosopon argenteum</i>	Surfperch, walleye	2			1					1	0	18		sand/ softbottom	bear live, free swimming young
<i>Hypsurus caryi</i>	Surfperch, rainbow	1			1			1			0	40		rocky reefs, kelp	bear live, free swimming young
<i>Hypsypops rubicundus</i>	Garibaldi	1				1		2	1	1	0	29		rocky reefs, kelp	males guards nest
<i>Leptocottus armatus</i>	Sculpin, staghorn	1				1			1	1	0	91		sand/ softbottom	abundant in estuaries
<i>Leuresthes tenuis</i>	Grunion, California	1					1	1	1	1	0	18		sand/ softbottom	eggs deposited on sandy beaches
<i>Lyopsetta exilis</i>	Sole, slender		1								101	503		sand/ softbottom	relatively abundant offshore species
<i>Lythrypnus dalli</i>	Goby, bluebanded	1				1		1			0	64		rocky reefs, kelp	males guard eggs, attached on brood chambers
<i>Lythrypnus zebra</i>	Goby, zebra	1				1		1			0	61		rocky reefs, kelp	demersal eggs attached to roof of shelter
<i>Medialuna californiensis</i>	Halfmoon	1				1					0	40		rocky reefs, kelp	abundant in kelp beds
<i>Menticirrhus undulatus</i>	Corbina, California	1						2		1	0	14		sand/ softbottom	growth rate faster in estuaries, spawn offshore
<i>Micrometrus minimus</i>	Surfperch, dwarf				1			2			0	9		rocky reefs	bear live, free swimming young
<i>Microstomus pacificus</i>	Sole, Dover	1	1								30	503		sand/ softbottom	a portion of stock migrates
<i>Mustelus californicus</i>	Shark, gray smoothhound	2		1			1	1			0	46		sand/ softbottom	live-bearing
<i>Mustelus henlei</i>	Shark, brown smoothhound	2		1			1				0	101		sand/ softbottom	live-bearing

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<i>Myliobatis californica</i>	Ray, bat	1			1		1				0	46		sand/ softbottom	live-bearing
<i>Ophiodon elongatus</i>	Lingcod	2				1	1		1	1	0	427		rocky reefs, kelp	lack swim bladder; may survive after being brought to surface and released; spawns nearshore on rocky reefs, male guard eggs
<i>Oxyjulis californica</i>	Senorita					1		1	1	1	0	30		rocky reefs, kelp	schooling species
<i>Oxylebius pictus</i>	Greenling, painted					1			1		0	49		rocky reefs, kelp	male guards eggs
<i>Paralabrax clathratus</i>	Bass, kelp	1		1		1	1	1	1	1	0	23		rocky reefs, kelp	aggregate in kelp beds and over rocky reefs for spawning in
<i>Paralabrax maculatofasciatus</i>	Bass, spotted sand	1				1	1	1			0	9		sand/ softbottom	aggregate in or near bays to spawn in summer
<i>Paralabrax nebulifer</i>	Bass, barred sand	2				1	1	2		1	0	37	1	sand/ softbottom	aggregate over sand in summer -early fall fro spawning
<i>Paralichthys californicus</i>	Halibut, California	2		1		1	1		1	1	0	91	1	sand/ softbottom	distribution influenced by El Nino events
<i>Parophrys vetulus</i>	Sole, English		1								18	101		sand/ softbottom	migrates, spawns at 200-360 ft
<i>Peprilus simillimus</i>	Pacific pompano (Butterfish)	1									9	201		coastal pelagic	a schooling species
<i>Phanerodon furcatus</i>	Surfperch, white	2			1					1	0	43		rocky reefs, kelp	bear live, free swimming young
<i>Pleuronichthys coenosus</i>	Turbot, C-O					1				1	0	30		sand/ softbottom	one of few flatfishes to occur in kelp beds
<i>Pleuronichthys decurrens</i>	Turbot, curlfin (Curfin Sole)									1	0	30		sand/ softbottom	small mouth; difficult to catch with hook-and-line
<i>Pleuronichthys guttulus</i>	Turbot, diamond	1		1					1	1	0	30		sand/ softbottom	
<i>Pleuronichthys ritteri</i>	Turbot, spotted								2	1	0	30		sand/ softbottom	
<i>Pleuronichthys verticalis</i>	Turbot, hornyhead								1	1	30	91		sand/ softbottom	
<i>Porichthys notatus</i>	Midshipman, plainfin		1								0	201		sand/ softbottom	eggs deposited on rocks and hard substrate
<i>Porichthys myriaster</i>	Midshipman, specklefin		1						2	1				sand/ softbottom	
<i>Raja inornata</i>	Skate, California		1		1		1				30	201		sand/ softbottom	lay egg cases
<i>Raja rhina</i>	Skate, longnose		1		1		1				201	503		sand/ softbottom	lay egg cases
<i>Rhacochilus toxotes</i>	Surfperch, rubberlip	2				1	1		1	1	0	46		rocky reefs, kelp	bear live, free swimming young
<i>Rhacochilus vacca</i>	Surfperch, pile	2				1	1		1	1	0	46		rocky reefs, kelp	bear live, free swimming young
<i>Rhinobatos productus</i>	Guitarfish, shovelnose	1	1		1	1			2	1	0	15		sand/ softbottom	live-bearing
<i>Roncador stearnsii</i>	Croaker, spotfin	1				1	1		2	1	0	9		sand/ softbottom	spawning primarily in summer
<i>Scorpaena guttata</i>	Scorpionfish, California	2	1			1	1		2	1	0	101		rocky reefs, kelp	adults aggregate in 12-360 feet to spawn; eggs released in gelatinous masses that flat to surface
<i>Scorpaenichthys marmoratus</i>	Cabezon	2				1	1		1		0	76		rocky reefs, kelp	eggs adhesive, attached to substrate, often macroalgae,
<i>Sebastes atrovirens</i>	Rockfish, kelp	2				1	1		2	1	0	46		rocky reefs, kelp	live-bearing
<i>Sebastes auriculatus</i>	Rockfish, brown	2				1	1				0	24		rocky reefs, kelp	live-bearing
<i>Sebastes aurora</i>	Rockfish, aurora		1				1				201	503		rocky reefs, sand/ softbottom	live-bearing
<i>Sebastes carnatus</i>	Rockfish, gopher	2				1	1		1		0	55		rocky reefs, kelp	live-bearing
<i>Sebastes caurinus</i>	Rockfish, copper	2				1	1		1		0	101		rocky reefs, kelp	live-bearing
<i>Sebastes chlorostictus</i>	Rockfish, greenspotted	1	1				1		1		49	201	1	rocky reefs	live-bearing
<i>Sebastes chrysomelas</i>	Rockfish, black-and-yellow	2				1	1		1		0	30		rocky reefs, kelp	live-bearing
<i>Sebastes constellatus</i>	Rockfish, starry	1	1				1	1	1		24	201		rocky reefs	live-bearing
<i>Sebastes crameri</i>	Rockfish, darkblotched		1				1				101	201		sand/ softbottom	live-bearing
<i>Sebastes dallii</i>	Rockfish, calico		1			1	1	1			30	101		sand and rock interface	live-bearing

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<i>Sebastes diploproa</i>	Rockfish, splitnose		1				1				213	475		rocky reefs	live-bearing
<i>Sebastes elongatus</i>	Rockfish, greenstriped	1	1				1				101	201		sand and rock interface	live-bearing
<i>Sebastes ensifer</i>	Rockfish, swordspine		1				1	1	1		76	201		rocky reefs	live-bearing
<i>Sebastes eos</i>	Rockfish, pink		1				1	1	1		101	503		rocky reefs	live-bearing
<i>Sebastes goodei</i>	Chilipepper	1	1				1				101	201		rocky reefs	live-bearing
<i>Sebastes hopkinsi</i>	Rockfish, squarespot		1				1	1	1		30	201		rocky reefs	live-bearing
<i>Sebastes jordani</i>	Rockfish, shortbelly		1				1				30	201		rocky reefs	live-bearing
<i>Sebastes lentiginosus</i>	Rockfish, freckled		1				1		1		40	101	1	rocky reefs	live-bearing
<i>Sebastes levis</i>	Cowcod	2	1			1	1		1		30	366		rocky reefs	live-bearing
<i>Sebastes macdonaldi</i>	Rockfish, mexican		1								91	183			
<i>Sebastes melanostomus</i>	Rockfish, blackgill	1	1				1				201	503		sand/ softbottom	live-bearing
<i>Sebastes miniatus</i>	Rockfish, vermilion	2					1		1		30	101		rocky reefs	live-bearing
<i>Sebastes mystinus</i>	Rockfish, blue	1	1			1	1	1	1		0	91		rocky reefs, kelp	live-bearing
<i>Sebastes ovalis</i>	Rockfish, speckled	1	1				1	1	1		30	101		rocky reefs	live-bearing
<i>Sebastes paucispinis</i>	Bocaccio	2				1	1		1		30	503		rocky reefs	live-bearing
<i>Sebastes rastrelliger</i>	Rockfish, grass	2		1		1	1		1		0	46		rocky reefs, kelp	live-bearing
<i>Sebastes rosaceus</i>	Rockfish, rosy	1	1				1		1		30	101		rocky reefs	live-bearing
<i>Sebastes rosenblatti</i>	Rockfish, greenblotched	1	1				1	1	1		61	201		rocky reefs	live-bearing
<i>Sebastes rubrivinctus</i>	Rockfish, flag	1					1	1	1		30	183		rocky reefs	live-bearing
<i>Sebastes rufus</i>	Rockfish, bank	1	1				1	1			101	503		rocky reefs	live-bearing
<i>Sebastes saxicola</i>	Rockfish, stripetail		1				1				59	201		rocky reefs	live-bearing
<i>Sebastes semicinctus</i>	Rockfish, halfbanded		1				1				59	101		rocky reefs, sand/ softbottom	live-bearing
<i>Sebastes serranoides</i>	Rockfish, olive	1					1		1		0	146		rocky reefs, kelp	live-bearing
<i>Sebastes serripes</i>	Rockfish, treefish	1	1			1	1	2	1		0	46		rocky reefs, kelp	live-bearing
<i>Sebastes simulator</i>	Rockfish, pinkrose		1				1	2	1		101	293		rocky reefs	live-bearing
<i>Sebastes umbrosus</i>	Rockfish, honeycomb		1				1		1		274	76		rocky reefs	live-bearing
<i>Sebastolobus alascanus</i>	Thornyhead, shortspine	1					1				101	503		rocky reefs, sand/ softbottom	lack swim bladder; may survive after being brought to surface and released; spawn gelatinous floating egg masses
<i>Sebastolobus altivelis</i>	Thornyhead, longspine	1					1				201	503		rocky reefs, sand/ softbottom	lack swim bladder; may survive after being brought to surface and released; spawn gelatinous floating egg masses
<i>Semicossyphus pulcher</i>	Sheephead, California	2				1	1	1	1	1	0	55		rocky reefs, kelp	changes sex from female to male with size
<i>Seriphus politus</i>	Queenfish	2						1			0	30		sand/ softbottom	schooling species, spawns at night from March to September
<i>Squatina californica</i>	Shark, Pacific angel	2			1	1	1				1	110		sand/ softbottom	live-bearing
<i>Stereolepis gigas</i>	Bass, Giant sea	2	1			1	1	2	1	1	0	46		rocky reefs, kelp, sand/ softbottom	aggregate for several months during spawning
<i>Synodus lucioceps</i>	Lizardfish, California		1								2	101		sand/ softbottom	rest on bottom using pelvic fins
<i>Triakis semifasciatus</i>	Shark, leopard shark	2				1	1		1	1	0	91		sand/ softbottom	aggregates in very shallow water to release young; live-bearing
<i>Umbrina roncadior</i>	Croaker, yellowfin	1					1	2	1		0	30		sand/ softbottom	spawning primarily in summer

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Invertebrates														
<i>Aplysia</i> spp.	Sea Hare (two species)	1				1		1	1		0	18	rocky reefs, kelp, sand/ softbottom	large nerve ganglia/useful for research
<i>Astroidea</i> spp.	Sea Stars (many spp.)					1	1	1	1	1	0	>550	rocky reefs, kelp, sand/ softbottom	some spp. Adapted to exposure at low tides
<i>Callinassa</i> spp.	Shrimp, Ghost	1		1				1	1	2	0	0	sand/ softbottom	form permanent burrows or impermanent tunnels
<i>Calliostoma</i> , spp.	Snail, Top (several spp.)	1				1	1		1		0	30	rocky reefs, kelp	common in upper kelp canopy
<i>Cancer antennarius</i>	Crab, Brown Rock	1		1		1		1	1	1	0	91	rocky reefs, kelp	may live for 5-6 years
<i>Cancer anthonyi</i>	Crab, Yellow Rock	1		1		1		1	1	1	0	91	sand/ softbottom	egg bearing fem. may congregate in rock-sand interface
<i>Cancer productus</i>	Crab, Red Rock	1		1		1		1	1	1	0	229	rocky reefs	may co-occur with spot prawns
<i>Centrostephanus coronatus</i>	Urchin, crown	?				1		?	?	1				
<i>Chione fluctifraga</i>	Clam, smooth chione	1		1		1		2	1	?	0	50	sand/ softbottom	subject to habitat loss from harbor develop.
<i>Clinocrdium nuttallii</i>	Clam, Cockle	1		1		1	1		1		0	201	sand/ softbottom	one spp. May live to 16 years
<i>Crangon</i> spp.	Shrimp, Bay (several spp.)	?	?	?	?	?	?	?	?	?	0	175	sand/ softbottom	major prey item for fishes
<i>Crangon</i> spp.	Shrimp, Red Rock	1				1		1			0	0		
<i>Crassadoma gigantea</i>	Scallop, Rock	1				1			1		0	30	rocky reefs	intolerant of salinity less than 25 ppt
<i>Emerita analoga</i>	Crab, sand	1								?	0	0	sand/ softbottom	larvae may occur with Dungeness crab larvae
<i>Haliotis corrugata</i>	Abalone, pink	2			1	1	1	2	1	1	6	37	rocky reefs, kelp	generally occurs where temp. above 14 C
<i>Haliotis cracherodii</i>	Abalone, black	2			1	1	1	1	1	1	0	0	rocky reefs, kelp	suseptible to withering syndrome disease
<i>Haliotis fulgens</i>	Abalone, green	2			1	1	1	2	1	1	0	6	rocky reefs, kelp	feeds on drift algae
<i>Haliotis rufescens</i>	Abalone, red	2			1	1	1		1	1	0	24	rocky reefs, kelp	largest abalone spp. in the world
<i>Haliotis sorenseni</i>	Abalone, white	2		1	1	1	1	2	1	2	24	61	rocky reefs	max age estimated at 40 years
<i>Haliotis walalleni</i>	Abalone, flat	2			1	1	1		1	1	6	21	rocky reefs, kelp	generally a cryptic species
<i>Kelletia kelletii</i>	Whelk, Kellets	1				1	1	1	1	?	0	70	rocky reefs	spawning aggregations up to 20 individ. Occur in spring
<i>Loligo opalescens</i>	Squid, Market	1						1	1		0	183	sand/ softbottom	short-lived; avg squid in commerical fishery 1/2 yr old
<i>Lopholithodes foraminatus</i>	Crab, box	?	?	?	?	?	?	?	?	?	0	549	rocky reefs	unknown
<i>Lottia gigantea</i>	Owl Limpet	1				1	1		1	1				
<i>Lottia</i> spp.	Limpets	1				1			1	1	0	30	rocky reefs	some species may live 15 years
<i>Loxorhynchus grandis</i>	Crab, Spider (Sheep)	1				1	1	1	1	?	6	125	rocky reefs, kelp	cease molting after reaching maturity
<i>Lytechinus anamesus</i>	Urchin, White					1		2	?	?	0	302	sand/ softbottom	extremely efficient grazers on smaller alga
<i>Megathura crenulata</i>	Giant Keyhole Limpet	1				1	1		1	1				
<i>Megastrea undosa</i>	Wavy Turban Snail	1		?		1		1	1		0	76	rocky reefs, kelp	crawl into kelp canopy at night to avoid predation
<i>Mytilus californianus</i>	California mussel	1				1				1	0	0		
<i>Mytilus</i> spp.	Mussels (several spp.)	1				1				1	0	40	rocky reefs	bioaccumulatur of toxins
<i>Naticidae polinises</i>	Snail, Southern Moon	1		1		1	1	1	1	1	0	152	sand/ softbottom	has aquiferous system of spongy sinuses in foot
<i>Octopoda</i> spp.	Octopus, two spot (2 spp.)					1		2	1	1		0		
<i>Octopoda rubescens</i>	Octopus, Red					1		2	1	1	9	100		
<i>Octopoda californicus</i>	Octopus, orange big eye					1		1	1	1	30	200		
<i>Pandalus platyceros</i>	Prawn, Spot	2						1			46	488	rocky reefs, sand/ softbottom	change sex from male to female during year 4
<i>Panopea abrupta</i>	Clam, geoduck	1		1		1	1		1		0	110	sand/ softbottom	individuals may exceed 10 lbs
<i>Panulirus interruptus</i>	Lobster, Ca. Spiny	2		1		1	1	1	1	1	0	73	rocky reefs, kelp	egg bearing females found in shallow water
<i>Parastichopus californicus</i>	Cucumber, California Sea	2	?			1			1		0	91	rocky reefs, sand/ softbottom	do not form spawning aggregations
<i>Parastichopus parvimensis</i>	Cucumber, Warty Sea	2	?			1			1		0	91	rocky reefs, sand/ softbottom	do not form spawning aggregations
<i>Pisaster giganteus</i>	Giant Spined Star					1	1	1	1	1				
<i>Pisaster ochraceus</i>	Ochre Star					1	1	1	1	1				

Master Plan Science Advisory Team
DRAFT - List of Species Likely to Benefit From MPAs in the MLPA South Coast Study Region
(Revised September 2, 2008)

Scientific Name	Species	Human impacts			Biological Life History								Primary Adult Habitat(s)	Unique or significant life-history characteristics
		Criteria 1: Direct take	Criteria 2: Bycatch	Criteria 3: Habitat degradation	Criteria 4A: Low larval dispersal	Criteria 4B: Adult home range	Criteria 4C: Low Fecundity	Criteria 5: Limited distribution	Criteria 6: Habitat Association	Criteria 7: Ecological importance	Shallowest Depth (m)	Deepest Depth (m)		
<i>Polychaeta phragmatopoma</i>	Polychaete Worm	1		?		1		1	?	1	0	>550	rocky reefs, sand/ softbottom	several spp. Have toothed proboscis
<i>Protothaca staminea</i>	Clam, littleneck	1		1		1			1		0	0	cobble beds	prized food item
<i>Sicyonia ingentis</i>	Prawn, Ridgeback	1				1	1	1	1		44	160	sand/ softbottom	positive response to El Nino conditions
<i>Strongylocentrotus fransiscanus</i>	Urchin, Red	1				1			?	1	0	122	rocky reefs, kelp	require high densities for successful spawning
<i>Strongylocentrotus purpuratus</i>	Urchin, Purple	1				1			?	1	0	91	rocky reefs, kelp	require high densities for successful spawning
<i>Tagelus californianus</i>	Clam, California jackknife	1		1	?	1		1	1		0		sand/ softbottom	occupies a permanent burrow
<i>Tapes philippinarum</i>	Clam, manila	?	?	?	?	?	?	?	?	?	0		sand/ softbottom	introduced from Japan, important recreational spp.
<i>Tegula spp., Lithopoma spp.</i>	Snail, Turban (several sp)	1		?		1		1	1		0	76	rocky reefs, kelp	feeds primarily on kelp and coralline algae
<i>Tethya aurantia</i>	Orange Puffball Sponge	?	?	?	?	?	?	?	?	?				
<i>Tivela stultorium</i>	Clam, Pismo	1		1		1	1	?	1	1	0	24	sand/ softbottom	primary prey item for sea otters
<i>Tresus nuttalli</i>	Clam, gaper	1		1		1			1		0	46	sand/ softbottom	may live to 17 years
<i>Upogebia spp.</i>	Shrimp, Mud	1		1		?		1	1		0		sand/ softbottom	form permanent burrows or impermanent tunnels
Algae														
<i>Egregia menziesii</i>	Feather Boa Kelp			1		1			?	1				
<i>Eisenia arborea</i>	Southern Sea Palm	1		?		1			?					
<i>Gelidium spp. (many species)</i>		1		?		1			?		0		rocky reefs	may form mats of algal turf
<i>Gracilaria spp. (many species)</i>		1		?		1			?		0		sand/ softbottom	used as spawning substrate by herring in SF bay
<i>Macrocystis pyrifera</i>	Kelp, Giant	1		1		1		1	1	1	6	37	rocky reefs	fronds may grow up to 24 inches/day
<i>Porphyra spp. (many species)</i>		1		?		1			?		0	30	rocky reefs	may be common in high energy surf zones
<i>Pterygophora californica</i>				1		1				1				
<i>Phyllospadix scouleri, torreyi</i>	Surfgrass					1		1	?	1				
<i>Silvetia compressa</i>				1	1	1			1	1				
<i>Zostera marina</i>	Eel Grass			1		1			?	1	2	6	sand/ softbottom	flowering plant
<i>Zostera pacifica</i>	Eel Grass			1		1		1	?	1				
Seabirds (migrant)														
Placeholder for seabirds														
Marine Mammals														
Placeholder for marine mammals														

*(Wisner & McMillan, 1990. Fish. Bull. 88(4): 790) ? - indicates lack of information to rank, blank cells indicate the criteria was not met
 This draft list will be revised and appended with Science Advisory Team input
 Information compiled by Santa Monica Bay Restoration Commission