

California Marine Life Protection Act Initiative Central Coast Project

External MPA Package AC

Map: North Central Coast Study Region

Map: South Central Coast Study Region

Staff Summary of Area and Habitats

Proponents' Rationale

Updated January 23, 2006

External Package AC: North Central Coast Study Region

Marine Life Protection Act

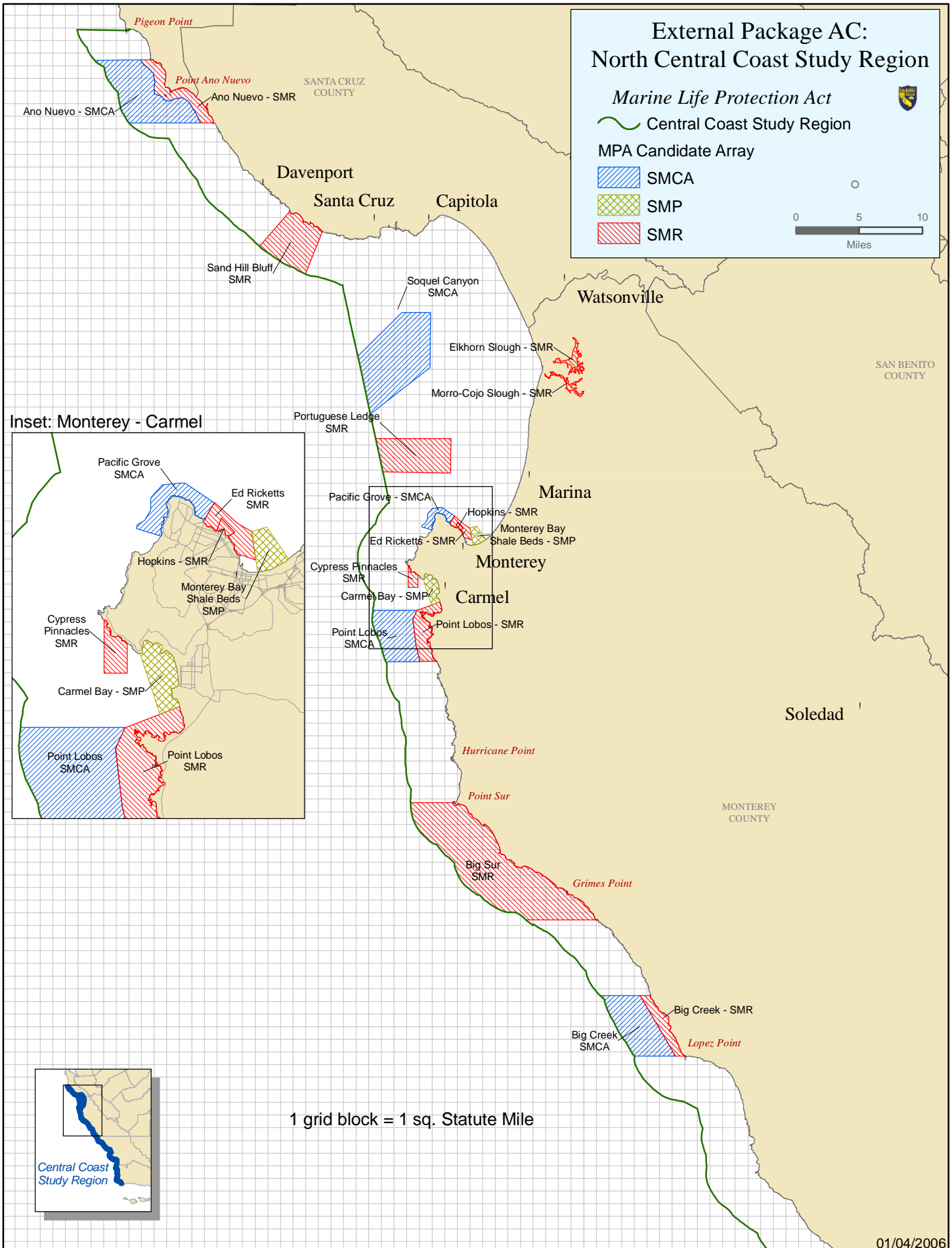
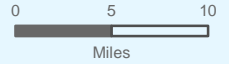
Central Coast Study Region

MPA Candidate Array

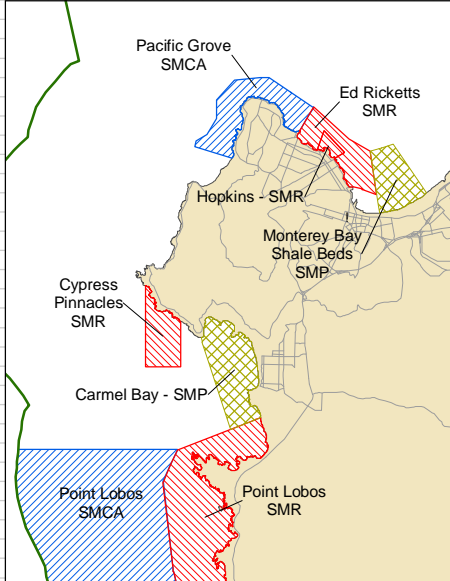
SMCA

SMP

SMR



Inset: Monterey - Carmel



1 grid block = 1 sq. Statute Mile



External Package AC: South Central Coast Study Region

Marine Life Protection Act



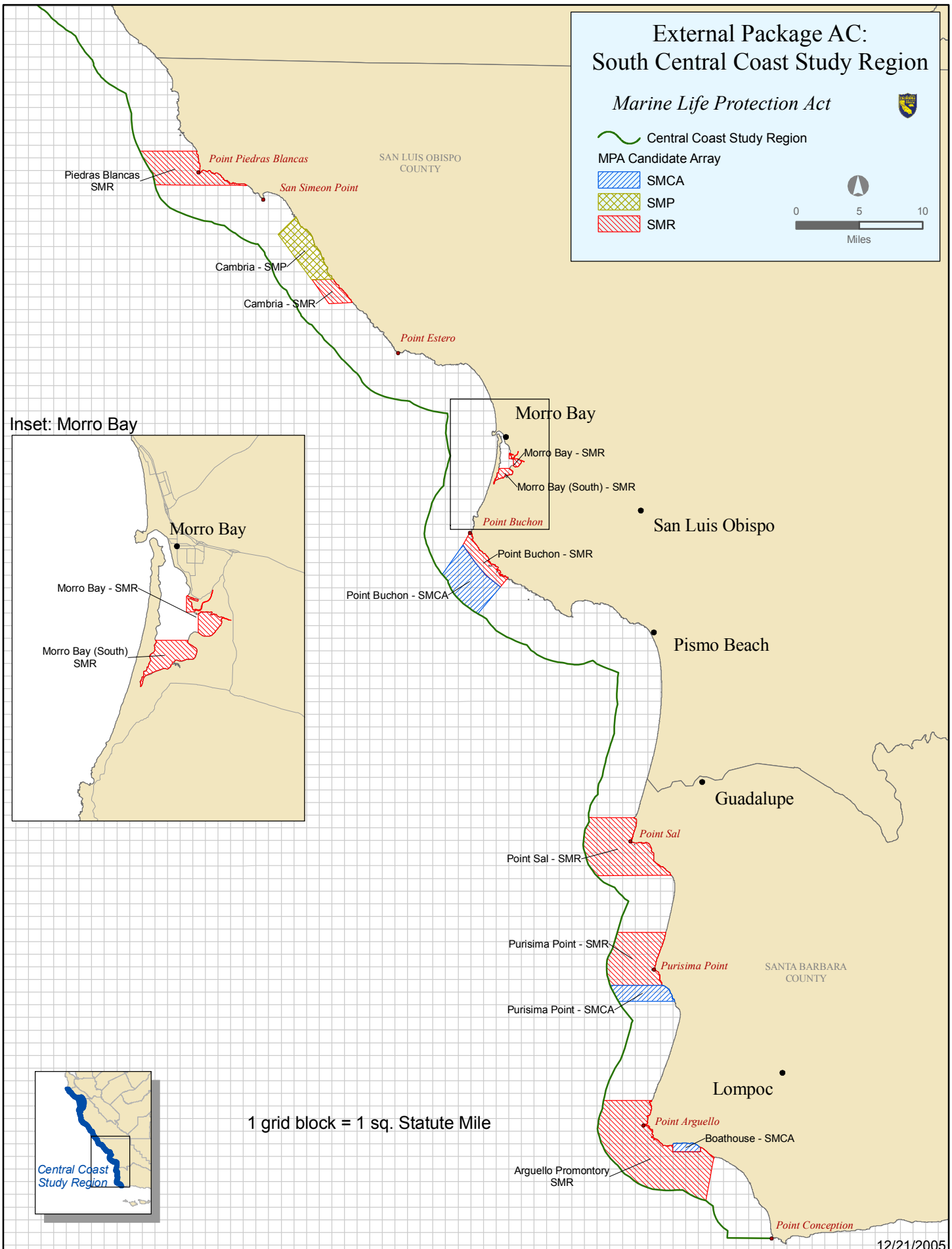
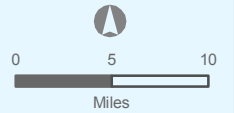
Central Coast Study Region

MPA Candidate Array

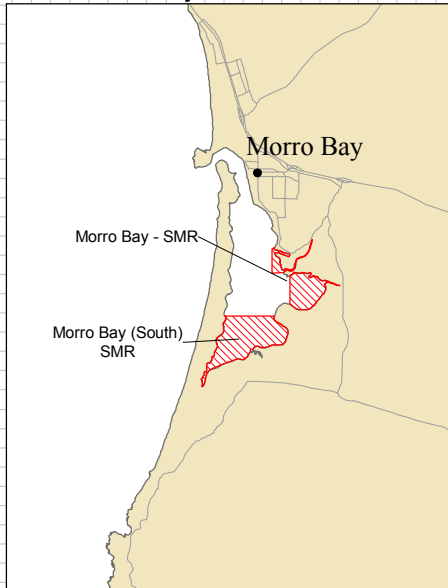
SMCA

SMP

SMR



Inset: Morro Bay



1 grid block = 1 sq. Statute Mile



**Marine Life Protection Act Initiative
Central Coast Project
Staff Summary of Area and Habitats in External Package AC**

Overall Summary for Package AC (12/15/05 version)

Type of MPA	# Proposed	Area (mi ²)	% of Study Region
State Marine Reserve (SMR)	19	202.28 mi ²	17.59%
State Marine Park (SMP)	3	12.33 mi ²	1.07%
State Marine Conservation Area (SMCA)	8	99.10 mi ²	8.62%
All MPAs combined	30	313.71 mi ²	27.28%

Individual MPAs in Package AC (12/15/05 version)

MPA Name	Size (mi ²)	Along-shore span (mi)	Depth Range (ft)
Año Nuevo SMR	6.59 mi ²	7.1 mi	0-84 ft
Año Nuevo SMCA (*)	21.33 mi ²	7.1 mi	20-237 ft
Sand Hill Bluff SMR	13.67 mi ²	3.1 mi	3-255 ft
Elkhorn Slough SMR	1.36 mi ²	7.6 mi	0-10 ft
Moro Coho Slough SMR	0.82 mi ²	7.6 mi	0-10 ft
Soquel Canyon SMCA (**)	28.94 mi ²	9.3 mi	226-3931 ft
Portuguese Ledge SMR	15.14 mi ²	5.9 mi	290-4838 ft
Monterey Shale Beds SMP (^)	1.13 mi ²	1.1 mi	0-130 ft
Edward F. Ricketts SMR	1.14 mi ²	1.3 mi	3-135 ft
Hopkins SMR	0.15 mi ²	0.4 mi	3-71 ft
Pacific Grove SMCA (*)	1.75 mi ²	2.7 mi	0-108 ft
Cypress Pinnacles SMR	0.99 mi ²	1.1 mi	3-223 ft
Carmel Bay SMP (^)	1.93 mi ²	2.5 mi	3-414 ft
Point Lobos SMR	5.47 mi ²	5.8 mi	0-553 ft
Point Lobos SMCA (**)	12.21 mi ²	4.1 mi	150-1858 ft
Big Sur SMR	53.80 mi ²	14.5 mi	0-2004 ft
Big Creek SMR	4.05 mi ²	2.5 mi	0-226 ft
Big Creek SMCA (**)	15.63 mi ²	2.5 mi	90-2393 ft
Piedras Blancas SMR	12.97 mi ²	5.7 mi	0-359 ft
Cambria SMP (^)	9.26 mi ²	5.7 mi	0-153 ft
Cambria SMR	3.39 mi ²	2.4 mi	3-164 ft
Morro Bay East SMR	0.40 mi ²	2.2 mi	0-10 ft
Morro Bay South SMR	0.79 mi ²	2.4 mi	0-10 ft
Point Buchon SMR (***)	4.29 mi ²	4.6 mi	0-148 ft
Point Buchon SMCA (***)	12.13 mi ²	4.6 mi	130-369 ft
Pt. Sal SMR	21.92 mi ²	6.1 mi	0-192 ft
Purisima Point SMR	16.46 mi ²	4.2 mi	3-193 ft
Purisima Point SMCA (*)	5.68 mi ²	1.6 mi	3-167 ft
Arguello Promontory SMR	38.87 mi ²	8.1 mi	0-292 ft
Boathouse SMCA (*)	1.43 mi ²	2.2 mi	3-53 ft

*Symbols following proposed MPA name indicate level of protection as determined by the Master Plan Science Advisory Team. (***) indicates SMCA High, (**) indicates SMCA Moderate, (*) indicates SMCA Low, and (^) indicates SMP Low.*

Habitat Representation in Package AC (12/15/05 version)

Habitat	Percentage of habitat in proposed MPA designations in the study region ¹			
	SMR	SMP	SMCA	Total MPAs
Intertidal				
Sandy or gravel beaches	23.28%	3.85%	2.86%	30.00%
Rocky intertidal and cliff	35.15%	2.82%	3.42%	41.39%
Coastal marsh	44.51%	1.04%	0.00%	45.55%
Tidal flats	46.43%	0.64%	0.00%	47.07%
Seagrass beds (0-30m): Surfgrass	35.25%	4.57%	2.17%	41.99%
Seagrass beds (0-30m): Eelgrass	32.62%	0.00%	0.00%	32.62%
Estuary	34.79%	0.81%	0.00%	35.61%
Soft bottom				
0-30 meters	16.20%	1.87%	2.07%	20.14%
30-100 meters	16.92%	0.72%	7.99%	25.63%
100-200 meters	14.30%	0.00%	17.33%	31.62%
>200 meters	13.42%	0.00%	22.03%	35.45%
Hard bottom				
0-30 meters	31.66%	3.55%	4.29%	39.50%
30-100 meters	22.61%	0.45%	11.02%	34.07%
100-200m	18.04%	0.00%	25.83%	43.87%
>200 meters	14.05%	0.00%	20.86%	34.91%
Kelp forest				
Average kelp ('89, '99, '02, '03)	27.94%	7.97%	2.36%	38.26%
Persistent kelp	26.74%	12.90%	1.57%	41.22%
Submarine canyon				
0-30 meters	40.71%	0.00%	0.00%	40.71%
30-100 meters	11.31%	0.23%	23.75%	35.28%
100-200 meters	11.39%	0.00%	26.08%	37.46%
>200 meters	11.13%	0.00%	25.34%	36.47%

¹ Note: These are proposed MPA designations, NOT levels of protection assigned by the SAT.

**Natural Resources Defense Council
PRBO Conservation Science**

December 15, 2005

Re: Joint Proposed MPA Network for Analysis

To: MLPA Staff:

Thank you for providing us with the opportunity to respond to the SAT analyses of our proposals. We greatly appreciate the ability to provide input to the Central Coast MLPA process.

After observing the evolution of the CCRSG packages, and further discussion between our two organizations, we believe that our proposals offer distinct benefits relative to the other proposals, particularly in terms of meeting the Master Plan Framework MPA size and spacing guidelines and addressing marine bird and mammal and forage species issues. We take seriously the Blue Ribbon Task Force's concern that having too many proposals could overwhelm available SAT resources. We also acknowledge that the RSG proposals should take precedence when analytic resources are limited. To help reduce the burden on the SAT, we have combined our proposals into one package for the next round of SAT analyses.

The SAT's preliminary analysis gave the NRDC proposal, Package A, a favorable review, and found that it appeared to provide most habitats with adequate conservation value. However, it identified several habitats, including tidal flats, eelgrass beds, estuarine habitats, deep sand, deep rock and shallow canyon heads, that had lower levels of protection (less than 10% available protected). The analysis also indicated the proposal would be stronger if more of Morro Bay's estuarine habitats had stronger protection. In addition to the changes we made to combine our proposals, we made the following changes to address those observations:

- added a state marine reserve (SMR) in Morro Cojo Slough;
- expanded the SMR in Morro Bay to the southern segment of the estuary and created a new state marine conservation area (SMCA) in that estuary;
- expanded the Big Creek SMR and extended the Point Buchon SMR into deeper water to increase the coverage of deep water sand; and expanded Portuguese Ledge SMR to include more deep water rock.

The original design and the changes aim to meet the statutory requirements of the Marine Life Protection Act, with a specific focus on a group of sites that encompass representative and unique habitats and function as a network to protect productive and resilient ecosystems, biodiversity and natural heritage values for the future as well as the present. To that end, we focused on MPA size and spacing as well as location. The proposal also includes sites designed to provide recreation, education and scientific opportunities. The MPAs in this proposed system include areas that are unique or representative of the region.

Taken as a group, these MPAs aim to address Goals 1, 2, 3, 4 and 6 of the MLPA and CCRSG. Some locations stand out as exceptionally rich ecologically (e.g. areas in and around Ano Nuevo, Monterey Canyon and its branches, Point Lobos, Big Sur, Piedras Blancas, and Point Arguello-

Point Conception); marine reserves at these places tend to meet multiple MLPA goals and guidelines in relatively compact areas. A number of our proposed MPAs once supported high densities of big fish but are currently depleted (e.g. Portuguese Ledge, Cypress Pinnacles area), and are likely to serve as excellent restoration sites. We consulted a wide range of parties in preparing this proposed network, and hope it will be a valuable contribution to the range of network alternatives.

Sincerely,

Kate Wing
Karen Garrison
NRDC

Julie Thayer
PRBO Conservation Science



Revised NRDC/PRBO joint proposal

All changes are noted relative to External Package A, thus “no change” means no change to the MPA as currently described in Package A. Of the eleven changes, one simply increases the level of protection within an SMCA and seven involve the addition or substitution of an existing DFG shapefile, which is listed by the name given in the November 29-30 meeting documents. The remaining **three** are boundary extensions for which NRDC will provide shapefiles.

MPA	Changes	Notes
Año Nuevo SMR	None	
Año Nuevo SMCA	Commercial & recreational pelagic trolling (previous SMCA allowed purse seine fishing)	Protection of forage species important; nets can cause entangling of feeding seabirds, especially young seabirds
Sand Hill Bluff SMR	None	
Soquel Canyon SMCA	None	
Elkhorn Slough SMR	None	
Morro Coho Slough SMR (shapefile part of Package 2)	NEW, reserve within mouth of estuary, included in 12/15/05 version of CCRSG Package 2	Added to meet SAT recommendation to increase estuarine habitat
Portuguese Ledge SMR (SS_PortLedgeOceana_SMR)	Expand, use boundaries defined by Oceana/CCRSG Package 2 proposal	Expanded to meet SAT recommendation to include more deep water rock habitat
Monterey Shale Beds SMP	None	
Edward Ricketts SMR	None	
Hopkins SMR	None	
Pacific Grove SMCA	None	
Cypress Pinnacles SMR	None	
Carmel Bay SMP	None	
Pt. Lobos SMR	None	
Pt. Lobos SMCA	None	
Big Sur SMR	None	
Big Creek SMR	Expand South to a line due west of Lopez Point	Expanded to meet SAT minimum shoreline distance recommendation
Big Creek SMCA	Expand South to a line due west of Lopez Point	Expanded to add more deep-water sand and rock habitat
Piedras Blancas SMR	None	
Cambria SMP	None	
Cambria SMR	None	
Morro Bay Estuary SMR	None	
Morro Bay South SMR (SS_MorroSouth_SMR)	NEW, included in 12/15/05 version of CCRSG Package 2	Added to meet SAT criterion to increase estuarine habitat
Point Buchon SMR	None	

Point Buchon SMCA	Add SMCA extending to three miles straight from proposed SMR boundaries	Expanded to add more deep-water sand habitat, and meet minimum size guidelines
Point Sal SMR	None	
Purisima Point SMR (PurisimaPoint_SMR)	Add PRBO proposed area to NRDC package	
Purisima Point SMCA (PurisimaPoint_SMCA)	Add PRBO proposed area to NRDC package	
Arguello Promontory SMR (ArguelloPromontory_SMR)	Use PRBO proposed area, eliminate NRDC Point Arguello SMCA proposal	
Boathouse SMCA (Boathouse_SMCA)	Use PRBO proposed area, eliminate NRDC Point Arguello SMCA proposal	



NRDC Central Coast Proposal for Evaluation by SAT December, 2005

Overview and Summary of Changes

We take seriously the Blue Ribbon Task Force's concern that having too many proposals could overwhelm available SAT resources. We also acknowledge that the RSG proposals should take precedence when analytic resources are limited. To help reduce the burden on the SAT, we have combined the NRDC and PRBO Conservation proposals into one package for the next round of SAT analyses. The new package merges sites from Packages A and C, adds a site from Package 1 and 2, eliminates some sites, and incorporates changes designed to meet the recommendations from the SAT and BRTF review. The new Package A+C thus incorporates distinct benefits from several proposals and better addresses both the Master Plan Framework size and spacing guidelines and marine bird, mammal and forage species needs.

The SAT's preliminary analysis gave the NRDC proposal, Package A, a favorable review, and found that it appeared to provide most habitats with adequate conservation value. However, it identified several habitats, including tidal flats, eelgrass beds, estuarine habitats, deep sand, deep rock and shallow canyon heads, that had lower levels of protection (less than 10% available protected). The analysis also indicated the proposal would be stronger if more of Morro Bay's estuarine habitats had stronger protection. In addition to the changes we made to combine our proposals, we made the following changes to address those observations:

- added a state marine reserve (SMR) in Moro Cojo Slough;
- expanded the Soquel Canyon SMCA to include more MPAs closer to the SAT's recommended ideal size;
- expanded Portuguese Ledge SMR to include more deep water rock.
- expanded the SMR in Morro Bay to the southern segment of the estuary and created a new state marine conservation area (SMCA) in that estuary;
- expanded the Big Creek SMR and SMCA and extended the Point Buchon SMR into deeper water to increase the coverage of deep water sand.

The original design and the changes aim to meet the statutory requirements of the Marine Life Protection Act, with a specific focus on a group of sites that encompass representative and unique habitats and function as a network to protect productive and resilient ecosystems, biodiversity and natural heritage values for the future as well as the present. To that end, we focused on MPA size and spacing as well as location. The proposal also includes sites designed to provide recreation, education and scientific opportunities.

Taken as a group, these MPAs aim to address Goals 1, 2, 3, 4 and 6 of the MLPA and CCRSG. Some locations stand out as exceptionally rich ecologically (e.g. areas in and around Ano Nuevo, Monterey Canyon and the Peninsula, Point Lobos and Carmel Bay, Big Sur, Piedras Blancas, Point Buchon and Point Arguello-Point Conception); marine reserves at these places tend to meet multiple MLPA goals and guidelines in relatively compact areas. They also protect healthy ecosystems in truly outstanding ocean places—those with wildlife values, habitat and aesthetics comparable to the best of our land parks. Because this ocean natural heritage is particularly important to our constituency and, as poll after poll confirms, to the people of California as a whole, we consider the MPAs at these sites a core feature of our proposal. We believe that these locations would be good anchors for an ecologically coherent MPA network on the Central Coast

A number of our proposed MPAs once supported high densities of big fish but are currently depleted (e.g. Portuguese Ledge, Cypress Pinnacles area), and are likely to serve as excellent restoration sites. We consulted a wide range of parties in preparing this proposed network, and hope it will be a valuable contribution to the range of network alternatives.

These MPAs, taken as a group, aim to address Goals 1, 2, 3, 4 and 6 of the MLPA and RSG. It is too early in the process to determine whether they meet all of Goal 5. Overall, we propose 30 MPAs (29 of them new or modified), with 19 reserves, eight conservation areas, and three new or modified parks. We believe that the high level of protection offered by reserves in many of these sites is necessary to meet the goals of the MLPA, and these areas comprise the majority of our proposal.

To develop this proposal, we collected information through interviews and other personal communications with individuals including Don Canestro, Kaitilin Gaffney, Gordon Hensley, Dr. Ralph Larson, Marla Morrissey, Dr. John Pearse, Jesus Ruiz, Marc Shargel, Steve Shimek, Jim Webb, John Wolfe, other members of the RSG, researchers at Point Reyes Bird Observatory Conservation Science, other scientists and fishermen, and numerous others. We greatly appreciate the information provided by these individuals but their cooperation should not be taken as an endorsement of this proposal.

We also relied heavily on materials provided by MLPA staff as well as information from other sources. The list below includes the majority of the sources we reviewed in developing our proposal, though it is not exhaustive. We are familiar with the scientific journal articles listed on the MLPA Initiative website and, for the most part, we do not repeat those titles here for the sake of length. We do include articles that are more recent or otherwise omitted from that list, of particular relevance, or that we relied on heavily for our network design.

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Disposition of existing MPAs

- Ano Nuevo Invertebrate Area special closure: superseded by proposed Ano Nuevo Marine Reserve
- Elkhorn Slough SMR: superseded by proposed Elkhorn Slough State Marine Reserve
- Hopkins SMR: remains in place, as is
- Pacific Grove SMCA: superseded by proposed Pacific Grove State Marine Conservation Area
- Carmel Bay SMCA: remains in place except where modified by proposed Point Lobos SMR
- Point Lobos SMR: superseded by proposed Point Lobos State Marine Reserve
- Julia Pfeiffer Burns SMCA: remains as is
- Big Creek SMR: expanded southward
- Atascadero Beach SMCA: eliminated because does not meet original objective of protecting clams or provide protection for other species.
- Morro Beach SMCA: eliminated for same reasons as Atascadero Beach
- Pismo SMCA: retain as long term reference area to assess relative abundance and size of Pismo clams within sea otter range, without human harvest.
- Pismo-Oceano SMCA: eliminated for same reasons as Atascadero Beach
- Vandenberg SMR: remains in place, encompassed within proposed Pt. Arguello SMCA

Consideration of socio-economic impacts

We lack sufficient information to assess socio-economic impacts at this point in time, but have tried to reflect concerns we have heard expressed in meetings with other interested parties over the last five years. We have included three state marine parks, all of which are adjacent to marine reserves, both to accommodate social and economic concerns and to allow evaluation and comparison of fishing impacts. Where comparable habitat was available further from a port, we selected that site. We chose not to extend Cambria SMR and SMP out to three miles because of commercial and recreational fishing that occurs in those areas, and because we believed similar deep water habitat could be protected elsewhere. Canary rockfish hotspots, as preliminarily identified by DFG, are encompassed in several of our sites, including Año Nuevo and Sand Hill Bluff; MPAs that do not allow bottom fishing at these sites may provide benefits that allow DFG and the Pacific Council to re-open larger areas that are currently closed to help rebuild depleted rockfish. Finally, our largest reserve, the Big Sur SMR, covers one of the most remote and inaccessible sections of the California coast.

Area Descriptions:

1. Año Nuevo SMR

Area meets the following California State Interagency Coordinating Committee Criteria:

- I.A.1.—will protect the endangered marbled murrelet, snowy plover and coho salmon, and the threatened Steelhead
- I.A.2.—protects rocky, kelp and sandy bottom; upwelling area and potential larval retention area
- I.A.4.—protects black rockfish and other nearshore finfish
- I.A.7.—Connected to the Gazos, Waddell and Scott Creek watersheds and estuaries which support species that are dependent on both healthy terrestrial and marine habitats.

I.A.9.—includes inter-tidal, rocky, kelp and sandy bottom habitats

Potentially meets the following sociological criteria:

I.B.2—currently a popular research and public education site due to the Invertebrate Area Special Closure at Año Nuevo

I.B.6.—the proposed site will be surrounded by a proposed SMCA

Potentially meets the following Management and Enforcement Criteria:

I.C.1.—will include the existing Invertebrate Area Special Closure at Año Nuevo

I.C.3.—boundaries are simple and square

I.C.4.—would lessen the impact on black rockfish in particular

Potentially meets the following Evaluation and Research Criteria:

I.D.1—currently a popular research and public education site; will only expand upon this.

Does this site expand an existing MPA?

No, but is adjacent to coastal terrestrial State Parks (Año Nuevo State Reserve and Big Basin State Park). The Invertebrate Area Special Closure at Año Nuevo would also be included.

Is this a replicate of another site? No, but it may be desirable to create an intertidal reserve on the grounds of the old Hearst property. The area around Piedras Blancas could serve as a replicate for Año Nuevo.

Goals and objectives for this MPA:

Overall goal is to protect ecosystem structure and processes in habitat that supports diverse fish and other sea life, provides an important bird foraging area, pinniped haul-out and breeding areas, and important stream access for Steelhead and Coho (Goals 1 and 4).

Goal 1, Obj. 3 – important upwelling and larval retention area

Goal 1, Obj. 4 – important land-sea connection

Goal 2, Obj. 1 – important area for black rockfish

Goal 2, Obj. 2 – important larval retention area

Goal 3, Obj. 1 – adjacent to state parks with enforcement capability

Goal 3, Obj. 3 – enhance already popular research and public education activities

Goal 4, Obj. 2 – includes representatives of rocky, inter-tidal, kelp and sandy bottom. This is a natural heritage site with diverse and abundant marine mammals, sea birds, fish and other sea life. This SMR will help protect prey species as well as bottom fish

Goal 6 - together with proposed Año Nuevo SMCA, may help meet network design guidelines. The two sites cover about 28 sq mi., likely large enough to provide benefits for invertebrates and some fish.

Habitats, populations, or ecosystem functions of concern, including threats:

Comprised of habitats representative of this depth range (0-17 fm) and section of the coast, including rocky reef, kelp and sandy bottom. This site will encompass the northern portion of the Año Nuevo upwelling plume and larval retention zones leeward of important coastal promontories (Pigeon Point and Point Año Nuevo). Site is adjacent to the largest mainland-

breeding colony in the world for the northern elephant seal. It is an important area for resident adult black rockfish, which have been heavily fished in central California in the past decade. The Gazos, Waddell and Scott Creek watersheds and estuaries support populations of the endangered marbled murrelet, snowy plover and coho salmon, and threatened steelhead, all species that depend on healthy terrestrial and marine habitats (land-to-sea connection).

Año Nuevo Island and the surrounding islets and cliffs provide breeding and haul-out habitat for over 18,000 marine mammals and 9,000 seabirds, including the threatened Stellar Sea Lion, endangered Brown Pelican, and species of special concern Rhinoceros Auklet, Cassin's Auklet and Ashy Storm-Petrel. California Current endemics Brandt's Cormorant and Western Gull also have large breeding colonies there. Coastal kelp forests, eelgrass beds, rocky reefs, and both hard and soft substrates in this area provide habitat for the threatened Southern Sea Otter and overfished groundfish species, as well as foraging opportunities for other marine mammals, birds and listed Great White Sharks.

2. Año Nuevo SMCA

Allowed fishing: Commercial and recreational pelagic trolling

Area meets the following California State Interagency Coordinating Committee Criteria:

Biological criteria:

III.A.1: includes numerous species of listed birds and marine mammals, along with black rockfish, lingcod and others

III.A.2: includes an upwelling area, along with hard and soft substrate

III.A.4: protects black rockfish, lingcod and possibly others; encompasses potential canary rockfish hotspots identified in DFG's draft hotspots analysis

III.A.7: will connect deeper water with the proposed shallow water SMR with the Invertebrate Areas Special Closure at Año Nuevo

III.A.8: highly productive due to upwelling

III.A.9: contains kelp, rocky reef and sandy bottom

III.A.10: heavy commercial and recreational fishing occurs in this area

Socio-Economic Criteria:

III.B.4: possibly

III.B.6: spillover effects are likely

Management and Enforcement Criteria:

III.D.1: Will be adjacent to proposed SMR, which is adjacent to terrestrial parks, and existing Invertebrate Areas Special Closure at Año Nuevo

III.D.3: boundaries are square and simple

III.D.4: would eliminate bottom fishing, which has depleted black rockfish, among other species, allowing their habitats and therefore the species to recover

Evaluation and Research Criteria:

III.E.1: The area closer to shore—and proposed SMR—is already a popular research and public education site. It is assumed that this would extend further out to sea.

III.E.3: The existing Invertebrate Areas Special Closure at Año Nuevo and the proposed SMR have monitoring sites established. It is assumed this may also be occurring in this area too.

Does this site expand an existing MPA?

No, but will expand on proposed Año Nuevo SMR, and encompasses an existing ASBS.

Is this a replicate of another site? No.

Proposed regulations: Allows for pelagic troll only.

Goals and objectives for this MPA:

Overall goal is to provide protection for bottom fish, help rebuild depleted species, protect forage species important to seabirds and marine mammals, and protect feeding seabirds, particularly young birds from potential entanglement in nets.

Goal 2, Obj.1: Will help protect and rebuild populations of rockfish and bottom habitat

Goal 2, Obj.2: Help protect larval retention area and enhance reproductive capacity

Goal 2, Obj.3: By allowing catch of some surface species, this area will protect selected species while allowing catch of migratory pelagics

Goal 4: This is a natural heritage site with diverse and abundant marine mammals, sea birds, fish and other sea life. The SMCA will help protect prey species as well as bottom fish.

Species, habitats, populations, or ecosystem functions of concern, including threats:

Comprised of habitats representative of this depth range (10-35 fm) and section of the coast. Similar to those listed for the SMR including eelgrass beds, kelp, rocky and sandy bottom, also rockfish, persistent upwelling plumes and associated concentrations of productivity and foraging habitat. Specific species likely to benefit from combination of Año SMR and SMCA: Ashy storm petrel, Brandt's Cormorant, Brown pelican, Cassin's auklet, Marbled Murrelets, Pelagic cormorant, Pigeon guillemot, Rhinoceros auklet, Western gull. Southern sea otter, Steller's sea lion, harbor seal. Dungeness crab, limpets, little neck clams, moon snails, mussels, rock scallop, sea hares, sea stars, turban snails, worms, black and red abalone. May provide benefit to some rockfish species, including canary rockfish.

3. Sand Hill Bluff State Marine Reserve

Area meets the following California State Interagency Coordinating Committee Criteria:

I.A.2. protects representative habitats (shale beds with kelp)

A.3. Protects one or more species declared overfished (ling cod, and encompasses a canary rockfish hotspot identified in DFG's draft hotspot analysis)

A.4. protects populations of harvested species of concern (canary rockfish and many covered by Nearshore FMP)

A.5. includes habitat federally designated as EFH

A.6. will protect habitats under-represented in the existing MPA network

I.B.3 historic fishing pressure appears to have been less than nearby areas, but may be significant, nonetheless.

B.6. site is bordered by similar habitat which may benefit from spillover effects (area toward and around Natural Bridges is also shale beds with kelp).

I.C.3. the site has straight line boundaries (or state line) which are relatively easy to enforce.

C.4. SMR at this site would reduce the impact of human uses on nearshore rockfish and invertebrates, possibly other vulnerable species.

I.D.1 could provide opportunities for research and monitoring of a representative habitat.

D.2. through PISCO it will likely have funds for some types of ongoing nearshore monitoring

D.3 It has been the site of previous research under the PISCO program.

Does this site expand an existing MPA? No

Is this a replicate of another site? Yes, proposed Monterey Bay Shale Beds SMP. However, that area is proposed as a park, so will not meet the MLPA guidelines for replication in SMRs

Goals and objectives for this MPA Overall goal of this site is to protect representative habitats (shale beds, exposed headland) and the species that depend on them (Goals 4 and 1). This site meets Goal 1, particularly objectives 3, 4 and 5 (protect natural size and age structure, food webs and healthy ecosystems, and Goal 4, objective 2 (by protecting representative habitat such as shale beds with kelp). It also addresses Goal 5, objective 1, minimizing adverse socio-economic impacts, relative to a proposal at the biologically more suitable (more diverse, larval retention zone) but more heavily used Natural Bridges area. And it helps meet design consideration 4, including design considerations of the Nearshore Finfish FMP. As an SMR in representative habitat that meets the minimum size and maximum spacing guidelines, we believe it contributes to meeting Goal 6, network design.

Species, habitats, populations, or ecosystem functions of concern, including threats:

Mixture of low relief shale reef (i.e. sedimentary rocky reef) and sand, with kelp beds. Depth range 0-20 fathoms (0-37 meters). This site is representative of shale reefs and kelp forests found between Davenport and Santa Cruz. A marine reserve here would protect the area's natural ecological functions and help rebuild and protect economically important species such as canary rockfish, ling cod, blue, black, brown, China and copper rockfish. The site is in an area of relatively high fish and seabird density, and once supported large red abalone. A permanent PISCO monitoring site is located in the site, collecting nearshore monitoring data. This location reflects an effort to find a marine reserve with fewer impacts on squid fishermen, skiff anglers and spear fishermen than a site at Natural Bridges. The proposed SMR is at the within the SAT's recommended minimum size range.

4. Elkhorn Slough SMR

Area meets the following California State Interagency Coordinating Committee Criteria:

I.A.1 (includes numerous species of listed birds and marine mammals), 2 (representative as estuarine habitat also imperiled by tidal erosion and pollution), 6 (expands protection for eelgrass habitat (less than 1% of which is included in existing MPAs), 7 (provides comprehensive protection of estuarine species), 8 (important and productive nursery ground with high species diversity in spite of existing water quality problems), 9 (include mud flats, open channel, salt march and eelgrass).

I.B.1 (public access provided by kayak and at existing SMR and at Kirby Park), 2 (extensive interpretive programming at NERR), 3 (fishing is limited within the Slough itself but target

vulnerable species like sharks and rays, additional opportunities for shore fishing exist in immediately adjacent areas at Moss Landing Harbor and State Beaches), 4 (impacts limited to small number who fish in reserve or at Kirby Park –however, tissues of fish caught in the slough have high levels of pollutants thus it may not be a good place to fish anyway), 5 (enhancing protection of the Slough could improve its nonconsumptive values as a premier site for ecotourism, birding, wildlife viewing, etc. by protecting forage for these species, .6 (protecting nursery can result in “spillover” effect as more adults are produced that can later be fished). I.C.1 (expands existing SMR and includes within MBNMS, 2 (very visible site), 3 (very easy to understand boundary of “inside the bridge”), 4 (eliminates fishing pressure on Slough species that area already threatened by habitat loss and pollution,, 5 (access from land limited to Kirby Park), 6, 7 (NERR and MBNMS partners, also MLML and MBARI). I.D.1 (proximity to MLML and MBARI as well as NERR), 2 (extensive existing and historic research in the Slough, 3 (extensive monitoring already occurs in the area and areas is mapped at fine scale).

Does this site expand an existing MPA? Yes.

Is this a replicate of another site? Yes, Morro Bay SMR.

Goals and objectives for this MPA:

Overall goal is to provide more comprehensive protection for the important estuarine system of Elkhorn Slough including fish nursery grounds and roosting, forage, and haulout areas for birds and marine mammals including many species of concern.

Goal 1, Obj.1: protects northern anchovy, pacific herring, cabezon, halibut, sole, sanddabs, sharks, rays and many other fish species, along with a wide variety invertebrates (including gapers and fat innkeeper worms), as well as many migratory birds.

Goal 1, Obj.2: Protects estuarine, eelgrass, salt marsh, and mud flat habitats.

Goal 1, Obj.4: protects a natural breeding, foraging and roosting area and complex food web

Goal 3, Obj.1: current interpretive program at NERR; currently has extensive value as a premier nonconsumptive site for ecotourism, birding, wildlife viewing, kayaking, etc.

Goal 3, Obj.2: Extensive existing and historic research in the Slough; extensive monitoring already occurs in the area

Goal 4, Obj.1: representative as estuarine habitat

Goal 4, Obj.2: assuming protection in Morro Bay, replicates estuarine habitat

Habitats, populations, or ecosystem functions of concern, including threats:

- Includes depleted (statewide) eelgrass habitat that is currently severely underrepresented in existing MPAs.
- Includes salt marsh habitat at severe risk from tidal erosion (this habitat is disappearing, thus the remaining habitat is especially important).
- Mudflat invertebrate communities (includes 559 species). Collection of invertebrates for bait has reduced the average size of gapers and fat innkeeper worms in mudflats just inside Highway 1. Many species face severe competition from invasives thus protecting remaining populations from harvest is especially important.
- Spawning/nursery grounds for northern anchovy, pacific herring, cabezon, halibut, sole, sanddabs, sharks, rays, and many other fish species. Recreational fishing targeting sharks

and rays has historically resulted in harvest of gravid females raising sustainability concerns for these long-lived and slow reproducing species.

- Elkhorn Slough serves as breeding, forage and roosting area for over 250 species of birds including many migratory birds and listed species such as Brown Pelicans, Caspian Terns, etc. Important forage area for California sea otter.

Species likely to benefit: Crabs, ghost shrimp, moon snails, mud shrimp, mussels, sea hares, worms, gaper clams. Eelgrass and other intertidal species. Brown Pelicans, Double-crested Cormorant, Least Tern, Caspian Terns, Grebes, Loons, Red-necked Phalaropes. Harbor seal, southern sea otter. Bat ray, black surfperch, California halibut, English sole, leopard shark, pile surfperch, rainbow surfperch, shiner surfperch, starry flounder, surf smelt, top smelt, walleye surfperch, white surfperch.

5. Morro Cojo Slough

Same proposal as in Package 1 and 2

Expands estuarine habitats proposed for protection, and increases the number of proposals common to several packages.

Species likely to benefit: Snails. Eelgrass and other intertidal algal species. Surfperch. Brown Pelicans, Least Tern, Grebes, Loons, Red-necked Phalarope.

6. Soquel Canyon SMCA

Allowed fishing: recreational and commercial salmon and albacore trolling and commercial spot prawn trapping only.

Area meets the following California State Interagency Coordinating Committee Criteria:

III. I.A.1: bocaccio rockfish, listed as a candidate species under the Endangered Species Act, occurs here

A.2. protects outstanding representative of canyon habitat, and big, old fish refuge

A.3. groundfish listed as overfished inhabit this site, including bocaccio, canary, and yelloweye rockfish.

A.4. see I.A.3 above

A.5. this habitat is federally designated as essential fish habitat

A.6. will protect deep-water high relief canyon habitat, unrepresented in existing MPAs

A.7. will protect connections between shallow and deep habitats

A.8. the site is highly productive.

A.9. contains range of substrates and range of depths.

A.10. has received considerable fishing pressure.

III.B.4. socio-economic impacts will be limited because pelagic trolling, recreational and commercial, will be allowed;

B.6 restoration benefits may include spillover to nearby areas, due to protection of big old fish.

III.D.3: boundaries are square and simple;

D.4. designating this site would eliminate bottom fishing, allowing potentially fragile bottom dwelling organisms to recover.

III.E.1 and 3: Has CenCOOS monitoring sites and a history of submersible research that could provide the basis for before/after protection studies in signature Pacific coast ocean habitat--submarine canyon.

Does this site expand an existing MPA? No

Is this a replicate of another site? Replicates steep submarine canyon habitat of Partington Canyon complex, Point Sur Area. But this proposed area is an SMCA, so will not meet the MLPA guidelines for replication in SMRs (this would be an excellent site, based on biological characteristics, for an SMR).

Goals and objectives for this MPA: This area would primarily meet Goal 2, conserve and protect marine life populations and rebuild depleted bottom dwelling species. All three objectives apply--rebuilding depleted species; protecting larval sources and enhancing reproductive capacity; and protecting selected species while allowing catch of migratory species through SMCAs. It would also fill a gap in coverage of submarine canyons in the current MPA array, though it would not, as proposed, meet the guidelines calling for marine reserves in representative habitats. It would meet Goal 5, objective 1, minimize adverse socio-economic effects, but allowing surface trolling. Regarding protection of bottom fish and habitat, it may contribute to Goal 6, network design.

Habitats, populations, or ecosystem functions of concern, including threats: Site is an outstanding example of complex deep-water habitat that mixes varied depths and varied, high relief topography (rocky outcrops, vertical rock walls and soft sediment) capable of supporting a high diversity of fish and structure forming invertebrates. Depth range is 38-334 fathoms (70-611 meters). The proposed area includes most of one branch of Monterey Canyon, and serves as a natural refuge for rockfish as well as an important spawning area. Big old rockfish from depleted populations like canary, bocaccio and yelloweye have been observed in submersible surveys in this area. Fish here show signs of depletion, which could be addressed by making the site a conservation area that prohibits all bottom fishing, and allows only surface trolling for pelagics.

Species likely to benefit: Dungeness crab, market squid, sea stars, gorgonians, corals, sponges. Gray whale, harbor porpoise. Aurora rockfish, bank rockfish, bocaccio, canary, yelloweye, cowcod, greenspotted, greenstriped, canary, widow, bank, chilipepper, flag, rosy, speckled, starry, yellowtail, and vermilion rockfish, widow rockfish, lingcod.

7. Portuguese Ledge State Marine Reserve

Area meets the following California State Interagency Coordinating Committee Criteria:

I.A.1. good habitat for bocaccio rockfish, listed as a candidate species under the Endangered Species Act

A.2. protects representative canyon habitat, in an upwelling zone within a broader area historically abundant with fish

A.3. a number of groundfish listed as overfished could thrive at this site as big old adults, including bocaccio, canary (typical depth range 80-200 m), and yelloweye rockfish.

A.4. see I.A.3 above

A.5. this habitat is federally designated as essential fish habitat

A.6. this area will protect deep-water hard and soft-bottom habitat, currently unrepresented in existing MPAs

A.8. the site is highly productive due to upwelling, but has been depleted of big fish.

A.9. contains range of substrates and range of depths.

A.10. has received heavy fishing pressure; experienced local depletion of big old fish.

I.B.4 and 6. with bottom fish currently depleted in this location, commercial fishing trips are low compared to nearby; the area is part of the rockfish conservation area for recreational bottom fishing (see Maps 9, 12, 14); restoration benefits may include spillover to nearby areas.

I.D.3. boundaries are square and simple

D.4. designating this site would eliminate bottom fishing, allowing potentially fragile bottom dwelling organisms to recover.

I.E.1 and 3. Has CenCOOS monitoring sites and a history of submersible research that could provide the basis for before/after protection studies in canyon habitat, one of the quintessential westcoast habitat types.

Does this site expand an existing MPA? Not a state MPA, but it could extend the benefits of a nearby federal bottom fishing closure in similar terrain designed to protect groundfish essential fish habitat.

Is this a replicate of another site? No (possibly a unique site), but it complements the proposed Soquel Canyon SMCA, which encompasses higher relief canyon habitat.

Goals and objectives for this MPA:

This is a restoration site, aimed at protecting bottom fish and coupled benthic and pelagic offshore habitats (per Framework Guidelines) (Goals 1 and 2). It meets Goal 1, objective 3, 4 and 5—protect natural size and age structure in representative habitats, natural food webs, and ecosystem structure, function and processes; Goal 2, objectives 1, 2—help rebuild, enhance productivity of, and provide long-term protection for depleted groundfish and other vulnerable populations by creating a safe haven for large old highly prolific bottom-dwelling fish; and helps meet Goal 4 objective 2—protect representative habitat for their natural heritage value. It addresses Goal 5, objective 1—minimizing adverse impacts and optimizing benefits—by creating a reserve at a site that we believe is already closed to recreational bottom fishing at least part of the year through the RCA and that gets less commercial pressure than nearby areas because of its depleted condition. It contributes to Goal 6, network design, and fills a gap in the existing MPA system by creating a reserve in deep-water habitat.

Species, habitats, populations, or ecosystem functions of concern, including threats:

This site includes rocky reef interspersed with soft bottom substrate in a range of depths, from 48 to 112 fathoms (88-205 meters). It therefore fills a gap identified in the current system of MPAs by providing deepwater habitat—both rock and sand. It creates an SMR in a representative habitat type—submarine canyon—addressing another gap, and its location in canyon bench topography complements the high relief canyon habitat in the proposed Soquel Canyon SMCA. It is located within a larger area characterized by high fish density and seabird density and diversity. A long history of fishing activity and habitat surveys by submersibles indicate that the habitat in this site will support big old rockfish and other deep dwelling species. However, few large fish remain in the area today. That makes it likely this site can support rebuilding of

overfished rockfish and greater productivity of other species, if bottom fish food web and habitat are fully protected here over the long-term. It is also in an upwelling zone (see DFG Map 4). The hard substrate near its western (state waters) boundary supports vulnerable corals and other structure forming invertebrates that warrant protection.

Species likely to benefit: Aurora rockfish, bank rockfish, Boccacio, canary, yelloweye, cowcod, greenspotted, greenstriped, canary, widow, bank, chilipepper, flag, rosy, speckled, starry, yellowtail, and vermilion rockfish, widow rockfish, lingcod. Sole (Dover, English, petrale, rex, sand, slender), surfperch (shiner and walleye). Pacific sand dabs. Leopard shark. Common Murre, Rhinoceros auklet, Northern Fulmar, Shearwaters.

8. Monterey Shale Beds State Marine Park

Allowed fishing: Recreational fishing except for groundfish.

Area meets the following California State Interagency Coordinating Committee Criteria:

II.A.2. protects representative habitats (shale beds with kelp)

A.5. includes habitat federally designated as EFH

A.6. will protect habitats under-represented in the existing MPA network

II.B.6. site is bordered by similar habitat which may benefit from spillover effects

II.C.3. the site has straight line boundaries which are relatively easy to enforce.

C.4. likely to reduce the impact of human uses on nearshore rockfish.

II. D.1. site will provide opportunities for research and monitoring of a representative habitat.

D.2. through PISCO, funds may be available for some types of ongoing nearshore monitoring

D.3. It has been the site of previous research under the PISCO program.

Does this site expand an existing MPA? No

Is this a replicate of another site? Yes, Sand Hill Bluff proposed SMR, however, this proposed area is a park, so will not meet the MLPA guidelines for replication in SMRs

Goals and objectives for this MPA Overall goal of this site is to provide opportunities for enhanced recreation near population centers (Goal 3, objective 1), replicate representative habitat protection (shale beds, kelp, similar to Sand Hill Bluff) (Goal 4, objective 2 across a partial depth range and potentially Goal 3, objective 2) and help buffer the Ricketts Marine Reserve. It also meets Goal 5, objective 1, minimizing adverse socio-economic impacts, by allowing some kinds of recreational fishing and not going all the way to shore. It does not meet the SAT minimum size guidelines, but clustered with the Ed Ricketts and Hopkins SMRs, may provide some protection for invertebrates.

Species, habitats, populations, or ecosystem functions of concern, including threats:

Mixture of low relief shale reef and sand, representative of sedimentary rocky reef. This area serves as a rockfish nursery and provides juvenile fish habitat for deeply depleted species such as yelloweye and canary rockfish. The shale reefs off Del Monte provide habitat for vermilion, blue and copper rockfish and ling cod, both juveniles and adults. Supported a kelp forest until about 2003. It has boring clams and worms not found elsewhere in the region. A marine park here allowing recreational fishing could provide an opportunity to compare a reserve Sand Hill Bluff) and a park in similar habitats.

9. Edward F. Ricketts State Marine Reserve (and Hopkins State Marine Reserve)

This proposal incorporates the current Hopkins SMR as is, with no changes. The proposed Ricketts SMR would effectively expand this area. An analysis of Hopkins can be found in the MLPA Initiative's Evaluation of Existing Central Coast Marine Protected Areas (Draft v.2. November 4, 2005). Hopkins is one of the oldest MPAs in the state and well studied due to the adjacent research station.

Area meets the following California State Interagency Coordinating Committee Criteria:

I.A.2, protect representative sea life communities (rockfish, nearshore finfish);

A.3. protect populations declared to be overfished by NMFS (juvenile lifestages of bocaccio, canary and other depleted rockfish);

A.4. protect populations of harvested species of concern (various nearshore finfish);

A.5. protect areas federally designated as EFH (all waters at this depth are groundfish EFH);

A.8, the site is biologically productive;

A.9, the site contains sand, rock, kelp and structure forming invertebrates;

I.B.1, the site provides excellent public access, with frequently calm waters that are hospitable to divers

B.2, volunteer divers conduct regular fish surveys

B.3, recreational fishing occurs from the breakwater

B.4 and 5, Divers, the preponderance of traditional users, are likely to benefit from reserve status, while those who fish recreationally from the breakwater will have to go elsewhere. The economic effect of such changes, on balance, is likely to be positive.

I.C.1, site adjoins Hopkins site and is close to proposed shale beds site, facilitating enforcement

C.2, BayNet and Aquarium volunteers, other divers, and public presence will encourage stewardship and support enforcement

C.3. Boundaries use clear markers like breakwater, buoys.

I. D.3, Volunteer divers, through REEF, have done extensive monitoring of fish species in this area.

Is this a replicate of another site? No.

Goals and objectives for this MPA: Primary goal of this site is Goal 3, to improve recreational, educational and study opportunities provided by minimally disturbed ecosystems. It meets objective 1, ensuring that some MPAs are close to population centers and accessible; objective 3, developing collaborative monitoring linked to volunteer diver programs; and objective 4, protect or enhance recreational experience by ensuring natural size and age structure of marine populations. This area includes the most popular diving beach on the west coast (called the "hot spot" of west coast diving by the October 05 issue of Scuba Diver magazine), it hosts regular REEF fish surveys, is ideally located for educational activities and accessibility near the Monterey Bay Aquarium and Hopkins Research Station. The proposal also fulfills design consideration 7, taking advantage of ubiquitous wildlife watchers, the frequent presence of organized dive clubs, and the proximity to the aquarium and Hopkins to facilitate enforcement and monitoring. The area is also likely to help optimize benefits of MPAs per Goal 5, objective

1, by making diving even more popular at this site than it already is, providing the City of Monterey with associated lodging, meal and dive gear revenues.

Species, habitats, populations, or ecosystem functions of concern, including threats: The breakwater on one side of the proposed reserve serves as a nursery for diverse types of baby rockfish (including canary, bocaccio, and half-banded rockfish), as does Lover's Point on the other side. Diversity of adult sea life is also high; over 90 species of finfish have been identified in the area, including most of the 19 species covered by the Nearshore Finfish FMP. Ricketts provides valuable sea otter, seal lion and harbor seal habitat. The substrate is a mixture of rock and sand that supports persistent kelp, anemones and other structure forming invertebrates. Fishing on the breakwater currently creates a safety risk for divers who can get hooked; marine reserve status would reduce or eliminate that risk. One abalone farmer currently hand cuts kelp inside the proposed reserve.

Species likely to benefit: Giant kelp and other intertidal algal species. Limpets, little neck clams, moon snails, mussels, rock scallop, sea hares, sea stars, turban snails, worms. May provide some benefit to resident nearshore fish species and those with limited movement patterns such as:

Lingcod, black rockfish, black-and-yellow rockfish, blue rockfish, brown rockfish, cabezon, copper rockfish, grass rockfish, gopher rockfish, olive rockfish, kelp greenling, kelp rockfish, monkeyface prickleback, California halibut. Harbor seal, sea otter.

10. Pacific Grove State Marine Conservation Area

Fishing allowed: Commercial fishing for squid, sardines, herring, anchovy, mackerel and kelp. Recreational fishing for finfish only. No intertidal harvest.

Does this site expand an existing MPA? Yes, increases protection offered by existing SMCA.
Is this a replicate of another site? No.

Goals and objectives for this MPA: This area is intended primarily as an intertidal reserve with access for education (Goal 3, objective 1; Goal 4 objective 2, representative habitat). It helps meet Goal 5 objective 1 by allowing recreational fishing outside the inter-tidal zone. It serves as a buffer for Hopkins SMR and provides a reference site for scientific studies.

Habitat, species, threats: Has been an MPA since 1984, but regulations may not be sufficient to protect inter-tidal species and ecosystem functions. Very popular site for observation of marine wildlife, and scientific study. Monterey Peninsula is the northern end of the range for some southern fish and invertebrates.

11. Cypress Pinnacles State Marine Reserve

Does this site expand an existing MPA? No

Is this a replicate of another site? Yes, pinnacles are also included in the Point Lobos SMR. We also anticipate that pinnacles will be included to the north of Pigeon Point when that region is reviewed under the MLPA.

Goals and objectives for this MPA: This proposed site would protect key nearshore rockfish as well as representative habitats (pinnacles, rock walls) that supports diverse species. The reef near shore once supported huge lingcod and other groundfish, and thus serves as a potential recovery site for big fish. It addresses Goal 2, objectives 1 and 2 (rebuild and protect fish species), Goal 1 objectives 1 and 2 (high diversity habitat, diversity of habitats within proximity of each other) and Goal 4, objective 1 (protection of key habitat types). This area is close enough to the Carmel Bay SMP and Pt Lobos SMR that it is anticipated it will act in combination with those areas to protect some nearshore rockfish throughout their life history.

Species, habitats, populations, or ecosystem functions of concern, including threats:

Underwater pinnacles are one of the defining habitat types of the Pacific Coast. Rocky reef and walls are also a characteristic habitat. This area has been heavily fished, but retains important living habitat on the pinnacles themselves. The pinnacles and other structures attract and support rockfish and provide spawning grounds. Protection as an SMR would help make this area a safe haven for fish and living habitat.

Potential species: Sponges and corals. May provide some benefit to: Lingcod, black rockfish, black-and-yellow rockfish, blue rockfish, brown rockfish, China rockfish, cabezon, canary, copper rockfish, grass rockfish, gopher rockfish, olive rockfish, kelp greenling, kelp rockfish, vermilion rockfish, and monkeyface prickleback.

12. Carmel Bay State Marine Park

Allowed fishing: All recreational fishing except crustaceans and mollusks

Area meets the following California State Interagency Coordinating Committee Criteria:

- II.A.1. The proposed site in conjunction with the adjacent SMR at Point Lobos will protect a spacious natural system.
- A.2. Provides an example of outstanding submarine canyon, kelp forest, sandy bottom, and rocky reef habitat.
- A.3. This SMP would provide some protection to nearshore rockfish species.
- A.5. Protects submarine canyon, deepwater habitats and kelp forest habitats which are underrepresented in existing MPAs.
- A.6. Protects connections between intertidal, subtidal and deepwater and shallow water.
- A.7. This area is highly productive.
- A.8. Contains submarine canyon, rocky reef, rocky and sandy intertidal, kelp.
- C.2. Site has good public access.
- C.3. Site provides interpretive facilities (signage at State Beach).
- C.4. The proposed SMP will protect recreational small boat, kayak and spearfishing opportunities in an important area for recreational users.
- C.5. This area is used by extensively by spearfishermen and (Regional Profile Map 10 b) and kayak fishers from northern and southern California (Kayak Fishing Association of S.Ca)..
- C.7. The company that controls the existing leased kelp bed (the only commercial activities in this area) has recently closed their CA operation. Therefore, closing out this lease and making

the existing Carmel Bay SMCA into a SMP (with minor changes to the north and south) would not result in any significant adverse socio-economic impacts.

C.8. The SMP would enhance recreational opportunities, resulting in potential increases in recreational tourism revenues, etc.

B.9. Spillover could occur in similar habitat found to the north of the SMP in area that would remain open to fishing.

E.1. The area is adjacent to two proposed SMRs.

E.2. The site is highly visible and the Point Lobos docents and state park rangers could help with enforcement.

E.3. The boundaries are clear.

F.1. The area provides research opportunities to compare open areas to a recreational fishing only MPA to a SMR.

F.2. This area has been the subject of extensive DFG research (esp. sportfishing surveys).

F.3. The adjacent proposed SMR site at Point Lobos has been the subject of extensive monitoring and other research projects. PISCO has ongoing intertidal and subtidal monitoring sites in this area. Data from CenCal spearfish meets from 1960s to 2001 are available.

Does this site expand an existing MPA? Modifies existing MPA.

Is this a replicate of another site? Could serve as replicate of submarine canyon, but as an SMP, does not meet MLPA requirements for replication in SMRs.

Goals and objectives for this MPA: Primary objective is to protect hard bottom habitat across a depth range and into deep water (greater than 200 m), while maintaining recreational opportunities (goal 3). Addresses Gap Analysis identification of need for additional deep-water habitats, rocky habitats across depth ranges, pinnacles and submarine canyons. Modify existing MPA to improve protection.

Specifically, this site meets Goal 3: Objectives 1, 2 (adjacent Point Lobos SMR would provide comparison), 3 REEF divers do monitoring in this area. The site may meet Goal 4: Objectives 1 (submarine canyon head and pinnacles but not in marine reserve) & 2, and Goal 5: Objective 1 – modifying the existing SMP reduces socio-economic impacts as compared to establishing a new SMR. Siting an SMP in area with high recreational use and visitation increases positive socio-economic impacts for these users, but may provide limited species protection. This site also meets design considerations 2 (it contains areas that are within existing RCA), 3, 5 (within MBNMS and state park), 6, 7 (docents), 8, 9.

Species, populations, habitats, or ecosystem functions of most concern in this area?

Species of concern include southern sea, marine mammals, seabirds, high diversity of fish and invertebrates. Habitats included in MPA (but not fully protected as MPA is SMP and not SMR) submarine canyon, granitic rocky reef, kelp forest, sandy and rocky intertidal. Proposed MPA extends protection across all depth ranges identified by the SAT: 0-30 m, 30-100m, 100-200 m, >200 m. Park status for the canyon head creates a refuge for commercially fished spot prawns. Area is oceanographically complex due to proximity to Monterey Bay and Point Sur upwelling centers.

Threats:

The chief threats to this area are fishing and water pollution. Although some of the RCA closures provide some protection to deeper water habitats, these restrictions do not provide comprehensive or lasting protection. The Carmel Sewage Treatment Plant discharges nearby in Carmel Bay but the wastewater is treated to a tertiary level. Carmel Bay is an Area of Special Biological Significance.

Species likely to benefit: Since SMCA allows kelp harvesting and some recreational take, only invertebrates species such as mollusks and crustaceans likely to benefit.

13. Point Lobos State Marine Reserve

Area meets the following California State Interagency Coordinating Committee Criteria:

I.A.1, 2, 6, 7, 9. Protects sea otters, seabirds, marine mammals. As an existing SMR and State Park, the Point Lobos area is clearly recognized as an outstanding habitat. Protects deep water rocky reef, kelp forest, all depth zones, pinnacles and submarine canyon head – all are underrepresented in existing MPAs. Protects connections between all of the depth zones identified by the SAT including intertidal subtidal and deep and shallow water. Contains rocky reef, rocky and sandy intertidal, kelp and surfgrass, deep water rocky bottom, pinnacles and submarine canyon head.

I.B. Site currently including state reserve on land with public access, trails, etc. The existing park on land provides extensive educational and interpretive opportunities including signs, a visitor center, docents, tours, etc. The area receives far less fishing effort than the Monterey Peninsula or Carmel Bay (recreational). It includes recreational dive sites used mostly by nonconsumptive divers but also by some spearfishermen but does not include spearfishing competition sites. Spearfishing opportunities exist in the adjacent Carmel Bay. Recreational RCA and nontrawl RCA currently closes most of this area to many historic users who would not be impacted any further by this MPA. Improving protection at Point Lobos could enhance existing non-consumptive diving, wildlife viewing and general tourism values in the area. The terrestrial park at Point Lobos receives nearly 300,000 visitors a year. Point Lobos is a world renowned dive site. Providing enhanced protection of the marine ecosystem in this area could be expected to result in particularly high economic value for nonconsumptive recreation. Spillover could occur both to the north in the Carmel Bay (a major recreational fishing area) and to the south (also used by both recreational and commercial fisheries).

I.C. The area is adjacent to an existing protected area that includes both a land and sea component.

Homeowners could be educated to assist in reporting illegal activities. Docents at Point Lobos could also assist. Boundaries would be improved over existing SMR. Expanding the existing SMR would help protect sensitive seabirds, marine mammals, intertidal areas, etc., Beyond the existing SMR boundaries, the shoreline of the expanded SMR is in private ownership. Point Lobos SMR has an on-site ranger and docent presence. The existing Point Lobos SMR has ongoing management for the existing area, the area is also within the MBNMS.

I.D. 1-4. The area provides excellent research opportunities and opportunities to study deep water habitats relatively close to research institutions (at Hopkins, CSUMB, MBARI, etc). Many studies have been conducted in the Point Lobos area over the past decades, submersible dives have been conducted in the area. PISCO has ongoing intertidal and subtidal monitoring sites in this area) and the area has been mapped with sidescan sonar.

Does this site expand an existing MPA? Yes

Is this a replicate of another site? Area inside Carmel Bay provides some replication for Hopkins SMR and Ricketts SMCA.

Goals and objectives for this MPA

Overall Goal: Protect ecosystem integrity in representative high-value hard-bottom habitat of various types (bottom species coupled with pelagic food web) across a significant depth range (greater than 500 meters) (Goal 1).

Specifically, Goal 1: Objectives 1, 2, 3, 4, 5 (protect natural diversity and abundance, ecosystem health in high diversity habitat)

Goal 2: Objective 2 (help sustain and rebuild fish populations)

Goal 3: Objectives 1 (enhance nonconsumptive recreation), 2 (adjacent Carmel Bay SMP would provide comparison; open area south of SMR would provide fished area for comparison), 3 (existing program involves high school students in monitoring at Point Lobos), 4.

Goal 4: Objectives 1 (submarine canyon head and pinnacles) & 2.

Goal 5: Objective 1 -Expanding existing SMR reduces socio-economic impacts as compared to establishing a new SMR that meets the SAT Guidelines, allowing recreational fishing in adjacent Carmel Bay SMP also reduces socio-economic impacts, maintaining area south of new SMR to Point Sur open to fishing also reduces socio-economic impacts. Siting expanded SMR in area with high nonconsumptive use and visitation increases positive socio-economic impacts for these users. Objective 3 – Expanding existing SMR improves consistency with SAT Guidelines.

Goal 6: Helps meet network design guidelines by making Point Lobos SMR consistent with Framework size guidelines, offshore extent, etc. Addresses Gap Analysis need for additional deep-water habitats, rocky habitats across depth ranges, pinnacles and submarine canyons.

Finally, expansion of existing MPA facilitates efficient management.

Species, habitats, populations, or ecosystem functions of concern, including threats:

Species of concern include southern sea otters (high density area provides forage and shelter), marine mammals (several haulouts and a rookery in the area), seabirds colonies over 200 species have been identified at Point Lobos and the area is in the top 20th percentile for seabird density and diversity. The area also provides habitat for a high diversity of fish and invertebrates including large rockfishes, lingcod, cabezon and greenlings and is in the top 20th percentile for fish density. Habitats protected include granitic rocky reef, kelp forest, surfgrass, pinnacles, sandy and rocky intertidal, and submarine canyon head. Extends protection across all of the depth ranges identified by the SAT: 0-30 m, 30-100m, 100-200 m, >200 m.

Chief threats and proposed restrictions

The chief threats to this area are fishing and water pollution. The existing SMR at Point Lobos is too small to provide adequate protection to the full range of species using this area and provides no protection to deeper water habitats. Although some of the RCA closures provide some protection to deeper water habitats, these restrictions do not provide comprehensive or lasting protection. The Carmel Sewage Treatment Plant discharges nearby in Carmel Bay but the wastewater is treated to a tertiary level. There is likely some septic system related discharges that may affect the nearshore in this area, however, there has been a recent focus on connecting

septic systems in this area into the sewage treatment facility (at Point Lobos State Park and the residential/hotel area of Carmel Highlands) so many historic water quality issues are currently being improved.

Species likely to benefit: Lingcod, black rockfish, black-and-yellow rockfish, blue rockfish, brown rockfish, China rockfish, cabezon, copper rockfish, grass rockfish, gopher rockfish, olive rockfish, kelp greenling, kelp rockfish, vermilion rockfish, monkeyface prickleback. Market squid. Limpets, little neck clams, moon snails, mussels, rock scallop, sea hares, sea stars, turban snails, worms. Southern sea otter, harbor seal. Brandt's cormorant, Brown pelican, Double-crested Cormorant, Pelagic Cormorant, Loons, Scoters.

Giant kelp, other intertidal algae.

14. Point Lobos State Marine Conservation Area

Does this site expand an existing MPA? Yes, Point Lobos SMR

Is this a replicate of another site? May have similarities to proposed Big Creek SMCA.

Fishing allowed: salmon trolling and commercial spot prawn trapping only

Goals and objectives for this MPA: Protect ecosystem integrity in representative high-value hard-bottom habitat of various types (bottom species coupled with pelagic food web) across a significant depth range (greater than 500 meters) (Goal 1).

Specifically, Goal 1: Objectives 1, 2, 3, 4, 5 (protect natural diversity and abundance, ecosystem health in high diversity habitat) fairly high level of protection should protect coupling between forage and prey species.

Goal 2: Objective 2 (help sustain and rebuild fish populations)

Goal 3: Objectives 1 (may enhance nonconsumptive recreation), 2.

Goal 4: Objectives 1 & 2.

Goal 5: Objective 1 –Creating SMCA adjacent to existing SMR meets SAT guidelines for MPAs to 3 mile line, while reducing socio-economic impacts as compared to establishing an SMR over that area. Objective 3 – Expanding existing SMR improves consistency with SAT Guidelines.

Goal 6: Helps meet network design guidelines by extending protection to 3-mile line. Addresses Gap Analysis need for additional deep-water habitats, rocky habitats across depth ranges.

Species likely to benefit: Southern sea otter, harbor seal. Gorgonians, corals and sponges. Bocaccio, canary, yelloweye, cowcod, greenspotted, greenstriped, canary, widow, bank, chilipepper, flag, rosy, speckled, starry, yellowtail, and vermilion rockfish, lingcod. Brandt's cormorant, Brown pelican, Double-crested Cormorant, Pelagic Cormorant, Loons, Scoters.

15. Big Sur State Marine Reserve

Area meets the following California State Interagency Coordinating Committee Criteria:

I.A.1. protect rare native species (hydrocorals and other structure forming invertebrates)

A.2. protect outstanding and representative communities, habitats and ecosystems

A.3. help protect overfished groundfish

A.5. Protect habitats federally designated as EFH (covers all waters in this depth range)

A.6. protect biological communities that are under-represented in the existing network (canyon heads, deep water habitats, hydrocorals and other structure forming invertebrates)

A.7. protect connections between habitat types, deep and shallow water, intertidal and subtidal.

A.8. site is biologically highly productive (upwelling, high species abundance in places)

A.9. contains multiple habitat types (see below)

I.B.3 proposed site historically received less fishing effort than many areas, due to factors like relative inaccessibility, wind and weather, but has been affected by fishing.

I.C.3. Boundaries are straight lines or state waters boundary

C.4. A reserve at this site would help protect fragile corals and other structure forming invertebrates from damage

C.5 site provides little access from land

I.D.3. contains a PISCO monitoring site that provides data for previous and ongoing research

Does this site expand an existing MPA? No

Is this a replicate of another site? Parts of it are a potential replicate of the proposed Soquel Canyon site with respect to protection of deep-water canyon habitats, but Soquel is an SMCA, so doesn't meet MLPA requirements for replication in SMRs.

Goals and objectives for this MPA. Big Sur SMR is a top candidate for meeting Goal 1, protect the natural diversity and abundance of marine life and the integrity of marine ecosystems, due to its size, level of protection, diverse habitats, and biological and spatial connection of the area near Point Sur to very diverse habitats in contiguous federal waters. It potentially addresses objectives 1 and 2 (protect areas of high species diversity and diverse habitat types), 3, 4 and 5 (protect natural size and age structure, food webs and healthy ecosystems). It is likely to help meet various Goal 2 objectives (protect, rebuild fisheries). An SMR at this site—which stands out for its beauty, diversity, and unique mix of features, would also help meet Goal 4, protecting marine natural heritage, including representative and unique habitats, for their intrinsic value. By meeting the size, spacing, representative habitat and other guidelines, it helps meet Goal 5 objective 2 and Goal 6, network design. It is also likely to meet several design considerations, including preventing fishing effort shifts that could cause serial depletion (3); addressing nearshore FMP design considerations (4); abutting land parks which facilitates enforcement (7) and taking advantage of long-term monitoring (PISCO site in area) (9). It also meets a gap in the current system for SMRs at or above the high end of the minimum size guidelines.

Species, habitats, populations, or ecosystem functions of concern, including threats:

Pinnacles, kelp and important dive spots in this area. Habitat consists of rocky reef, soft bottom, and extensive deep- and shallow-water reef with giant hydrocoral trees, submarine canyon heads and deeper canyon habitat making up a mosaic of high relief habitats, and rocky intertidal interspersed with sand. It is female sea otter habitat and supports diverse communities of large rockfish. Hurricane Point is a murre breeding area. Point Sur is an upwelling area with unique gyre effects (moving both north and south from the point). However, because the site is below the point, there may be retention of larvae there, helping sustain populations in the site. A long-term PISCO monitoring site exists off Andrew Molera State Park. While fishing is lighter here than on much of the coast (winds are common and area is far from ports), some rockfish found here are part of depleted populations, and species like hydrocorals are fragile. The Julia Pfeiffer Burns SMCA has been studied as a potential underwater park because of its exceptional habitat,

biodiversity and scenic features; it received the top rating for scenic value. The most persistent kelp bed in the state is found here. We are open to parts of this site allowing spot prawn trapping¹ to avoid the significant impact this site could have on a small number of fishermen, but our goal is to provide full protection to the ecosystem in this extraordinary area.

Species likely to benefit: Lingcod, black rockfish, black-and-yellow rockfish, blue rockfish, brown rockfish, cabezon, China rockfish, copper rockfish, grass rockfish, gopher rockfish, olive rockfish, kelp greenling, kelp rockfish, vermilion rockfish, monkeyface prickleback, bocaccio, canary rockfish, yellowtail rockfish, yelloweye rockfish. Cassin's auklet, Common murre, pelagic cormorant, pigeon Guillemot, western gull. Giant kelp and other algal species. Sole (Dover, English, petrale), sand dab. Market squid, Dungeness crab, sea stars, spot prawns, worms. Ashy Storm-Petrel, Brandt's cormorant

16. Big Creek State Marine Reserve

This proposal expands the existing Big Creek SMR to meet the minimum shoreline span recommended by the SAT. A draft analysis of the existing Big Creek site can be found in the MLPA Initiative's Evaluation of Existing Central Coast Marine Protected Areas (Draft September 28, 2005). This analysis suggests that expanding the size of this area could make it more effective.

Goals and Objectives: Overall purpose is to allow continuing research in a minimally disturbed area (Goal 3, obj. 2).

Habitats, populations, or ecosystem functions of concern, including threats:

Sandy and rocky intertidal, soft and hard bottom subtidal, giant kelp and surfgrass beds. Many wash rocks and pinnacles boulders. Majority of subtidal is sand.

Species likely to benefit: Home to many rockfish, including some depleted species. Lingcod, black rockfish, black-and-yellow rockfish, blue rockfish, brown rockfish, cabezon, China rockfish, copper rockfish, grass rockfish, gopher rockfish, olive rockfish, kelp greenling, kelp rockfish, vermilion rockfish, monkeyface prickleback, bocaccio, canary rockfish, yellowtail rockfish, yelloweye rockfish. Sole (Dover, English, petrale), sand dab. Market squid, Dungeness crab, sea stars, spot prawns, worms. Gorgonians, corals and sponges. Brandt's cormorant, Common murre, Scoters, fulmars. Giant kelp and other algal species. Grey whale, harbor porpoise and southern sea otters.

17. Big Creek State Marine Conservation Area

Fishing allowed: recreational and commercial salmon trolling and commercial spot prawn trapping.

¹ We consider this exception based on facts that this is a limited entry, clean fishery with low intensity that takes place in a very limited fathom zone.

This proposal creates an SMCA adjacent to the existing Big Creek SMR and extending to the state 3-mile line.

Goals and Objectives: Overall purpose is to address the potential need to expand the Big Creek SMR to make it more effective at supporting various species and ecological processes, while allowing some uses in this SMCA to reduce socio-economic impacts. (Goals 1 and 5). To protect and support big fish, the area would probably need to be increased further in coastline extent, though its proximity to the proposed Big Sur SMR may provide some benefits to fish. It addresses Goal 4 by including more depths and habitat types, including canyon, and providing better trophic structure. Meets design consideration 1 (remote area); 2 (much of area is within the non-trawl RCA); 4 (meets design criteria of NSFMP); 5 (within MBNMS); 6 (has the advantage of a land-based manager), and 8 (baseline monitoring data available for SMR, and has water quality and PISCO monitoring sites nearby).

Habitats, populations, or ecosystem functions of concern, including threats:

Sandy and rocky habitat, boulders, canyon head. Home to many nearshore and deeper water rockfish

Species: Bocaccio, canary, yelloweye, cowcod, greenspotted, greenstriped, canary, widow, bank, chilipepper, flag, rosy, speckled, starry, yellowtail, and vermilion rockfish, lingcod. Sole (Dover, English, petrale), sand dab. Worms, gorgonians, corals and sponges. Brandt's cormorant, Common murre, Scoters, fulmars. Grey whale.

18. Piedras Blancas State Marine Reserve

Area meets the following State Interagency Coordinating Committee Criteria:

I.A.2. Provides an example of outstanding kelp forest and rocky inter-tidal, pinnacles, rocky reef habitat.

I.A.6. Protects mid-depth rocky reef, under-represented in existing MPAs and 2 types of kelp forest habitat

I.A.7. Protects connections between inter-tidal, subtidal and mid-depth and shallow water.

I.A.8. This area is highly productive, with rich food web.

I.A.9. Site contains rocky reef, rocky and sandy inter-tidal, and kelp habitats.

I.A.10. populations of nearshore species could be expected to rebound if this area was protected.

I.B.6. Spillover could occur

I.C.4. The SMR would help protect marine mammals, intertidal areas, etc.

I.D.1. The area provides excellent research opportunities and opportunities to study outstanding kelp forest, rocky reef, and rocky intertidal habitats marine habitats.

Does this site expand an existing MPA? No.

Is this a replicate of another site? Some similarities to Pt. Buchon SMR

Goals and Objectives: Overall objective is to provide full protection for a particularly diverse lush and diverse ecosystem, as well as protect and restore the natural size and age structure of resident fish (Goals 1 and 2). Potentially meets Goal 1, all objectives; Goal 2, objective 1 and 2;

Goal 4, objective 2 (representative habitats); Goal 5 (objective 2, meet guidelines) and Goal 6, network design (meets size and spacing guidelines, etc).

Habitat, species, threats: Extraordinarily rich biologically, with both types of kelp assemblage, extensive offshore and inter-tidal rocky reef across a depth range (0-54 fm); marine mammal populations including new elephant seal haulout and northern fur seals. Nearshore and some deepwater rockfish species frequent this area. This area has been historically fished by live fish and CPFV fisheries. Prominent point and eddies attract coastal pelagics, creating rich food web. Some larval retention likely in lee of point. A marine reserve could restore natural size and age structure of some fish populations and provide a good source of larvae for Cambria MPAs. Subtidal surveys have been conducted there.

Species likely to benefit: Lingcod, black rockfish, black-and-yellow rockfish, blue rockfish, brown rockfish, cabezon, copper rockfish, grass rockfish, gopher rockfish, olive rockfish, kelp greenling, kelp rockfish, vermilion rockfish, monkeyface prickleback, Scorpionfish, Dover sole, rex sole, sand dab. Pigeon guillemots, western gulls, Brandt's cormorant, pelagic cormorant, rhinoceros auklets, scoters, brown pelicans, shearwaters, fulmars, red-necked Phalaropes. Limpets, mussels, sea stars, turban snails, worms. Southern sea otters, Gray whale, Steller's sea lions, harbor seals, harbor porpoise. Bull kelp, Giant kelp, other intertidal algal species, surfgrass, sea palm, rock weeds

19. Cambria State Marine Park

Allowed activities: All recreational fishing

Area meets the following California State Interagency Coordinating Committee Criteria:

II.A.1. The proposed site in conjunction with the adjacent SMR will protect a spacious natural system (approximately 6 miles of coastline out to 2-3 miles from shore).

A.2. Provides an example of outstanding kelp forest and rocky intertidal, rocky reef habitat.

A.3. This SMP would provide some protection to nearshore rockfish species.

A.5. Protects mid-depth rocky reef and kelp forest habitats which are underrepresented in existing MPAs.

A.6. Protects connections between intertidal, subtidal and mid-depth and shallow water.

A.7. This area is highly productive.

A.8. Contains rocky reef, rocky and sandy intertidal, kelp.

A.9. This area was heavily targeted by the livefish fishery and anecdotal evidence suggests the area has been depleted by this pressure. This area may be fished several days a week by CPFV boats.

II.C.2. Site has good public access including a small boat access point (Leffingwell Landing).

C3. Lampton Park could provide interpretive facilities for this SMP and the adjacent SMR (signage).

C.4. The proposed SMP will enhance recreational small boat, kayak and spearfishing opportunities in an important area for recreational users.

C.5. This area is used by spearfishermen (Regional Profile Map 10 b) and kayak fishers from northern and southern California (Kayak Fishing Association of S.Ca).

C.6. Compared to areas closer to Morro Bay and Port San Luis this area has received less heavy fishing effort (Regional Profile Maps 8&9).

C.7. Commercial fishermen would still have access to similar habitat to the north of the proposed SMP as well as miles of similar habitat to the south of the proposed SMP. The proposed SMP would extend only to the 2-mile line to allow commercial salmon fishing that occurs offshore in this area.

C.8. The SMP would enhance recreational opportunities resulting in potential increases in recreational tourism revenues, etc.

C.9. Spillover could occur in similar habitat found to the north of the SMP which would remain open to fishing.

II.E.1. The area is adjacent to a proposed SMR.

E.2. The site is adjacent to the town of Cambria where many ocean front residents are retirees with an active stewardship ethic and spotting scopes on their decks.

E.3. Boundaries are clear.

E.4. The SMP would help protect depleted rockfish, marine mammals, intertidal areas, etc.

F.1. The area provides excellent research opportunities to compare open areas to a recreational fishing only MPA to a SMR with similar habitats.

F.2. Due to the presence of the UC Reserve, this area is a focal point for research and monitoring and will continue to be in the future.

F.3. The adjacent proposed SMR site is used by various UC campuses for a variety of monitoring and other research projects. PISCO has ongoing intertidal and subtidal monitoring sites in this area. The MARINE program has a study site within the proposed SMR that monitors species of algae and invertebrates. DFG has baseline data on fish abundance in this region from periodic research cruises since 1982 and from CenCal spearfish meets in the 1990s.

Does this site expand an existing MPA? No.

Is this a replicate of another site? Yes, the Cambria SMR and Point Bouchon SMR (for comparing SMR to SMP to assess impacts of recreational fishing.)

Goals and Objectives of this MPA

Overall Park goal is to enhance recreational and study opportunities, allow for recovery of area depleted by overharvest by commercial livefish fishery and provide replicate of SMR in SMP to allow for comparison of fished and unfished areas with similar habitats.. Goal 3: Objective 1, 2, 3. Goal 5: Objective 1 (promotes recreational benefits while limiting impacts to commercial by siting offshore boundary to allow salmon fishing), 3 (size of proposed SMR and SMP combined may meet SAT Guidelines). See Cambria SMR description for species, habitats and threats.

Species likely to benefit: Since recreational take is allowed, species are less likely to benefit than from SMR. Species that are not targeted by recreational fishing (such as market squid, benthic invertebrates and giant kelp) will benefit.

20. Cambria State Marine Reserve

Area meets the following California State Interagency Coordinating Committee Criteria:

I.A.1. Protects black abalone, sea otters, seabirds, marine mammals.

I.A.2. Provides an example of outstanding kelp forest and rocky intertidal, rocky reef habitat.

- I.A.6. Protects mid-depth rocky reef and kelp forest habitats that are underrepresented in existing MPAs.
- I.A.7. Protects connections between intertidal, subtidal and mid-depth and shallow water.
- I.A.8. This area is highly productive.
- I.A.9. Contains rocky reef, rocky and sandy intertidal, kelp.
- I.A.10. This area was heavily targeted by the livefish fishery and anecdotal evidence suggests the area has been depleted by this pressure.
- I.B.1. Site abuts a University of California terrestrial reserve on land with access by permission only.
- I.B.2. The existing UC Reserve provides extensive educational and particular research opportunities and regularly hosts university students, researchers, etc...
- I.B.4. Given the small amount of shoreline contained in the proposed SMR and the fact that the site is surrounded by similar habitat to the both and south, recreational and commercial fishermen would have access to alternative sites in the immediate vicinity.
- I.B.6. Spillover could occur in similar habitat found both to the north into the proposed SMP and to the south in areas outside of MPA protection.
- I.C.1. The area is adjacent to an existing terrestrial reserve with a full-time, on-site manager.
- I.C.2. The site is adjacent and just to the south of the town of Cambria where many ocean front residents are retirees with an active stewardship ethic and spotting scopes on their decks.
- I.C.3. Boundaries are clear.
- I.C.4. The SMR would help protect marine mammals, intertidal areas, etc.
- I.C.5. Access is controlled by the on-site UC Reserve manager and limited to research and educational purposes.
- I.C.6. The on-site UC Reserve manager would provide in kind resources for enforcement assistance –reporting of any illegal activities.
- I.C.7. The mission of the UC Reserve is to advance scientific study and research thus there will be in-kind resources focused on encouraging monitoring of the SMR.
- I. D.1. The area provides excellent research opportunities and opportunities to study outstanding kelp forest, rocky reef, and rocky intertidal habitats marine habitats.
- I.D.2. Due to the presence of the UC Reserve, this site is a focal point for research and monitoring and will continue to be in the future.
- I.D.3. The site is used by various UC campuses for a variety of monitoring and other research projects. PISCO has ongoing intertidal and subtidal monitoring sites in this area. The MARINE program has a study site within this proposed SMR that monitors species of algae and invertebrates. DFG has baseline data on fish abundance in this region from periodic research cruises since 1982.

Does this site expand an existing MPA? No

Is this a replicate of another site? Yes, Point Buchon SMR

Goals and objectives for this MPA Overall goal of this site is to incorporate and replicate representative habitats (including underrepresented habitats) and the species that depend on them in an area that fully protects the ecosystem (Goal 1). This site may need to be bigger to meet Goal 1, objectives 1, 3, 4 and 5 (protect natural size and age structure, food webs and healthy ecosystems. It meets Goal 2, objective 2 by protecting reproductive capacity. It meets Goal 3, objectives 1, 2 and 4, and Goal 4, objective 2 by protecting representative habitat (kelp, rocky

intertidal and subtidal). It also meets Goal 5, objective 1, minimizing adverse socio-economic impacts because it is sited relatively far away from Morro Bay and maintain open access to miles of similar habitat that is located closer to the harbor. In conjunction with the proposed adjacent SMP, it meets Goal 5, objective 3 by providing an MPA that meets the SAT guidelines for size. And it helps meet design consideration 3 (plenty of exiting area with similar habitat occurs outside the MPA in the immediate vicinity), 4 (meets several of the design considerations in the Nearshore FMP), 6, 7 (use of UC students as volunteer researchers), 8, and 9. Together with the Cambria SMP, it helps meet Goal 6.

Habitats, populations, or ecosystem functions of concern, including threats:

Protects two of depth ranges identified in the Master Plan Framework (0-30 and 30-100 meters). Mixture of rocky intertidal, sandy beach, and hard and soft bottom, with kelp beds.

The chief threat to this area is recreational and commercial fishing. Some kelp harvesting may also occur in the area. The area has been heavily targeted by the live fish fishery in recent years. Area is a common CPFV stop. Because of the area's remote and rural location it is unlikely to face any other significant threats. The UC Reserve results in an extremely low impact adjacent land use that does not present any water quality threats.

Species likely to benefit: offshore rocks serve as marine mammal haulouts. Contains all 19 of the nearshore fish species except scorpionfish. Lingcod, black rockfish, black-and-yellow rockfish, blue rockfish, brown rockfish, cabezon, copper rockfish, grass rockfish, gopher rockfish, olive rockfish, kelp greenling, kelp rockfish, vermilion rockfish, monkeyface prickleback, Dover sole, English sole, leopard shark, petrale sole, sand dab, starry flounder, wolf eel. Surfperch, rubber lipped perch, pile surfperch, shiner surfperch, and walleye surfperch. Starry flounder, surf smelt, top smelt, white croaker. Southern sea otter, harbor porpoise, Steller's sea lion, harbor seals. Brandt's cormorant, brown pelican, pelagic cormorant, pigeon guillemot, scoters. Giant kelp, bull kelp, sea palm, other intertidal algae and surfgrass. Limpets, mussels, sea stars, turban snails, worms

21. Morro Bay Estuary State Marine Reserve

Does this site expand an existing MPA? No

Is this a replicate of another site? Yes, Elkhorn Slough.

Species: Worms. Kelp greenling, kelp rockfish, longnose skate, monkeyface prickleback, pile surfperch, rainbow surfperch, rubber lip perch, sand sole, shiner surf perch, starry flounder, striped surf perch, top smelt, surf smelt, white croaker, white surfperch, wolf eel. Eelgrass, other intertidal algae. Brandt's cormorant, brown pelican, common murre, double-crested cormorant, least tern, Rhinoceros auklet, pelagic cormorant, pigeon guillemot, grebe, scoters. Southern sea otters.

22. Morro Bay South State Marine Reserve

Goals and objectives for the Morro Bay SMRs:

Overall purpose is to protect the tidal marsh on the eastern side of the Bay and some of the key eelgrass habitat in the south (Goal 4). Morro Bay is part of the National Estuary Program and contains a state park and a heron rookery, making it an excellent site for education, monitoring, and cross-jurisdictional management. An SMR is also likely to meet Goal 3, objectives 1 and 2, relating to education.

Species, habitats, populations, or ecosystem functions of concern, including threats:

This area serves as important feeding habitat for coastal seabirds and offers shelter to juvenile fish, including steelhead. It is one of the largest undeveloped coastal wetlands in California and meets the goal of protecting rare habitat types. This area offers substantial non-consumptive recreational value to kayakers and bird-watchers. This SMR includes the drainages to Chorro and Los Osos Creeks. Detailed information about the habitats and species of the Morro Bay estuary can be found in the National Estuary Program's [Management Plan](#). While fishing pressure in the back part of Morro Bay is relatively low, the unique nature of the area warrants protection as a reserve.

Species: See above

23. Point Buchon State Marine Reserve

Area meets the following California State Interagency Coordinating Committee Criteria:

- I.A.1. Protects black abalone, sea otters, seabirds, marine mammals, rare shallow water populations of hydrocoral.
- I.A.2. Provides an example of outstanding kelp forest and rocky intertidal, pinnacles, rocky reef habitat.
- I.A.6. Protects pinnacles, mid-depth rocky reef and kelp forest habitats which are underrepresented in existing MPAs.
- I.A.7. Protects connections between intertidal, subtidal and mid-depth and shallow water.
- I.A.8. This area is highly productive.
- I.A.9. Site contains pinnacles, rocky reef, rocky and sandy intertidal, and kelp habitats.
- I.A.10. This area was heavily targeted by the live fish fishery – populations of nearshore species could be expected to rebound if this area was protected.
- I.B.4. By ensuring that half of the area between Avila and Point Buchon remains open to fishing, current users can divert effort to the open area.
- I.B.6. Spillover could occur in similar habitat found both to the north into the proposed SMP and to the south in areas outside of MPA protection.
- I.C.1. The area is adjacent to the Diablo Power Plant Security closure providing a full-time, on-site enforcement presence.
- I.C.3. By using the points (Buchon or San Luis) and the power plant as the boundaries, the extent of the SMR would be very clear.
- I.C.4. The SMR would help protect marine mammals, intertidal areas, etc.
- I.C.5. There is no direct access by land.
- I.C.6. The Diablo Power Plant management may provide enforcement assistance –reporting of any illegal activities.

I.C.7. The ongoing monitoring required for the Diablo Power Plant serves as an in-kind resource for ongoing monitoring, the Power Plant has also offered the state mitigation funds to be used for reserve management.

I.D.1. The area provides excellent research opportunities and opportunities to study outstanding kelp forest, rocky reef, and rocky intertidal habitats marine habitats.

I.D.2. Due to the presence of power plant, extensive monitoring has been done in this area and will continue to be funded and performed in the future. Past research and data sets include a comprehensive marine biological and oceanographic study that included both subtidal and intertidal studies to identify and enumerate fishes, invertebrates, surfgrasses, and algae. This data covers over two decades.

I.D.3. The power plant has ongoing subtidal monitoring sites in this area and will be required to continue regular monitoring over the lifetime of the facility.

Does this site expand an existing MPA? No

Is this a replicate of another site? Yes, Cambria SMR.

Goals and Objectives for this MPA: Overall goal is to provide ecosystem protection to a mosaic of representative and rare habitats and their associated marine life (Goal 1). This MPA addresses the Gap Analysis identification of need for additional pinnacles, kelp forest, rocky habitats across depth ranges. The site meets Goal 1, particularly objectives 1, 3, 4 and 5 (protect natural size and age structure, food webs and healthy ecosystems); Goal 2, objective 2 (by protecting reproductive capacity); Goal 3, objectives 1,2 and 4; and Goal 4, objective 1 (pinnacles) and objective 2 (representative kelp, rocky intertidal and subtidal). It also meets Goal 5, objective 1, minimizing adverse socio-economic impacts because it maintain open access to miles of similar habitat to the north of Morro Bay for users from that harbor and allows open use of the area between Point San Luis and the power plant to ensure access to users coming from Post San Luis and Avila. It meets Goal 5, objective 3 by providing an MPA that meets the SAT guidelines for size. And it helps meet design consideration 3 (existing area with similar habitat occurs outside the MPA in the immediate vicinity), 4 (meets several of the design considerations in the Nearshore FMP), 6, 7, 8, and 9. It is likely to contribute to Goal 6, network design.

Habitats, populations, or ecosystem functions of concern, including threats:

This area contains pinnacles, intertidal, kelp forest and interspersed sandy and rocky reef habitat, and associated marine life communities including hydrocorals (to 49 meter depth). Species of concern include southern sea otters, marine mammals and seabirds. This area is within a hotspot for fish density as identified by NOAA Biogeographic Assessment. Over 800 taxa have been documented in this area by studies performed by Tenera Environmental as part of the Diablo Canyon Power Plant licensing requirements. Habitats protected include pinnacles, shallow populations of hydrocoral, rocky reef, sandy bottom, kelp forest, offshore rocks and rocky intertidal. Extends protection across two of the depth ranges identified by the SAT: 0-30 m, 30-100m.

There are two significant threats to marine life in the immediate vicinity of this proposed MPA – the area has experienced heavy fishing pressure, and the Diablo Canyon Power Plant produces entrainment impacts and thermal discharge. In spite of the proximity of the power plant, marine scientists identify this area as one of the highest quality rocky reef and kelp habitats in the

Central Coast Study Area. Conversion of the power plant from once-through to dry cooling could dramatically reduce entrainment and thermal discharge impacts associated with the plant.

Species: Worms. Kelp greenling, kelp rockfish, longnose skate, monkeyface prickleback, pile surfperch, rainbow surfperch, rubber lip perch, sand sole, shiner surf perch, starry flounder, striped surf perch, top smelt, surf smelt, white croaker, white surfperch, wolf eel. Eelgrass, other intertidal algae. Brandt's cormorant, brown pelican, common murre, double-crested cormorant, least tern, Rhinoceros auklet, pelagic cormorant, pigeon guillemot, grebe, scoters. Southern sea otters, harbor porpoise, short-beaked common dolphin Brown pelicans, scoters, grebe, shearwaters, and fulmars.

24. Point Buchon State Marine Conservation Area

Allowed activities: Salmon and albacore trolling, commercial and recreational.

By extending Point Buchon SMR out to the state waters boundary, this SMCA provides more deep-water sand habitat and brings the size of the combined Point Buchon MPAs to within the SAT's recommended minimum size guidelines.

Species likely to benefit: Corals and sponges, market squid, moon snails, sea hares, sea stars, worms. Lingcod, black rockfish, black-and-yellow rockfish, blue rockfish, brown, rockfish, cabezon, copper rockfish, grass rockfish, gopher rockfish, olive rockfish, kelp greenling, kelp rockfish, vermilion rockfish, monkeyface prickleback, Scorpionfish. California halibut, California skate, sand dab. Brown pelicans, scoters, grebe, shearwaters, and fulmars.

25. Pt. Sal State Marine Reserve

Area meets the following California State Interagency Coordinating Committee Criteria:

I.A.1: Will protected endangered brown pelican, California sea otter, several species of rockfish, along with kelp bed habitat.

I.A.2: Potential larval retention zone; kelp bed and forage areas

I.A.4: Will protect several species of rockfish, some of which are overfished (black, blackgill, blue bocaccio, brown, chilipepper, China copper, cowcod, darkblotched, grass, greenspotted, kelp, olive, starry, treefish, vermilion, widow, yellowtail, black-and-yellow), cabezon and others.

I.A.7: The existing Point Sal State Beach and the adjacent large offshore rock (Lion Rock) provide vital roost/haul-out habitat for hundreds of endangered brown pelicans in addition to hundreds of Brandt's and Pelagic cormorants, Western gulls, and California sea lions. The sandy beaches along the southern section of coast provide roosting habitat for hundreds of Heerman's gulls.

I.A.9: Contains soft and hard substrate, kelp bed habitat

I.B.1: public access currently established at Pt. Sal State Beach

I.B.4: The total commercial fish and invertebrate catch within state waters in this area (CFIS data 1999-2004) represented only 0.18% of that for the MLPA Central California study region.

I.B.6: There is similar soft and hard substrate in the surrounding area (federal waters) in which spillover effects may occur.

I.C.1: adjacent to Point Sal State Beach

I.C.3: the boundaries are simple and square

I.C.4: bottom habitat would be protected, as would kelp beds important to the California sea otter for foraging

I.D.1: opportunities for scientific research and/or monitoring of potential larval retention zone; kelp bed and forage areas (see I.A.2)

Does this site expand an existing MPA? No, but is adjacent to the existing Pt. Sal State Beach
Is this a replicate of another site? No.

Goals and objectives for this MPA:

The overall goal of this site is to protect this diverse ecosystem, including critical seabird and marine mammal roost/haul-out habitat and the overall marine foodweb (Goal 1). There is also a small upwelling/eddy zone in the lee of Pt. Sal (Goal 4, oceanographic habitat). Specifically,

Goal 1, Obj.1: protect invertebrates, fish, birds, marine mammals and representative habitats

Goal 1, Obj.2: protect soft and hard substrate and kelp bed

Goal 1, Obj.3: will go out to three-miles and protect various representative habitat throughout

Goal 1, Obj.4: to protect full food-web, including important forage areas

Goal 1, Obj.5: to protect rockfish species of concern, Brown Pelicans and California sea otter

Goal 2, Obj.1: to protect several species of finfish and invertebrates including rockfish and market squid

Goal 2, Obj.2: to protect potential larval retention and minor upwelling area

Goal 3, Obj.4: to protect and enhance recreational experience from Pt. Sal State Beach

Goal 4, Obj.2: many habitats represented here including soft and hard bottom, kelp bed and vital roost/haul-out habitats

Goal 5, Obj.2: meet SAT guidelines

Goal 6: network design

Habitats, populations, or ecosystem functions of concern, including threats:

The Point Sal SMR will protect vital habitat for commercially important fish and invertebrate species as well as the top predators that prey on them. The existing Point Sal State Beach and the adjacent large offshore rock (Lion Rock) provide vital roost/haul-out habitat for sea birds. The sandy beaches along the southern section of coast provide roosting habitat for hundreds of Heerman's gulls.

Species: endangered brown pelicans, Brandt's and pelagic cormorants, Western gulls, sooty shearwaters, Pacific loons, Western grebes, Heerman's gulls, California sea lions, and bottlenose and common dolphins, sea otters.

26. Purisima Point SMR

Boundaries and species from Package C

27. Purisima Point SMCA

Boundaries and species from Package C

28. Arguello Promontory SMR

Boundaries and species from Package C

29. Arguello Boathouse SMCA

Boundaries from Package C

Area meets the following California State Interagency Coordinating Committee Criteria:

- III.A.1. Will protect the kelp beds that are critical foraging habitat for the threatened California Sea Otter, and protect recovering black abalone from human harvest.
- III.A.2. Will protect the soft-bottom habitat, kelp beds and offshore rocks that provide vital roost/haul-out habitat for endangered Brown Pelicans, as well as other migratory bird species and pinnipeds. It is also important habitat for the California Sea Otter.
- II. A. 4. Contains and would protect black abalone from harvest
- III.A.6. California Sea Otters
- III.A.7. will protect intertidal and subtidal
- III.A.8. a major upwelling area
- III.A.9. contains soft and hard bottom, plus kelp beds
- III.B.6. Potential of spillover into federal waters, or south of this area does exist.
- III.D.1. Adjacent to the existing Vandenberg SMR.
- III.D.3. Boundaries are square and simple.
- III.D.4. Would eliminate fishing in the water column except for immediately adjacent to the Boathouse; protecting critical seabird breeding habitat, critical seabird and marine mammal roost/haul-out habitat, and the prey of seabirds and marine mammals foraging in this area.
- III.E.1. There will be opportunity for scientific research and monitoring of the unique habitats and protected species of this area.

Does this site expand an existing MPA?

Yes, the existing Vandenberg SMR.

Is this a replicate of another site? No.

Goals and objectives for Arguello MPAs:

Overall goal is ecological: to protect black abalone, critical seabird breeding habitat, important seabird and marine mammal roost/haul-out habitat, and the complex marine food web these species and others depend on.

Goal 1, Obj.1: Will help protect a variety of habitats types, plus seabirds and marine mammals, including California Sea Otters and high population densities of black abalone.

Goal 1, Obj.3: This is a major upwelling and temperature mixing area, and potential larval retention area

Goal 1, Obj.4: Will protect the food web from invertebrates, to forage animals, to marine mammals.

Goal 1, Obj.5: Will help facilitate the recovery of the California Sea Otter

Goal 3, Obj.1 – Boathouse is a traditional access point for recreational diving

Goal 3, Obj.1 – This is a SMCA where recreational fishing will be permitted in only a portion, with the surrounding buffer of similar habitat protected.

Goal 3, Obj.4 – Will enhance the recreational fishing adjacent to the Boathouse

Goal 5, Obj 2 -- helps meets Framework guidelines

Goal 6 -- network design

Species, habitats, populations, or ecosystem functions of concern, including threats:

This site will protect vital habitat for commercially important fish and invertebrate species, including the only dense populations of black abalone on the south-central California mainland, as well as the top predators that prey on this variety of species. This is an area consisting of soft and hard bottom substrate. It is also a high energy area where intense coastal upwelling occurs (between Pt. Arguello and Pt. Conception). Pt. Arguello is also the largest promontory to disrupt the equatorward flow of the current. Recent research has shown waters on the leeward sides of coastal promontories provide refuge for larvae of fish and invertebrate species against offshore transport during upwelling events. Pt. Arguello falls in this category; these habitats are important in part because they have the potential to enhance recruitment to fish and invertebrate populations.

The cliffs and rocky shores of this area provide critical nesting habitat for pigeon guillemots, pelagic cormorants, Brandt's cormorants, black oystercatchers, and western gulls. The cliffs and numerous offshore rocks provides vital roost/haul-out habitat for hundreds of endangered brown pelicans in addition to hundreds of Brandt's, double-crested, and pelagic cormorants, Heerman's gulls, western gulls, California sea lions, and harbor seals. The kelp beds found in waters leeward of the promontory provide critical foraging habitat for California sea otters. Large foraging flocks consisting of the pelicans, cormorants, and gulls mentioned above as well as sooty shearwaters, Pacific loons, western grebes, California sea lions, and bottlenose and common dolphins occur in waters on both sides of the point. The soft-bottom habitat surrounding the promontory attracts hundreds of foraging surf scoters and numerous foraging California gray whales. In addition to fish listed above the area contains: sanddabs (Pacific, speckled, longfin), Chinook salmon, Pacific sardine, scorpionfish, white seabass, sole (English, Dover, petrale, rex, sand), barred surfperch, swordfish, thornyheads, tuna (albacore, bluefin), Dungeness crab, rock crab, spider crab, California spiny lobster, ridgeback prawn, spotted prawn, Pacific Ocean shrimp, market squid, and Kellet's whelk.

The wharf area associated with the Vandenberg Air Force Base Boathouse is a popular recreational fishing and diving spot as well as a training area for search and rescue groups. The wharf also provides a docking area where rocket parts can be delivered to VAFB; therefore, recreational fishing is permitted next to the boathouse.

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