Appendix E

North Central Coast Special Status Species

Appendix II: Species Likely to Benefit from MPAs and Special Status Species in the North Central Coast

(a) Species likely to benefit from marine protected areas in the north central coast study region

(b) Special status species likely to occur in north central coast California

Appendix II(a): Species likely to benefit from MPAs in the north central coast study region

California MLPA Master Plan Science Advisory Team
List of Species Likely to Benefit from
Marine Protected Areas in the MLPA North Central Coast Study Region
(revised October 3, 2007)

The Marine Life Protection Act (MLPA) requires that species likely to benefit from marine protected areas (MPAs) be identified; identification of 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 (July 2006)* 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 master plan science advisory team (SAT) for each study region of the California coast.

Attached to this document are the list of species likely to benefit for the MLPA North Central Coast Study Region (Alder Creek/Point Arena in Mendocino County to Pigeon Point in San Mateo County), as well as a list of the species *most likely to benefit* for the study region. These lists were adopted by the SAT on October 1, 2007, but may be modified by the SAT in the future as more information becomes available.

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

- They occur in the MLPA North Central Coast Study Region.
- They are taken directly or indirectly in commercial or recreational fisheries.
- They have life history characteristics that make them more conducive to protection by MPAs, such as: sedentary behavior, 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).

While this list is approximate, there are other species that may benefit or even diminish by establishing an MPA. In addition, it should be noted that many species have not yet been assessed for abundance or size frequency or their full life history requirements are not yet known.

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:

- There is evidence 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).
- The 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.

Table 1: Invertebrate species MOST likely to benefit from marine protected areas in the MLPA North Central Coast Study Region

abalone, red	*Haliotis rufescens*
clam, littleneck (Tomales Bay cockle)	*Protothaca staminea*
limpets	*Lottia gigantea*
mussels, native	*Mytilus californianus*
snail, turban	*Tegula funebralis*
urchin, red	*Strongylocentrotus franciscanus*

Table 2: Fish species MOST likely to benefit from marine protected areas in the MLPA North Central Coast Study Region

cabezon	*Scorpaenichthys marmoratus*
eel, wolf	*Anarrhichthys ocellatus*
flounder, starry	*Platichthys stellatus*
greenling, kelp	*Hexagrammos decagrammus*
greenling, rock	*Hexagrammos lagocephalus*
lingcod	*Ophiodon elongatus*
prickleback, monkeyface	*Cebidichthys violaceus*
prickleback, rock	*Xiphister mucosus*
ray, bat	*Myliobatis californicus*
rockfish, black	*Sebastes melanops*
rockfish, black-and-yellow	*Sebastes chrysomelas*
rockfish, blue	*Sebastes mystinus*
rockfish, bocaccio	*Sebastes paucispinis*
rockfish, brown	*Sebastes auriculatus*
rockfish, calico	*Sebastes dalli*
rockfish, China	*Sebastes nebulosus*
rockfish, copper	*Sebastes caurinus*
rockfish, flag	*Sebastes rubrivinctus*
rockfish, gopher	*Sebastes carnatus*
rockfish, grass	*Sebastes rastrelliger*
rockfish, greenspotted	*Sebastes chlorostictus*
rockfish, kelp	*Sebastes atrovirens*
rockfish, olive	*Sebastes serranoides*
rockfish, quillback	*Sebastes maliger*

rockfish, rosy	*Sebastes rosaceus*
rockfish, speckled	*Sebastes ovalis*
rockfish, squarespot	*Sebastes hopkinsi*
rockfish, starry	*Sebastes constellatus*
rockfish, treefish	*Sebastes serriceps*
rockfish, vermilion	*Sebastes miniatus*
rockfish, yelloweye	Sebastes ruberrimus
rockfish, yellowtail	Sebastes flavidus
smelt, surf	*Hypomesus pretiosus*
surfperch, calico	*Amphistichus koelzi*
surfperch, black	*Emibiotoca jacksoni*
surfperch, pile	*Damalichthys vacca*
surfperch, rainbow	*Hypsurus caryi*
surfperch, redtailed	*Amphistichus rhodoterus*
surfperch, rubberlip	*Phacochilus toxotes*
surfperch, shiner	*Cymatogaster aggregata*
surfperch, striped	*Embiotoca lateralis*
surfperch, walleye	*Hyperprosopon argenteum*
surfperch, white	*Phanerodon furcatus*

Table 3: Bird and Mammal species MOST likely to benefit from marine protected areas in the MLPA North Central Coast Study Region

brant (goose)	*Branta bernicla*
cormorant, Brandt's	*Phalacrocorax penicillatus*
cormorant, double-crested	*Phalacrocorax auritus*
cormorant, pelagic	*Phalacrocorax pelagicus*
grebe, Western/Clark's	*Aechmophorus occidentalis, clarkii*
guillemot, pigeon	*Cepphus columba*
murre, common	*Uria aalge*
murrelet, marbled	*Brachyramphus marmoratus*
oystercatcher, black	*Haematopus bachmani*
plover, snowy	*Charadrius alexandrinus*
porpoise, harbor	*Phocoena phocena*
sandpiper, western	*Calidris mauri*
scaup, lesser	*Aythya affinis*
scoter, surf	*Melanitta perspicillata*
sea lion, Steller	*Eumetopias jubatus*
sea otter, southern	*Enhydra lutris*
seal, harbor	*Phoca vitulina*
surfbird	*Aphriza virgata*
willet	*Catoptrophorus semipalmatus*

MLPA Master Plan Science Advisory Team
List of Species Likely to Benefit in the MLPA North Central Coast Study Region
Revised October 2, 2007

		Most likely to benefit	Primary bottom type	Shallow depth (m)	Deepest depth (m)	Sm-mod adult home range (<20 km)	Currently mod-large take	Historic mod-large take	Low pop. estimate (<40% unfished)	Size structure shifted toward sm indiv	Vulnerable life history	Life stage to benefit (e.g., spawning, nursery area)	Habitat impacted (by human activity)	Ecologically important (keystone or habitat forming)	**Comments**
Invertebrates															
abalone, black	*Haliotis cracherodii*		Rock	0	6	1	0	1	1	1	1	0	1	0	Only benefit in areas absent of sea otters
abalone, red	*Haliotis rufescens*	X	Rock	0	61	1	1	1	1	1	1	0	0	0	Short-lived, non-feeding larval stage, Only benefit in areas absent of sea otters
barnacles, gooseneck	*Pollicipes polymerus*		Rock	0	1	1	1	ND	ND	ND	0	0	1	1	Habitat forming, some intertidal take
chiton, giant	*Cryptochiton stelleri*		Rock	0	20	1	ND	1	ND	ND	1	0	0	0	low recruitment rate and long life span (O'Clair and O'Clair 1998), historically harvested by Native Americans, current harvest is unknown
clam, gaper	*Tresus nuttallii*		Sandy mud	0	30	1	1	1	ND	ND	0	0	0	0	
clam, geoduck	*Panopea generosa*		Sandy mud	0	110	1	ND	ND	ND	ND	1	0	0	0	Rare but occasionally found in Tomales bay, long lived
clam, littleneck (tomales bay cockle)	*Protothaca staminea*	X	Coarse Sand	0	0	1	1	1	ND	1	0	0	1	0	Manila littleneck clam is particularly abundant in San Francisco Bay and other estuaries to the north in the intertidal*
clam, washington	*Saxidomus nuttali*		Sand, mud	0	5	1	1	1	ND	ND	0	0	0	0	
corals			Rock	12	152	1	0	0	ND	ND	1	0	1	1	Possible impacts from trawling or other bottom contact
crab, brown rock	*Cancer antennarius*		Both	0	101	1	1	1	ND	ND	0	0	0	0	Only benefit in areas absent of sea otters
crab, dungeness	*Cancer magister*		Sand	0	230	0	1	1	ND	0	0	0	0	0	Due to management regime, no size shift
crab, red rock	*Cancer productus*		Both	0	229	1	1	1	ND	ND	0	0	0	0	Only benefit in areas absent of sea otters
crab, sand	*Emerita analoga*		Sand	0	0	1	0	0	ND	ND	0	0	0	0	
limpets	*Lottia gigantea*	X	Rock	0	30	1	1	0	ND	1	0	0	1	1	Rec harvest, removal impacts other species
mussels, native	*Mytilus californianus*	X	Rock	0	40	1	0	0	ND	ND	0	0	1	1	Removal impacts other species
octopus spp.	*Octopus spp.*		Rock	0	30	ND	1	1	ND	ND	0	0	0	0	

		Most likely to benefit	Primary bottom type	Shallow depth (m)	Deepest depth (m)	Sm-mod adult home range (<20 km)	Currently mod-large take	Historic mod-large take	Low pop. estimate (<40% unfished)	Size structure shifted toward sm indiv	Vulnerable life history	Life stage to benefit (e.g., spawning, nursery area)	Habitat impacted (by human activity)	Ecologically important (keystone or habitat forming)	**Comments**
oyster, native	*Ostrea conchaphila (lurida)*		Rock	0	30	1	0	1	1	0	1	0	1	1	Restoration efforts in Tomales Bay
prawn, spot	*Pandalus platyceros*		Sand	46	488	1	0	1	ND	ND	0	0	0	0	
scallop, rock	*Hinnites giganteus*		Rock	0	30	1	ND	ND	ND	ND	1	0	0	0	Evidence of positive impact in Southern CA reserves
sea cucumbers	*Parastichopus californicus*					1	0	1	ND	ND	0	0	0	0	
sea pens			Sand	8	91	1	0	0	ND	ND	1	0	1	1	Possible impacts from trawling or other bottom contact
sea stars	*Pisaster ochraceous, Pycnopodia helianthoides*		Both	0	183	1	0	0	ND	ND	0	0	1	1	Keystone species in intertidal
shrimp, blue mud	*Upogebia pugettensis*		Sand	0	0	1	0	ND	ND	ND	0	0	1	0	
shrimp, ghost	*Callianassa californiensis*		Sand	0	0	1	0	0	ND	ND	0	0	1	0	Fish bait
shrimp, pink	*Pandalus jordani*		Pelagic	45	370	0	0	0	0	0	0	0	0	0	
snail, moon	*Polinices lewisii*		Sand	0	152	1	0	0	ND	ND	0	0	1	0	
snail, turban	*Tegula funebralis*	X	Rock	0	76	1	1	0	ND	ND	0	0	1	0	Often taken in intertidal (KN)
sponges			Rock	0	610	1	0	0	ND	ND	1	0	1	1	Possible impacts from trawling or other bottom contact
squid, market	*Loligo opalescens*		Pelagic, Sand	0	0	0	1	1	0	ND	0	0	0	1	Both forage species and predators on small fishes; vulnerable to large-scale changes in the environment driven by El Nino Southern Oscillation events**
urchin, purple	*Strongylocentrotus purpuratus*		Both	0	92	1	0	0	0	ND	0	0	0	1	Only benefit in areas absent of sea otters, removal impacts other species
urchin, red	*Strongylocentrotus franciscanus*	X	Both	0	90	1	1	0	0	ND	0	0	0	1	Only benefit in areas absent of sea otters, removal impacts other species
worm, inkeeper	*Urechis caupo*		Sand	0	ND	1	1	0	ND	ND	0	0	1	0	Harvested for bait, abundance decreasing locally in Bodega harbor (KN)
worms			Both	0	183	1	0	0	ND	ND	0	0	1	0	
worms, phoronid	*Phoronopsis viridis*		Sand	0	30	1	0	0	ND	ND	0	0	0	1	Rare worldwide but abundant in the region (KN)
worms, phragmatopoma	*Phragmatopoma spp.*		Both	0	ND	1	0	0	0	ND	0	0	1	1	Reef building polychaete

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Plants and Algae															
algae, red	*Porphyra spp.*		Rock	0	ND	1	1	0	0	0	0	0	1	1	(Nori), localized commercial take, habitat forming, some cultural take
eel grass	*Zostera marina*		Sand	0	3	1	0	0	1	0	1	0	1	1	Important but will an MPA protect? Biggest threats are sedimentation and nutrient loading. What about disturbance from boats?
kelp, bull	*Nereocystis luetkeana*		Rock	0	18	1	0	0	0	0	1	0	0	1	Potential for harvest
kelp, winged	*Alaria marginata*		Rock	0	ND	1	1	0	0	0	1	0	1	1	Localized commercial take, habitat forming
other intertidal algal species	*Laminaria spp.*		Rock	0	0	1	1	0	0	0	1	0	1	1	Localized commercial take, habitat forming
other intertidal algal species	*Hedophyllum sessile*		Rock	0	ND	1	1	0	0	0	0	0	1	1	Localized commercial take, habitat forming
other intertidal algal species	*Lessoniopsis littorallis*		Rock	0	ND	1	1	0	0	0	0	0	1	1	Localized commercial take, habitat forming
rock weeds	*Order Fucales including Fucus spp.*		Rock	0	0	1	1	0	0	0	1	0	1	1	Will only benefit in no-transit areas (reduce trampling) - localized commercial take, habitat forming
sea palm	*Postelsia palmaeformis*		Rock	0	0	1	1	0	0	0	1	0	1	0	Commercial and cultural take; possibly double protection will reduce recreational poaching
surf grass	*Phyllospadix scouleri & P. torreyi*		Rock	0	3	1	0	0	0	0	1	0	1	1	Important but will an MPA protect? Biggest threats are sedimentation and nutrient loading.
Fishes															
cabezon	*Scorpaenichthys marmoratus*	X	Rock	0	110	1	1	1	0	ND	0	0	0	0	
croaker, white	*Genyonemus lineatus*		Sand	0	238	0	1	0	ND	ND	0	0	0	0	Are these abundant enough to be fished in the region?
eel, wolf	*Anarrhichthys ocellatus*	X	Rock	0	226	1	0	0	ND	ND	0	1	0	0	Sedentary; mate-for-life? Large size, potential forage increase without urchin harvest
flounder, starry	*Platichthys stellatus*	X	Sand	1	600	ND	1	1	0	ND	0	0	1	0	Estuarine nurseries, don't appear to move much (Love 1991)
goby, tidewater	*Eucyclogobius newberryi*		Sand	0	3	1	0	0	1	ND	0	0	1	0	Endangered?
greenling, kelp	*Hexagrammos decagrammus*	X	Rock	0	130	1	1	1	ND	ND	0	0	0	0	
greenling, rock	*Hexagrammos lagocephalus*	X	Rock	0	80	1	1	1	ND	ND	0	0	0	0	Recreational catch from piers

		Most likely to benefit	Primary bottom type	Shallow depth (m)	Deepest depth (m)	Sm-mod adult home range (<20 km)	Currently mod-large take	Historic mod-large take	Low pop. estimate (<40% unfished)	Size structure shifted toward sm indiv	Vulnerable life history	Life stage to benefit (e.g., spawning, nursery area)	Habitat impacted (by human activity)	Ecologically important (keystone or habitat forming)	**Comments**
hagfish, Pacific	*Eptatretus stoutii*		Sand, Rock	16	966	0	0	1	ND	ND	0	0	0	0	
halibut, California	*Paralichthys californicus*		Sand	0	281	0	1	1	0	ND	0	1	0	0	Nursery and spawning aggregations
halibut, Pacific	*Hippoglossus stenolepis*		Sand, Rock	6	1100	0	1	1	ND	ND	0	1	0	0	Rare but caught incidentally and marketed - young recruit to shallow waters
herring, Pacific	*Culpea pallasi*		Both	0	302	0	0	1	ND	ND	1	1	1	0	Spawning aggregations in estuaries, populations subject to environmental fluctuations
lingcod	*Ophiodon elongatus*	X	Rock	0	475	1	1	1	1	ND	0	1	0	0	Reproductive aggregations
longjaw mudsucker	*Gillichthys mirabilis*		sand	0	10	1	0	0	0	ND	0	0	1	0	Fished for bait, highly territorial in estuaries
prickleback, monkeyface	*Cebidichthys violaceus*	X	Rock	0	24	1	0	1	ND	ND	1	0	1	0	Homing; tidepools; large TL; potential local depletion
prickleback, rock	*Xiphister mucosus*	X	Rock	0	18	1	0	ND	ND	ND	1	0	1	0	potential local depletion
ray, bat	*Myliobatis californicus*	X	Sand, Rock	0	108	0	0	0	ND	ND	1	1	1	1	Aggregate to spawn and breed inshore. Top predator. Digging in sand has profound impact on invertebrate community.
rockfish, bank	*Sebastes rufus*		Rock	31	454	ND	1	1	ND	1	1	0	0	0	Declines in pop size and age/length in fishery preferred depth mostly deeper than state waters
rockfish, black	*Sebastes melanops*	X	Rock	0	366	1	1	1	1	1	1	0	0	0	Per Steve Ralston, CA population likely below 40%
rockfish, black-and-yellow	*Sebastes chrysomelas*	X	Rock	0	37	1	1	1	ND	ND	1	0	0	0	
rockfish, blue	*Sebastes mystinus*	X	Rock	0	549	0	1	1	0	1	1	0	0	1	Filter barnacle larvae (Gaines and Roughgarden)
rockfish, bocaccio	*Sebastes paucispinis*	X	Rock	0	481	0	1	1	1	1	1	0	0	1	Top predator; adults with low movement. Declining lengths in central CA CPFV (Mason 1998)
rockfish, brown	*Sebastes auriculatus*	X	Rock	0	146	1	1	1	ND	0	1	0	0	0	Locally important in places like San Franisco Bay since 1850
rockfish, calico	*Sebastes dalli*	X	Rock	0	305	1	0	0	ND	ND	1	0	0	0	
rockfish, canary	Sebastes pinniger		Rock	0	439	0	0	1	1	1	1	0	0	0	Declining lengths in central CA CPFV (Mason 1998) preferred depth mostly deeper than state waters
rockfish, chilipepper	Sebastes goodei		rock	0	491	0	1	1	0	1	1	0	0	0	Declining lengths in central CA CPFV (Mason 1998), preferred depth mostly deeper than state waters
rockfish, china	*Sebastes nebulosus*	X	rock	3	128	1	1	1	ND	ND	1	0	0	0	
rockfish, copper	*Sebastes caurinus*	X	Rock	0	185	1	1	1	ND	1	1	0	0	0	

		Most likely to benefit	Primary bottom type	Shallow depth (m)	Deepest depth (m)	Sm-mod adult home range (<20 km)	Currently mod-large take	Historic mod-large take	Low pop. estimate (<40% unfished)	Size structure shifted toward sm indiv	Vulnerable life history	Life stage to benefit (e.g., spawning, nursery area)	Habitat impacted (by human activity)	Ecologically important (keystone or habitat forming)	**Comments**
rockfish, flag	*Sebastes rubrivinctus*	X	Rock	30	418	1	0	0	ND	ND	1	0	0	0	
rockfish, gopher	*Sebastes carnatus*	X	Rock	0	86	1	1	1	0	ND	1	0	0	0	
rockfish, grass	*Sebastes rastrelliger*	X	Rock	0	46	1	1	1	ND	ND	1	0	0	0	
rockfish, greenspotted	*Sebastes chlorostictus*	X	Both	30	379	1	0	1	ND	ND	1	0	0	0	
rockfish, greenstriped	Sebastes elongatus		Sand/ Interface	12	1145	1	0	1	ND	ND	1	0	0	0	Preferred depth mostly deeper than state waters
rockfish, kelp	*Sebastes atrovirens*	X	Rock	0	58	1	1	1	ND	ND	1	0	0	0	
rockfish, olive	*Sebastes serranoides*	X	Rock	0	172	1	1	1	ND	1	1	0	0	0	
rockfish, quillback	*Sebastes maliger*	X	rock	5	274	1	1	1	ND	ND	1	0	0	0	
rockfish, rosy	*Sebastes rosaceus*	X	Rock	7	263	1	1	1	ND	ND	1	0	0	0	
rockfish, speckled	*Sebastes ovalis*	X	Rock	30	366	1	0	1	ND	ND	1	0	0	0	
rockfish, squarespot	*Sebastes hopkinsi*	X	Rock	18	305	1	0	0	0	ND	1	0	0	0	
rockfish, starry	*Sebastes constellatus*	X	Rock	15	274	1	1	1	ND	ND	1	0	0	0	
rockfish, treefish	*Sebastes serriceps*	X	Rock	0	98	1	1	1	ND	ND	1	0	0	0	
rockfish, vermilion	*Sebastes miniatus*	X	Rock	0	439	1	1	1	0	1	1	0	0	0	Southern CA declines in length (Love et al.)
rockfish, widow	Sebastes entomelas		Rock	0	800	0	0	1	1	ND	1	1	0	0	Preferred range mostly deeper than state waters - known to aggregate around pinnacles/seamounts
rockfish, yelloweye	Sebastes ruberrimus	X	Rock	15	549	1	0	1	1	ND	1	0	0	1	Preferred range mostly deeper than state waters. Top predator.
rockfish, yellowtail	Sebastes flavidus	X	Rock	0	549	0	1	1	0	1	1	0	0	0	Preferred range mostly deeper than state waters - declining lengths in central CA CPFV (Mason 1998)
sanddab, Pacific	*Citharichthys sordidus*		Sand	0	549	0	1	1	0	ND	0	0	0	0	Recreational catch
seabass, giant	*Stereolepis gigas*		Rock	6	46	1	0	1	1	1	1	0	0	0	Already protected but some incidental catch and gear can kill even those thrown back
seabass, white	*Atractoscion nobilis*		Both	0	120	ND	1	1	ND	ND		1	1	0	Seagrass beds as nursery grounds, historic fishery in Tomales Bay

		Most likely to benefit	Primary bottom type	Shallow depth (m)	Deepest depth (m)	Sm-mod adult home range (<20 km)	Currently mod-large take	Historic mod-large take	Low pop. estimate (<40% unfished)	Size structure shifted toward sm indiv	Vulnerable life history	Life stage to benefit (e.g., spawning, nursery area)	Habitat impacted (by human activity)	Ecologically important (keystone or habitat forming)	**Comments**
shark, broadnose sevengill	*Notorynchus cepidianus*		Sand	0	136	0	0	0	ND	ND	0	1	1	0	Estuarine nurseries, recreational and some commercial catch (Ebert, 2003)
shark, brown smoothhound	*Mustelus henlei*		Sand	0	281	0	1	1	ND	ND	1	1	1	0	Inshore nursery, recreational and some commercial in estuaries?
shark, leopard	*Triakis semifasciata*		Sand	0	157	0	1	0	ND	ND	1	1	1	0	Estuarine pupping and nursery grounds. Very common in kelp beds, often up in water column in kelp beds at night.
skate, big	*Raja binoculata*		Sand	2	800	0	1	0	ND	ND	1	0	0	0	Low fecundity, recreational catch and bycatch, wing meat sold (Ebert 2003)
skate, California	*Raja inornata*		Sand	13	1600	0	1	0	ND	ND	1	0	0	0	Recreational catch and bycatch wing meat sold (Ebert 2003)
skate, longnose	*Raja rhina*		Sand	9	1069	0	1	0	ND	ND	1	0	0	0	Low fecundity
smelt, surf	*Hypomesus pretiosus*	X	Sand	0	9	0	1	1	ND	ND	0	1	1	0	Spawn in surfzone, distinct local spawning populations
smelt, top-	*Antherinops affinis*		Sand	0	26	ND	0	0	ND	ND	0	1	1	0	Eggs laid on plants in backwater
sole, Dover	*Microstomus pacificus*		Sand	2	1372	0	1	1	0	ND	0	0	0	0	Nursery and spawning nearshore, otherwise a deeper wate
sole, English	*Pleuronectes vetulus*		Sand	0	549	1	1	1	0	ND	0	0	0	0	spp. Limited movement (Love 1991)
sole, petrale	Eopsetta jordani		Sand	0	549	0	1	1	1	ND	0	0	0	0	Preferred range is mostly deeper than state waters
sole, rex	Glyptocephauls zachirus		Sand	0	1145	0	1	1	0	ND	0	0	0	0	Preferred range is mostly deeper than state waters
sole, rock	*Lepidopsetta bilineata*		Rock	0	579	1	1	1	0	ND	1	0	0	0	Variable recruitment based on oceanographic factors, small range of adult movement (Love 1991)
sole, sand	*Psettichthys melanostictus*		Sand	0	325	ND	1	1	ND	ND	0	1	0	0	Juveniles in estuaries
surfperc, calico	*Amphistichus koelzi*	X	Sand	0	10	1	0	0	ND	ND	0	0	0	0	Sandy beaches; piers
surfperch, black	*Emibiotoca jacksoni*	X	Rock	0	46	1	1	1	ND	ND	1	0	1	0	Piers; jetties; estuaries; kelp; low fecundity
surfperch, pile	*Damalichthys vacca*	X	Rock	0	90	1	1	1	ND	ND	1	0	0	0	Piers; jetties; estuaries; kelp; low fecundity
surfperch, rainbow	*Hypsurus caryi*	X	Rock	0	50	ND	0	0	ND	ND	1	0	1	0	Harbors; eelgrass. Some evidence they move inshore and offshore, movements are not known; low fecundity.
surfperch, redtailed	*Amphistichus rhodoterus*	X	Sand	0	24	1	0	0	ND	ND	0	0	0	0	Sandy beaches; piers

		Most likely to benefit	Primary bottom type	Shallow depth (m)	Deepest depth (m)	Sm-mod adult home range (<20 km)	Currently mod-large take	Historic mod-large take	Low pop. estimate (<40% unfished)	Size structure shifted toward sm indiv	Vulnerable life history	Life stage to benefit (e.g., spawning, nursery area)	Habitat impacted (by human activity)	Ecologically important (keystone or habitat forming)	**Comments**
surfperch, rubberlip	*Phacochilus toxotes*	X	Rock	0	50	ND	0	1	ND	ND	1	0	1	0	Piers; jetties; kelp; low fecundity
surfperch, shiner	*Cymatogaster aggregata*	X	Both	0	146	ND	1	1	ND	ND	0	0	1	0	Estuaries; kelpbeds
surfperch, striped	*Embiotoca lateralis*	X	Rock	0	50	0	1	1	ND	ND	0	0	1	0	Piers; jetties; estuaries; kelp
surfperch, walleye	*Hyperprosopon argenteum*	X	Both	0	182	1	1	1	ND	ND	0	0	0	0	Sandy beaches; piers
surfperch, white	*Phanerodon furcatus*	X	Both	0	70	1	1	1	ND	ND	0	0	1	0	Estuaries
turbot, C-O	*Pleuronectes coenosus*		Sand	0	300	0	1	1	ND	ND	0	0	0	0	
turbot, diamond	*Hypsopsetta guttulata*		Sand	0	46	0	1	1	ND	ND	0	0	1	0	Often found in estuaries and brackish water
turbot, hornyhead	*Pleruonichthys verticalis*		Sand	9	201	0	1	1	ND	ND	0	0	0	0	
Seabirds (breeding)															
auklet, Cassin's	*Ptychoramphus aleuticus*		Sand, mud	0	80	0	0	0	0	0	1	0	0	0	potential human disturbance reduction from lights, California species of special concern.
auklet, rhinoceros	*Cerorhinca monocerata*		Sand, mud	0	30	0	1	0	1	1	1	0	0	0	potential for forage base increase, potential human disturbance reduction from lights, California species of special concern.
cormorant, Brandt's	*Phalacrocorax penicillatus*	X	Sand, mud	0	30	0	0	0	0	0	1	1	1	1	Potential for forage base increase, potential human disturbance reduction. Feeds mainly on small schooling fish (e.g., juv. rockfish, anchovy, etc.) in coastal waters.
cormorant, double-crested	*Phalacrocorax auritus*	X	Sand, mud	0	30	0	0	0	0	0	1	1	1	0	Potential for forage base increase, potential human disturbance reduction. Feeds mainly on small schooling fish in coastal estuaries.
cormorant, pelagic	*Phalacrocorax pelagicus*	X	Rock	0	30	1	0	0	0	0	1	1	1	1	Potential for forage base increase, potential human disturbance reduction. Feeds mainly on small fish (e.g., juv. rockfish, cottids,) and mysid shrimp in nearshore waters near breeding colonies. Sensitive to reductions in prey.

		Most likely to benefit	Primary bottom type	Shallow depth (m)	Deepest depth (m)	Sm-mod adult home range (<20 km)	Currently mod-large take	Historic mod-large take	Low pop. estimate (<40% unfished)	Size structure shifted toward sm indiv	Vulnerable life history	Life stage to benefit (e.g., spawning, nursery area)	Habitat impacted (by human activity)	Ecologically important (keystone or habitat forming)	**Comments**
guillemot, pigeon	*Cepphus columba*	X	Rock	0	30	1	0	0	0	0	0	1	0	1	Potential for forage base increase, potential human disturbance reduction. Feed on small fish (juv. Rockfish, cottids, sanddabs) in nearshore waters near colonies. Sensitive to reductions in prey.
murre, common	*Uria aalge*	X	Sand, mud	0	183	0	0	1	0	0	1	1	1	1	Potential for forage base increase, potential human disturbance reduction. Has been impacted in past as fisheries bycatch (gill-net). Recently, some take in rockfish hook-and-line around Farallon Islands.
murrelet, marbled	*Brachyramphus marmoratus*	X	Sand, mud	0	30	0	0	0	1	0	1	1	1	0	Significant decline in California population,potential for forage base increase, potential human disturbance reduction. Feed on small fish and zooplankton in nearshore waters. Restricted distribution. Federally threatened, state endangered
oystercatcher, black	*Haematopus bachmani*		Rock	0	0	0	0	0	1	0	1	1	1	1	Potential for forage base increase, potential human disturbance reduction. Feeds on intertidal molluscs on coastal rocks, reefs.
storm-petrel, ashy	*Oceanodroma homochroa*		NA	0	0	0	0	0	1	0	1	1	0	0	Potential for forage base increase, potential human disturbance reduction, restricted distribution, population declining
storm-petrel, Leach's	*Oceanodroma leucorhoa*		NA	0	0	0	0	0	0	0	1	1	0	0	Potential for forage base increase, potential human disturbance reduction
Seabirds (migrant)															
brant	*Branta bernicla*	X	Sand	0	3	0	0	0	1	0	1	0	1	0	Potential for forage base increase, potential human disturbance reduction. Eelgrass specialist. Winters in coastal estuaries. Declined in California due to loss of eelgrass habitat.
bufflehead	*Bucephala albeola*		Sand, mud	0	10	0	0	0	0	0	0	0	1	0	Potential for forage base increase, potential human disturbance reduction. Winters in coastal estuaries. Feeds on benthic invertebrates and small fish.
dowitcher, long-billed	*Limnodromus scolopaceus*		Mud, sand	0	0	0	0	0	0	0	0	0	1	0	Potential human disturbance reduction. Coastal estuaries important habitat spring-fall. Feeds on benthic invertebrates in intertidal mudflats.
dowitcher, short-billed	*Limnodromus griseus*		Mud, sand	0	0	0	0	0	0	0	0	0	1	0	Potential human disturbance reduction. Coastal estuaries important habitat spring-fall. Feeds on benthic invertebrates in intertidal mudflats.

		Most likely to benefit	Primary bottom type	Shallow depth (m)	Deepest depth (m)	Sm-mod adult home range (<20 km)	Currently mod-large take	Historic mod-large take	Low pop. estimate (<40% unfished)	Size structure shifted toward sm indiv	Vulnerable life history	Life stage to benefit (e.g., spawning, nursery area)	Habitat impacted (by human activity)	Ecologically important (keystone or habitat forming)	**Comments**
dunlin	*Calidris alpina*		Mud, sand	0	0	0	0	0	0	0	0	0	1	0	Potential human disturbance reduction. Coastal estuaries important habitat spring-fall. Feeds on benthic invertebrates in intertidal mudflats.
godwit, marbled	*Limosa fedoa*		Sand, mud	0	0	0	0	0	0	0	0	0	1	0	Potential human disturbance reduction. Coastal estuaries important habitat spring-fall. Feeds on benthic invertebrates in intertidal mudflats.
goldeneye, common	*Bucephala clangula*		Sand, mud	0	6	0	0	0	0	0	0	0	1	0	Potential for forage base increase, potential human disturbance reduction. Winters in coastal estuaries. Feeds on benthic invertebrates (molluscs, worms)and small fish.
grebe, eared	*Podiceps nigricollis*		Sand, mud	0	10	0	0	0	0	0	0	0	1	0	potential human disturbance reduction. Mainly fall-spring. Feed on small fish in coastal waters, estuaries.
grebe, Western/Clark's	*Aechmophorus occidentalis, clarkii*	X	Sand, mud	0	10	0	0	0	0	0	0	0	1	0	Potential for forage base increase, potential human disturbance reduction. Mainly fall-spring. Feed on small fish in coastal waters, estuaries.
pelican, brown	*Pelecanus occidentalis*		Sand, mud	0	3	0	0	0	1	0	0	0	1	0	potential human disturbance reduction, federally and state endangered - downlisting under consideration
plover, black-bellied	*Pluvialis squatarola*		Mud, sand, rock	0	0	0	0	0	0	0	0	0	1	0	Potential human disturbance reduction. Migrant and winter. Feeds on intertidal inverterbrates on mudlfats, reefs.
sandpiper, western	*Calidris mauri*	X	mud, sand	0	0	0	0	0	0	0	0	0	1	0	Potential human disturbance reduction. Coastal estuaries important habitat spring-fall. Feeds on benthic invertebrates in intertidal mudflats.
scaup, lesser	*Aythya affinis*	X	Sand, mud	0	10	0	0	0	0	0	0	0	1	0	Potential for forage base increase, potential for forage base increase, potential human disturbance reduction. Coastal estuaries important wintering habitat. Feeds on benthic invertebrates (molluscs, worms) and small fish.
scoter, surf	*Melanitta perspicillata*	X	Sand, mud	0	10	0	0	0	0	0	0	0	1	0	Potential for forage base increase, potential human disturbance reduction, declining. Migrant and winter in nearshore coastal waters and estuaries. Feeds on benthic invertebrates (molluscs, worms) and small fish.
turnstone, black	*Arenaria melanocephala*		Rock	0	0	0	0	0	0	0	0	1	1	0	Potential human disturbance reduction. Feeds on rocky intertidal invertebrates on coastal reefs, rocks.

		Most likely to benefit	Primary bottom type	Shallow depth (m)	Deepest depth (m)	Sm-mod adult home range (<20 km)	Currently mod-large take	Historic mod-large take	Low pop. estimate (<40% unfished)	Size structure shifted toward sm indiv	Vulnerable life history	Life stage to benefit (e.g., spawning, nursery area)	Habitat impacted (by human activity)	Ecologically important (keystone or habitat forming)	**Comments**
turnstone, ruddy	*Arenaria interpres*		Rock, sand	0	0	0	0	0	0	0	0	1	1	0	Potential human disturbance reduction. Feeds on rocky intertidal invertebrates on coastal reefs, rocks, gravel beaches.
willet	*Catoptrophorus semipalmatus*	X	Sand, mud	0	1	0	0	0	0	0	0	1	1	0	Potential human disturbance reduction. Coastal estuaries important habitat spring-fall. Feeds on benthic invertebrates in intertidal mudflats.
Marine mammals															
elephant seal, northern	Mirounga angustirostris		Pelagic both	0	300	0	0	1	0	0	0	1	0	0	Breed in the area, deep divers, would forage around the Farallones, sensitive to disturbance but not as sensitive as seals and sea lions
porpoise, harbor	*Phocoena phocena*	X	Sand, mud	0	60	0	0	1	0	0	0	0	1	0	Potential for forage base increase home range is probably within the study region, potential human disturbance reduction (very shy). Has been impacted in past as fisheries bycatch (gill-net). Key into the superabundant prey - diet very similar to harbor seals
sea lion, California	*Zalophus californianus*		Both	0	30	0	0	1	0	0	0	0	1	0	Potential for forage base increase, potential human disturbance reduction - haul out in the area and boat activity could disturb them - key into superabundant prey - don't breed in the area except in small numbers on the Farallones
sea lion, Steller	*Eumetopias jubatus*	X	Both	0	30	0	0	1	1	0	1	1	1	1	Ano Nuevo north central California population has declined, potential for forage base increase, potential human disturbance reduction; federally threatened - breed on Farallones and north of Fort Ross - would benefit from forage increase locally because they don't range as far as CA sealions
sea otter, southern	*Enhydra lutris*	X	Both	0	45	1	0	1	1	0	0	1	1	1	Resident in nearshore waters, esp. kelp beds. Feeds on benthic invertebrates, fish. Potential for forage base increase, potential human disturbance reduction. Formerly more abundant and widespread. Federally threatened. Has been impacted in past as fisheries bycatch (gill-net).

		Most likely to benefit	Primary bottom type	Shallow depth (m)	Deepest depth (m)	Sm-mod adult home range (<20 km)	Currently mod-large take	Historic mod-large take	Low pop. estimate (<40% unfished)	Size structure shifted toward sm indiv	Vulnerable life history	Life stage to benefit (e.g., spawning, nursery area)	Habitat impacted (by human activity)	Ecologically important (keystone or habitat forming)	**Comments**
seal, harbor	*Phoca vitulina*	X	Both	0	45	1	0	1	0	0	0	1	1	1	Potential for forage base increase, potential human disturbance reduction - some bycatch and shooting still - key into superabundant prey - important link in trophic level don't feed very far offshore - foraging within a 10-12 mile area
seal, northern fur	*Callorhinus ursinus*		Pelagic	0	30	0	0	1	1	0	1	1	1	1	Potential for forage base increase, potential human disturbance reduction. Recently recolonized Farallon Islands after 100+ year absence. (forage beyond state waters, McChesney) - if numbers increase they could be ecologically important around the Farallones
whale, gray	*Eschrichtius robustus*		Sand, mud	0	30	0	0	1	0	0	1	1	0	1	Potential for forage base increase. Potential for human disturbance reduction feed in drakes, tomales, and bodega bays - oversummer in the region - females with young take refuge near shore could benefit from safe MPAs with abundant fish - important ecosystem impact turn up the bottom with digging
whale, humpback	*Megaptera novaeangliae*		Sand, mud	0	200	0	0	1	1	0	1	0	0	0	Potential for forage base increase; potential for human disturbance reduction. Federally endangered. do key into certain areas in the region and feed near Point Reyes headlands, mouth of San Francisco Bay,
whale, minke	*Balaenoptera acutorostrata*		Sand mud pelagic	0	30	0	0	ND	0	0	1	0	0	0	Females and calves occur in Drakes Bay and residents yea round - key into superabundant prey

Note: Marine mammal depths are preferred foraging depths

Seabirds reference: Seabirds by Peter Pyle: pubs.usgs.gov/circ/c1198/chapters/150-161_Seabirds.pdf and National Geographic Field Guide to Birds of North America

Marine mammals reference: Farallones Marine Sanctuary Assocation http://www.farallones.org/findings/index.php and Marine Mammal Center http://www.marinemammalcenter.org/learning/education; www.afsc.noaa.gov/refm/docs/2002/ecochap.pdf

Southern Otter breeding range: http://www.baynature.com/v07n03/v07n03_etg.html

Invertebrates reference: http://www.mbayaq.org/efc/living_species, etc.

*Reference: http://72.14.253.104/search?q=cache:Lwn-nRiZce8J:www.dfg.ca.gov/Mrd/status/littleneck_clams.pdf+%22littleneck+clams%22+range&hl=en&ct=clnk&cd=2&gl=us&client=firefox-a

**Reference: http://www.blueoceaninstitute.org/seafood/species/122.htm

Appendix II(b): Special status species likely to occur in north central coast California

Note that this list was originally compiled by NOAA staff to represent species expected to occur in the Monterey Bay National Marine Sanctuary and has been edited to include other species of the MLPA North Central Coast Study Region.

Mammal Common Name	Scientific Name	Federal Status	State Status	Other Status
Blue whale	*Balaenoptera musculus musculus*	E		MMPA
Fin whale	*Balaenoptera physalus*	E		MMPA
Humpback whale	*Megaptera novaeangliae*	E		MMPA
North Pacific right whale	*Eubalaena japonica*	E		MMPA
Gray whale	*Eschrichtius robustus*	D		MMPA
Sei whale	*Balaenoptera borealis*	E		MMPA
Sperm whale	*Physeter macrocephalus*	E		MMPA
Killer whale	*Orcinus orca*	PT, SC (NMFS)		MMPA
Dall's porpoise	*Phocoenoides dalli*			MMPA
Pacific white-sided dolphin	*Lagenorhynchus*			MMPA
Risso's dolphin	*Grampus griseus*			MMPA
Northern right whale dolphin	*Lissodelphis borealis*			MMPA
California sea lion	*Zalophus californianus*			MMPA
Steller sea lion (Eastern stock)	*Eumetopias jubatus*	T		MMPA
Guadelupe fur seal	*Arctocephalus townsendi*	T	T	MMPA
Northern fur seal	*Callorhinus ursinus*			MMPA
Harbor seal	*Phoca vitulina*			MMPA
Northern elephant seal	*Mirounga angustirostris*			MMPA
Southern sea otter	*Enhydra lutris nereis*	T		MMPA

Bird Common Name	Scientific Name	Federal Status	State Status	Other Status
Common loon	*Gavia immer*		SSC	
Short-tailed albatross	*Phoebastria albatrus*	E	SSC	
Black-footed albatross	*Phoebastria nigripes*	SC (FWS)		
Dark-rumped petrel	*Pterodroma phaeopygia*	E		
Ashy storm-petrel	*Oceanodroma homochroa*	SC (FWS)	SSC (SP)	
Fork-tailed storm-petrel	*Oceanodroma furcata*		SSC (FP)	
Black storm-petrel	*Oceanodroma melania*		SSC (TP)	

California brown pelican	*Pelecanus occidentalis californicus*	E	E	
American white pelican	*Pelecanus erythrorhynchos*		SSC (FP)	
American bittern	*Botaurus lentiginosus*	SC (FWS)		
Least bittern	*Ixobrychius exilis*		SSC (TP)	
White-faced ibis	*Plegadis chihi*	SC (FWS)		
Harlequin duck	*Histrionicus histrionicus*	SC (FWS)	SSC (FP)	
California clapper rail	*Rallus longirostris obsoletus*	E	E	
California black rail	*Laterallus jamaicensis coturniculus*	SC (FWS)	T	
Western snowy plover	*Charadrius alexandrinus nivosus*	T	SSC	
Black oystercatcher	*Haematopus bachmani*	SC (FWS)		
Whimbrel	*Numenius phaeopus*	SC (FWS)		
Long-billed curlew	*Numenius americanus*	SC (FWS)		
Marbled godwit	*Limosa fedoa*	SC (FWS)		
Black turnstone	*Arenaria melanocephala*	SC (FWS)		
Red knot	*Calidris canutus*	SC (FWS)		
Elegant tern	*Sterna elegans*	SC (FWS)	SSC (TP)	
California least tern	*Sterna antillarum browni*	E	E	
Black tern	*Chlidonias niger*	SC		
Caspian tern	*Sterna caspia*	SM	BCC	
Gull-billed tern	*(Sterna nilotica)*	SC	BCC	
Royal tern	*(Sterna maxima)*	SC	BCC	
Marbled murrelet	*Brachyramphus marmoratus marmoratus*	T	E	
Xantus's murrelet	*Synthliboramphus hypoleucus*	SC (FWS) - Candidate	T	
Cassin's auklet	*Ptychoramphus aleuticus*	SC (FWS)	SSC (SP)	
Rhinoceros auklet	*Cerorhinca monocerata*		SSC (TP)	
Double-crested cormorant	*Phalacrocorax auritus*		SSC	
Black-crowned night heron	*Nycticorax nycticorax*	SC		
"Tule" greater white-fronted goose	*Anser albifrons elgasi*		SSC (SP)	
Canadian goose	*Branta canadensis leucopareia*	T		
"Aleutian" and “cackling” canada goose	*Branta canadensis minima*	D	SSC (SP)	
Saltmarsh common yellowthroat	*Geothlypis trichas sinuosa*	SC		
Black brant	*Branta bernicla nigricans*		SSC (TP)	
Redhead	*Aythya americana*		SSC (SP)	
Bufflehead	*Bucephala albeola*		SSC (TP)	
Osprey	*Pandion haliaetus*		SSC	

White-tailed kite	*Elanus leucurus*	SC		
Northern harrier	*Circus cyaneus*		SSC, SSC (SP)	
Sharp-shinned hawk	*Acipiter striatus*		SSC	
Cooper's hawk	*Accipiter cooperi*		SSC	
Ferruginous hawk	*Buteo regalis*	SC	SSC	
Golden eagle	*Aquila chrysaetos*		SSC	
Bald eagle	*Haliaeetus leucocephalus*	T	E	
Merlin	*Falco columbarius*		SSC	
American peregrine falcon	*Falco peregrinus anatum*	D, SC	E	
Yellow rail	*Coturnicops noveboracensis*		SSC, SSC (SP)	
Greater sandhill crane	*Grus canadensi tabida*		T	
Long-billed curlew	*Numenius americanus*	SC		
California gull	*Larus californicus*		SSC	
Willow flycatcher	*Empidonax traillii*		E	
Black skimmer	*Rynchops niger*	SC	BCC	
Tufted puffin	*Fratercula cirrhata*		SSC (FP)	

Reptile Common Name	Scientific Name	Federal Status	State Status	Other Status
Leatherback sea turtle	*Dermochelys coriacea*	E		
Loggerhead sea turtle	*Caretta caretta*	T		
Pacific ridley sea turtle	*Lepidochelys olivacea*	T		
Green sea turtle	*Chelonia mydas*	T		

Fish Common Name	Scientific Name	Federal Status	State Status	Other Status
Chinook salmon (spring run) Sac Rv and tributaries	*Oncorhynchus tshawytscha*	PT, T	T	
Chinook salmon (fall/late fall run) Sacramento river	*Oncorhynchus tshawytscha*	SC (NMFS) - Candidate	SSC	
Chinook salmon (winter run) Sacramento River	*Oncorhynchus tshawytscha*	PT, E	E	
Chinook salmon (California Coastal) Redwood Ck to Russian River	*Oncorhynchus tshawytscha*	T		
Coho salmon (central CA coast ESU)	*Oncorhynchus kisutch*	PE, T	E	
Steelhead (central CA coast ESU) Russian Rv to Soquel Creek	*Oncorhynchus mykiss irideus*	PT, T		
Steelhead (Northern California) Redwood Ck to Gualala River	*Oncorhynchus mykiss*	T		

Steelhead (CA central valley)	*Oncorhynchus mykiss*	T		
Tidewater goby	*Eucyclogobius newberryi*	E	SSC (QE)	
Pacific lamprey	*Lampetra tridentata*	SC (FWS)		
White sturgeon	*Acipenser transmontanus*	E		
Green sturgeon	*Acipenser medirostris*	SC (NMFS) - Candidate	SSC (QT)	
Cowcod	*Sebastes levis*	SC (NMFS)		
Bocaccio	*Sebastes paucispinis*	SC (NMFS)		
Canary rockfish	*Sebastes pinniger*	Overfished		
Longfin smelt	*Spirinchus thaleichthys*	SC		
California ("tomales") roach	*Lavinia symmetricus*		SSC	
Eulachon	*Thaleichthys pacificus*		SSC (WL)	
Bluefin tuna	*Thunnus thynnus*	SC		
Swordfish	*Xiphias gladius*	SC		
White shark	*Carcharodon carcharias*		Protected species	IUCN, CITES, CMS

Invertebrate Common Name	Scientific Name	Federal Status	State Status	Other Status
Black abalone	*Haliotis cracherodii*	SC (NMFS)		
Pinto abalone	*Haliotis kamtschatkana*	SC (NMFS)		
Sandy beach tiger beetle	*Cicindela hirticollis gravida*	SC		

Plant Common Name	Scientific Name	Federal Status	State Status	Other Status
Beach layia	*Layia carnosa*	E		
Northcoast sand verbena	*Abronia umbellata ssp. breviflora*	SC		
Sea palm	*Postelsia palmaeformis*	SC		

Index of the listing codes used in Appendix II(b)

Federal Listing Codes	
ESA: Endangered Species Act of 1973 listing codes	
E	Federally listed as endangered
T	Federally listed as threatened
D	Federally delisted
PE	Proposed for federal listing as endangered
PT	Proposed for federal listing as threatened
PD	Proposed for federal de-listing
Candidate	Candidate for federal listing as endangered or threatened
SC	Species of concern
SC (NMFS)	Species of concern by the National Marine Fisheries Service
SC (FWS)	Species of concern by the US Fish and Wildlife Service

State Listing Codes		
CESA: California Endangered Species Act listing codes		
E	State-listed as endangered	
T	State-listed as threatened	
CE	Candidate for state listing as endangered	
CT	Candidate for state listing as threatened	
SSC	Species of special concern	
BCC	Bird of conservation concern	
	QE	Qualify as endangered (fish list)
	QT	Qualify as threatened (fish list)
	WL	Watch list (fish list)
	FP	First priority (bird list)
	SP	Second priority (bird list)
	TP	Third priority (bird list)

Other Status Codes	
MMPA	Protected under the Marine Mammal Protection Act
IUCN	Included in the World Conservation Union's Red List of Vulnerable Species
CITES	Protected under the Convention of Intertational Trade in Endangered Species of Fauna and Flora
CMS	Protected by the Convention on Migratory Species

Sources for special status species list
Original list from MBNMS
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