

California Marine Life Protection Act Initiative
Master Plan Science Advisory Team
Evaluation Sub-Team Summary of MLPA Goals 1 and 4 Related to Habitat
Representation in Proposed Central Coast MPA Packages
March 7, 2006

The evaluation sub-team of the Master Plan Science Advisory Team (SAT) first analyzed the five proposed packages of marine protected areas (packages 1, 2, 3, S and AC) with the consideration of existing leases for kelp harvest. There are existing leases in the Pigeon Point to Capitola Subregion and in the San Martin to Point Estero Subregion that are associated with proposed marine protected areas (MPAs). The protection level of an MPA that only allows kelp harvesting is either SMCA-low (mechanical harvest) or SMCA-moderate (hand harvest); without kelp harvesting, the protection level in these MPAs changes to SMR (highest protection). Secondly, we analyzed the five packages without the consideration of existing kelp harvest leases in these MPAs. Considering the entire study region for all packages, an additional 0-8% of any habitat type would be protected in SMRs.

General Comments on All Packages

1. Regardless of kelp harvest considerations, at least 10% of each habitat type is represented at the moderate-to-high protection levels by all packages across the study region, with the notable exceptions of the habitats in the subregions as described below.
2. Regardless of kelp harvest considerations, at least 15% of most habitat types in most subregions are represented at moderate-to-high levels by packages 2, AC and S. Shallow rock and kelp are less represented at this level by Package 1, and kelp habitat is less represented by Package 3.
3. Considering kelp harvest, when 20% of the available habitat is protected at moderate-to-high levels, the number and types of habitats represented are much fewer but similar for all packages across the study region. Notably, none of the packages provide moderate-to-high levels of protection to most habitats in the San Martin to Point Estero Subregion. Most habitats are represented in the 20% category in the Point Sur to San Martin Subregion. Shallow rock habitat is much less represented in Package 1. In the 20% category, kelp habitat is represented in most subregions only by Package S.

When disregarding kelp harvest, the only change in number and types of habitats represented in the 20% category occurs in the San Martin-Pt. Estero subregion. Packages 2, 3, and S would now provide moderate-to-high levels of protection to rocky intertidal, shallow rock, and kelp habitats in this subregion.

4. Regardless of kelp harvest consideration, when 30% of the available habitat is protected at moderate-to-high protection levels, packages 2, AC and S continue to represent more habitat types than packages 1 and 3, most notably in the Point Sur to San Martin Subregion.

Comments on Packages (with consideration of existing kelp harvest leases)

1. All five proposed MPA packages increase conservation value over the existing MPAs (Package 0).

2. However, the packages differ with respect to how well various habitats are protected across the study region, and thus how well they achieve the conservation goals (1 and 4) of the MLPA.
3. The minimum amount of high level protection (SMR or SMCA-high) afforded by any one of the five packages to each of the eight habitats across the study region is: sand beach (13%), rocky intertidal (20%), estuary (32%), shallow sand (7%), deep sand (12%), shallow rock (9%), deep rock (11%) and kelp (15%). With the additional consideration of the moderate level of protection, these minimum values increase for sand beach (17%), rocky intertidal (23%), shallow sand (11%), deep sand (18%), shallow rock (15%) and deep rock (23%).
4. Shallow sand (<100 m water depth) is the most common benthic habitat in the study region; this habitat represents 72% of the entire study region. All packages provide at least moderate protection to greater than 10% of shallow sand habitat, which is a minimum area of 88 square miles. High protection is afforded to a minimum area of 61 square miles.
5. With respect to MLPA goals 1 and 4, all five proposed MPA packages provide similar amounts of moderate-to-high protection for the nearshore shallow habitats estuarine (32-36%), sandy beaches (16-23%), and rocky intertidal (23-35%), across the entire study region.
6. Across the entire study region, four proposed packages (1, 2, 3 and S) provide moderate-to-high protection to 18-26% deep sand habitat; Package AC affords moderate-to-high protection to 34% deep sand.

Differences among Packages

7. Although there are many similarities among the five packages, the levels of protection, the amount of habitat, the numbers of habitat types protected, the area of individual MPAs, and the spacing of MPAs varied across packages.
8. With respect to Goal 1, kelp is a particularly productive and species-rich habitat that is critical for many of the fish and invertebrate species that will likely benefit from MPAs (e.g., rockfishes). Across the entire study region, packages 1 and 3 provide highest (SMR) protection to 15 and 16% of kelp habitat, respectively, and Packages S, AC and 2 protect 22, 25, and 28% of this habitat in SMRs. This pattern in amount of kelp protected generally applies at the subregion level as well, for each subregion that has kelp habitat.
9. One of the large differences among the proposed packages pertains to protection of shallow rock habitats:
 - a) With respect to Goal 1, shallow rock habitats are critical for many of the species that will likely benefit from MPAs (e.g., rockfishes). Across the entire study region, packages 2, 3, S and AC provide moderate-to-high protection to 24-32% of shallow rock habitats, respectively, whereas Package 1 protects 15% of this habitat.
 - b) Packages 2, 3, S and AC afford at least moderate protection to >30% shallow rock habitat in the Capitola to Monterey Breakwater Subregion, whereas Package 1 provides no protection at all to this habitat type.

- c) In the Point Sur to San Martin Subregion, Package 1 protects 20% of shallow rock habitat at a high level (SMR and SMCA-high). Each of the other packages protects more than twice that amount at the high protection level.
 - d) In the Point Estero to Santa Maria River Subregion, packages 2, S and AC each afford about >17% protection at moderate-to-high levels to shallow rock habitat. Packages 1 and 3 provide moderate-to-high level protection to 8-11% of this type of habitat. The amount of shallow rock habitat protected in Package 1 could be increased by extending the northern boundaries of the Point Buchon SMR and SMCA northward. The Point Buchon SMCA in Package 3 was classified as SMCA-low due to the allowance of fishing for salmon and coastal pelagics in water depth <50 m. While this MPA is offshore and adjacent to an SMR, there is a relatively high level of uncertainty regarding bottom types in this area. From the data that are available, there is likely rock habitat in 30 m. Therefore, the current fishing allowances in this MPA in Package 3 result in classification as SMCA-low. Packages S and 2 incorporate the same general boundaries as Package 3, but have moved the shared boundary between the SMR and SMCA closer to the 50-m isobath. Therefore, this MPA in packages S and 2 is classified as SMCA-high.
10. The other large difference among the proposed packages pertains to protection of deep rock habitats:
- a) With respect to Goal 1, deep rock habitats are also critical for many of the species that will likely benefit from MPAs. Across the entire study region, three of the proposed packages (2, 3 and S) provide similar amounts of moderate-to-high protection of deep rock habitat (29-31%); 39% of this habitat is protected at moderate-to-high levels in Package AC and 23% is protected in Package 1.
 - b) However, packages 1, 3 and S protect <3% of this habitat type at the highest level (SMR) throughout the study region. This is most notable in Monterey Bay (Capitola to Monterey Breakwater Subregion).
 - c) In the San Martin to Point Estero Subregion, total amount of deep rock habitat is less than 1 square mile. Package 1 alone provides high-level protection to deep rock habitat (25%) in this subregion.
 - d) In the Point Estero to Santa Maria River Subregion, there is <1 square mile of deep rock habitat. Packages 2 and S each afford 63% protection at moderate-to-high levels to this small amount of habitat. Packages 1 and AC provide moderate-to-high level protection to 11% of this type of habitat. Deep rock habitats are not afforded any moderate-to-high protection by Package 3. This is because the Point Buchon SMCA in Package 3 was classified as SMCA-low due to the allowance of fishing for salmon and coastal pelagics in water depth <50 m. While this MPA is offshore and adjacent to an SMR, there is a relatively high level of uncertainty regarding bottom types in this area. From the data that are available, there is likely rock habitat in 30 m. Therefore, the current fishing allowances in this MPA result in classification as SMCA-low.
- Packages S and 2 incorporate the same general boundaries of Point Buchon SMCA as Package 3, but have moved the shared boundary between the SMR and SMCA

closer to the 50-m isobath. Therefore, this MPA in packages S and 2 is classified as SMCA-high.

11. Shallow (0-100 m) and deep (>100m) canyon habitats are found from Capitola to Cape San Martin (subregions 2-4) within the study region. Across the three subregions, Package AC protects the highest amount of shallow canyon habitat (16-73%); Package 1 protects the least amount (0-12%). Notably, in the Capitola to Monterey Breakwater Subregion (Monterey submarine canyon system), packages 1 and 3 protect <1% of shallow canyon habitat at moderate-to-high levels. Packages 1 and AC protect twice the amount of deep canyon habitat in Monterey Bay compared to the other three packages (about 30% versus 15%). In Monterey Breakwater to Point Sur, Package 2 protects twice as much deep canyon habitat at moderate-to-high level in the Point Lobos MPA compared with the other four packages. Packages 1, 3 and S protect 28- 32% of deep canyon habitat off the Big Sur coast (Point Sur to San Martin Subregion), compared with 48-51% by packages 2 and AC.

Comments on Packages (without consideration of existing kelp harvest leases)

1. Disregarding existing kelp harvest leases leads to change in protection level of MPAs only in two subregions (Pigeon Point to Capitola and San Martin to Point Estero).
2. In the Pigeon Point to Capitola Subregion, protection level increased to SMR in three MPAs in Package 1 and in a single large MPA in packages 2, 3 and S. All of these MPAs occur in one area of this subregion.
3. In the San Martin to Point Estero Subregion, protection level increased in one MPA in each of packages 2, 3, and S; these MPAs occur in one area of this subregion.
4. Protection levels in Package AC remain unchanged in the analysis that disregards kelp harvest leases.
5. Considering the entire study region for packages 1, 2, 3 and S, an additional 2-8% of any particular habitat type would be protected in SMRs.
6. By disregarding kelp harvesting in the Pigeon Point to Capitola Subregion, MPA protection level would change from SMCA-moderate to SMR. Therefore, there would be no change to the amount of each habitat type represented at the moderate-to-high protection levels.
7. However, the increase in amount of each habitat type represented in SMRs varies by habitat and package as a consequence of kelp harvesting in the Pigeon Point to Capitola Subregion. For example, in this subregion up to an additional 27% of shallow rock, 40% sandy beach, and 31% rocky intertidal habitats would be protected in SMRs. By contrast, an addition of only 0-2% of kelp habitat would be protected in SMRs. This is because the MPAs that have increased in protection level in this subregion include only a small percentage of available kelp.
8. By disregarding kelp harvesting in the San Martin to Point Estero Subregion, MPA protection level would change from SMCA-low to SMR. Only packages 2, 3 and S are affected by this change in protection level.

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team
Revised March 6, 2006**

NO KELP

Table 1a. Occurrence of SMR, SMCA High or SMCA Mod levels of protection in > 5% of available habitats in seven subregions of MPA packages. Gray cells indicate no available habitat. Blank cells indicate a lower level of protection in the subregion.

| | Package 0 >= 5% | Package 1 >= 5% | Package 2 >= 5% | Package 3 >= 5% | Package AC >= 5% | Package S >= 5% |
|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|--------------------|
| Subregion 1 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 2 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 3 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 4 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 5 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 6 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 7 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |

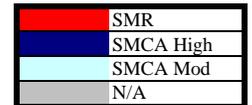
| | |
|--|-----------|
| | SMR |
| | SMCA High |
| | SMCA Mod |
| | N/A |

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team
Revised March 6, 2006**

NO KELP

Table 1b. Occurrence of SMR, SMCA High or SMCA Mod levels of protection in > 10% of available habitats in seven subregions of MPA packages. Gray cells indicate no available habitat. Blank cells indicate a lower level of protection in the subregion.

| | Package 0 >= 10% | Package 1 >= 10% | Package 2 >= 10% | Package 3 >= 10% | Package AC >= 10% | Package S >= 10% |
|--------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|
| Subregion 1 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 2 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 3 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 4 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 5 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 6 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 7 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |

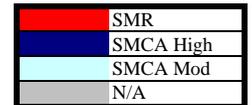


**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team
Revised March 6, 2006**

NO KELP

Table 1c. Occurrence of SMR, SMCA High or SMCA Mod levels of protection in > 15% of available habitats in seven subregions of MPA packages. Gray cells indicate no available habitat. Blank cells indicate a lower level of protection in the subregion.

| | Package 0 >= 15% | Package 1 >= 15% | Package 2 >= 15% | Package 3 >= 15% | Package AC >= 15% | Package S >= 15% |
|--------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|
| Subregion 1 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 2 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 3 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 4 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 5 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 6 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 7 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |



**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team
Revised March 6, 2006**

NO KELP

Table 1d. Occurrence of SMR, SMCA High or SMCA Mod levels of protection in > 20% of available habitats in seven subregions of MPA packages. Gray cells indicate no available habitat. Blank cells indicate a lower level of protection in the subregion.

| | Package 0 >= 20% | Package 1 >= 20% | Package 2 >= 20% | Package 3 >= 20% | Package AC >= 20% | Package S >= 20% |
|--------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|
| Subregion 1 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 2 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 3 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 4 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 5 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 6 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 7 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |



**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team
Revised March 6, 2006**

NO KELP

Table 1e. Occurrence of SMR, SMCA High or SMCA Mod levels of protection in > 30% of available habitats in seven subregions of MPA packages. Gray cells indicate no available habitat. Blank cells indicate a lower level of protection in the subregion.

| | Package 0 ≥ 30% | Package 1 ≥ 30% | Package 2 ≥ 30% | Package 3 ≥ 30% | Package AC ≥ 30% | Package S ≥ 30% |
|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|--------------------|
| Subregion 1 | | | | | | |
| Sand Beach | | SMR | SMR | SMR | SMR | SMR |
| Rocky Intertidal | | | SMR | SMR | | SMR |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | SMR | SMR | | SMR |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 2 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | SMR | SMR | SMR | SMR | SMR | SMR |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | SMR | SMCA Mod |
| Shallow Rock | | | SMR | SMCA High | SMCA Mod | SMCA High |
| Deep Rock | | | SMR | SMCA High | SMCA Mod | SMCA High |
| Kelp | | | | | | |
| Subregion 3 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | SMR | SMR | SMR | SMR |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | SMCA Mod | | | |
| Kelp | | | SMR | | | |
| Subregion 4 | | | | | | |
| Sand Beach | | | SMR | | SMR | |
| Rocky Intertidal | | | SMR | | SMR | |
| Estuary | | | | | | |
| Shallow Sand | | | SMR | | SMR | |
| Deep Sand | | | SMR | SMCA Mod | SMR | SMCA Mod |
| Shallow Rock | | | SMR | SMR | SMR | SMR |
| Deep Rock | | | SMR | SMR | SMR | SMR |
| Kelp | | | SMR | SMR | SMR | SMR |
| Subregion 5 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | SMCA High | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 6 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | SMCA High | SMCA High | | SMCA High | SMCA High |
| Shallow Rock | | | | | | |
| Deep Rock | | | SMCA High | | | SMCA High |
| Kelp | | | | | | |
| Subregion 7 | | | | | | |
| Sand Beach | | | | | SMR | SMR |
| Rocky Intertidal | | SMR | SMR | | SMR | SMR |
| Estuary | | | | | | |
| Shallow Sand | | | | | SMR | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | SMR | SMR |
| Deep Rock | | | | | | |
| Kelp | | | | | | |

| |
|-----------|
| SMR |
| SMCA High |
| SMCA Mod |
| N/A |

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team
Revised March 6, 2006**

WITH KELP

Table 1a. Occurrence of SMR, SMCA High or SMCA Mod levels of protection in > 5% of available habitats in seven subregions of MPA packages. Gray cells indicate no available habitat. Blank cells indicate a lower level of protection in the subregion.

| | Package 0 >= 5% | Package 1 >= 5% | Package 2 >= 5% | Package 3 >= 5% | Package AC >= 5% | Package S >= 5% |
|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|--------------------|
| Subregion 1 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 2 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 3 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 4 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 5 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 6 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 7 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |

| | |
|--|-----------|
| | SMR |
| | SMCA High |
| | SMCA Mod |
| | N/A |

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team
Revised March 6, 2006**

WITH KELP

Table 1b. Occurrence of SMR, SMCA High or SMCA Mod levels of protection in > 10% of available habitats in seven subregions of MPA packages. Gray cells indicate no available habitat. Blank cells indicate a lower level of protection in the subregion.

| | Package 0 >= 10% | Package 1 >= 10% | Package 2 >= 10% | Package 3 >= 10% | Package AC >= 10% | Package S >= 10% |
|--------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|
| Subregion 1 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 2 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 3 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 4 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 5 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 6 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 7 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |



**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team
Revised March 6, 2006**

WITH KELP

Table 1c. Occurrence of SMR, SMCA High or SMCA Mod levels of protection in > 15% of available habitats in seven subregions of MPA packages. Gray cells indicate no available habitat. Blank cells indicate a lower level of protection in the subregion.

| | Package 0 >= 15% | Package 1 >= 15% | Package 2 >= 15% | Package 3 >= 15% | Package AC >= 15% | Package S >= 15% |
|--------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|
| Subregion 1 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 2 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 3 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 4 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 5 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 6 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 7 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |

| | |
|--|-----------|
| | SMR |
| | SMCA High |
| | SMCA Mod |
| | N/A |

**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team
Revised March 6, 2006**

WITH KELP

Table 1d. Occurrence of SMR, SMCA High or SMCA Mod levels of protection in > 20% of available habitats in seven subregions of MPA packages. Gray cells indicate no available habitat. Blank cells indicate a lower level of protection in the subregion.

| | Package 0 >= 20% | Package 1 >= 20% | Package 2 >= 20% | Package 3 >= 20% | Package AC >= 20% | Package S >= 20% |
|--------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|
| Subregion 1 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 2 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 3 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 4 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 5 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 6 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 7 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |



**California Marine Life Protection Act Initiative
Master Plan Science Advisory Team
Revised March 6, 2006**

WITH KELP

Table 1e. Occurrence of SMR, SMCA High or SMCA Mod levels of protection in > 30% of available habitats in seven subregions of MPA packages. Gray cells indicate no available habitat. Blank cells indicate a lower level of protection in the subregion.

| | Package 0 >= 30% | Package 1 >= 30% | Package 2 >= 30% | Package 3 >= 30% | Package AC >= 30% | Package S >= 30% |
|--------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|
| Subregion 1 | | | | | | |
| Sand Beach | | SMR | SMR | SMR | SMR | SMR |
| Rocky Intertidal | | SMCA Mod | SMCA Mod | SMCA Mod | SMCA Mod | SMCA Mod |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | SMR | SMR | | SMR |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 2 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | SMR | SMR | SMR | SMR | SMR | SMR |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | SMR | SMCA Mod |
| Shallow Rock | | | SMR | SMCA High | SMCA Mod | SMCA High |
| Deep Rock | | | SMR | SMCA High | SMCA Mod | SMCA High |
| Kelp | | | | | | |
| Subregion 3 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | SMR | SMR | SMR | SMR |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | SMCA Mod | | | |
| Kelp | | | SMR | | | |
| Subregion 4 | | | | | | |
| Sand Beach | | | SMR | | SMR | |
| Rocky Intertidal | | | SMR | | SMR | |
| Estuary | | | | | | |
| Shallow Sand | | | SMR | | SMR | |
| Deep Sand | | | SMR | SMCA Mod | SMR | SMCA Mod |
| Shallow Rock | | | SMR | SMR | SMR | SMR |
| Deep Rock | | | SMR | | SMR | SMR |
| Kelp | | | SMR | | SMR | SMR |
| Subregion 5 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | SMCA High | | | | |
| Shallow Rock | | | | | | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |
| Subregion 6 | | | | | | |
| Sand Beach | | | | | | |
| Rocky Intertidal | | | | | | |
| Estuary | | | | | | |
| Shallow Sand | | | | | | |
| Deep Sand | | SMCA High | SMCA High | | SMCA High | SMCA High |
| Shallow Rock | | | | | | |
| Deep Rock | | | SMCA High | | | SMCA High |
| Kelp | | | | | | |
| Subregion 7 | | | | | | |
| Sand Beach | | | | | SMR | SMR |
| Rocky Intertidal | | SMR | SMR | | SMR | SMR |
| Estuary | | | | | | |
| Shallow Sand | | | | | SMR | |
| Deep Sand | | | | | | |
| Shallow Rock | | | | | SMR | |
| Deep Rock | | | | | | |
| Kelp | | | | | | |

