

**California Marine Life Protection Act (MLPA) Initiative**  
**SAT Evaluation of Final MPA Proposals from the South Coast Study Region:**  
**Habitat Representation, Habitat Replication, MPA Size and MPA Spacing Analyses**  
*December 7, 2009*

The MLPA Master Plan Science Advisory Team (SAT) evaluates marine protected area (MPA) proposals in relation to the goals of the MLPA. SAT evaluations of habitat representation and habitat replication primarily address goals 1 and 4 of the Marine Life Protection Act (MLPA), which focus on ecosystems and habitats. SAT evaluations of MPA size and spacing between MPAs primarily address goals 2 and 6 of the MLPA, which focus on marine life populations and connectivity. The discussion and associated figures and tables below compare the three revised stakeholder-generated MPA proposals developed during round 3 of the MLPA south coast study region (SCSR) process (P1R, P2R, and P3R), the MLPA South Coast Integrated Preferred Alternative (IPA), and the 'no change' alternative (proposal 0) for each of the four evaluations listed above.

Methods for these analyses, including explanations of levels of protection (LOPs), are described in an associated document: *Methods Used to Evaluate Marine Protected Area Proposals in the MLPA South Coast Study Region* ("SAT Evaluation Methods Document"). In the South Coast Study Region, areas managed by the federal military create unique considerations for evaluation of the network proposals. Unlike other MPAs, the activities within these military areas are not regulated by the California Department of Fish and Game (CDFG), so MLPA staff determined that no LOP should be assigned to these areas. Instead, likely levels of impact were assessed for various military activities that occur in the region, and these impact levels were reviewed by both the SAT and the Blue Ribbon Task Force (BRTF). In general, proposed closures were identified in areas where military activities were likely to have a relatively low impact on the marine ecosystem as compared to activities that occur elsewhere around the military islands. Four possible closures were defined by the military at San Clemente and San Nicolas Islands, three of which were adopted by at least one proposal. Habitat information for these areas was limited, but where habitat maps were available, these areas are incorporated into estimates of habitat representation, replication, size and spacing, at all levels of protection so their *potential* contribution to the networks can be considered.

### **Habitat Representation (Goals 1 and 4)**

The key questions that the habitat representation analysis addresses are:

- How well are key habitat types represented in MPA proposals?
- What are the proposed LOPs for these protected habitats?
- How well are protected habitats distributed across the study region, considering their LOPs?

In order to answer these questions, the SAT compared the percentage of available habitat included within each of the proposals across various LOPs. The SAT also considered the distribution of habitat representation across each of the five bioregions identified in the south coast study region: south and north mainland, and west, mid-, and east Channel Islands. Further details on these methods are available in the "SAT Evaluation Methods Document."

Habitat abundance varies by habitat type and many habitats are unevenly distributed across the study region (Figure 1.1). Habitat abundance and distribution affects the ease with which proposals can include each habitat within an MPA network proposal. For instance, soft bottom habitats are generally more abundant across the study region than rocky reef habitats. Additionally, soft bottom habitats are more prevalent along the mainland, while rocky reef habitats are most abundant at the offshore islands. Deep rocky reef habitat (>100 meters depth) is extremely rare across the study region and occurs in only a few isolated locations, thus protecting this habitat in an MPA proposal is challenging. Estuarine habitats occur exclusively in the two mainland bioregions and are concentrated in the southern portion of the mainland.

The results of the habitat representation analysis are displayed in figures 2.1 to 2.5 and tables 2.6 and 2.7 below. For the key habitats present in the study region, these figures display the percentage of that habitat included in MPAs in each of the final proposals. Results are grouped by SAT-assigned LOP. Most of the rare and unique habitats (Table 2.7) are not well mapped and thus estimates of area may be inaccurate or imprecise. Therefore, a table of the number of MPA clusters in each of the proposals that include each habitat is used to summarize and compare these results. The rare and unique habitats evaluation is conducted only for MPAs that achieve a LOP at or above moderate-high.

Overall, the four proposals show some consistent patterns across multiple protection levels.

- Averaged across all habitats, the ranking of proposals from largest to smallest proportion of available habitats protected at or above moderate-high protection is: P3R > P1R > IPA > P2R.
- State MPAs within the Channel Islands National Marine Sanctuary (CINMS) were included in all proposals and contribute significantly to habitat representation at very high protection for most open coast habitats.
- Pending military closures proposed at San Clemente and San Nicolas Islands are not assigned an LOP, but are included in habitat representation totals across all levels of protection. Pending military closures contributed to representation of open coast rock and soft-bottom habitats across all proposals.
- Most habitats have at least 10% representation at or above the moderate-high LOP in all four proposals (Figures 2.1-2.5). Exceptions are limited to estuaries, eelgrass, and tidal flats.

**Table 2.6:** The average percentage of available habitat included in MPAs at or above the indicated level of protection for each proposal. Total percentages include all MPAs and military closures. The contribution of Channel Islands National Marine Sanctuary (CINMS) MPAs and proposed military closures are indicated in separate columns.

a) Very High Protection	Total % Protected (All MPAs + Military Closures)					% Protected in CINMS MPAs	% Protected in Military Closures	
	P0	P1- R	P2- R	P3- R	IPA	All Proposals	P1-R, P2- R, IPA	P3- R
Nearshore rocky habitats <sup>1</sup> (intertidal to 30m)	7%	16%	14%	21%	15%	7%	2%	4%
Offshore rocky habitats <sup>2</sup> (30-3000m)	7%	32%	19%	33%	30%	7%	6%	10%
Nearshore soft-bottom habitats <sup>3</sup> (intertidal to 30m)	5%	10%	9%	14%	9%	4%	1%	2%
Offshore soft-bottom habitats <sup>4</sup> (30-3000m)	5%	18%	16%	16%	15%	5%	1%	1%
Estuarine habitats <sup>5</sup>	0%	12%	3%	21%	7%	0%	0%	0%

b) Moderate High Protection	Total % Protected (All MPAs + Military Closures)					% Protected in CINMS MPAs	% Protected in Military Closures	
	P0	P1- R	P2- R	P3- R	IPA	All Proposals	P1-R, P2- R, IPA	P3- R
Nearshore rocky habitats <sup>1</sup> (intertidal to 30m)	7%	17%	15%	23%	17%	7%	2%	4%
Offshore rocky habitats <sup>2</sup> (30-3000m)	7%	33%	25%	33%	31%	7%	6%	10%
Nearshore soft-bottom habitats <sup>3</sup> (intertidal to 30m)	5%	12%	10%	17%	12%	4%	1%	2%
Offshore soft-bottom habitats <sup>4</sup> (30-3000m)	5%	20%	20%	18%	20%	5%	1%	1%
Estuarine habitats <sup>5</sup>	0%	17%	3%	21%	7%	0%	0%	0%

<sup>1</sup> Includes rocky shores, surfgrass, 0-30m rock, persistent kelp, and maximum kelp

<sup>2</sup> Includes 30-100m rock, 100-200m rock, and 200-3000m rock

<sup>3</sup> Includes beaches and 0-30m soft bottom

<sup>4</sup> Includes 30-100m soft bottom, 100-200m soft bottom, and 200-3000m soft bottom

<sup>5</sup> Includes estuaries, coastal marsh, eelgrass, and tidal flats

## Highlights from habitat-specific analyses include:

### **Nearshore rocky habitats** (rocky shores, surfgrass, 0-30m rock, persistent kelp, and maximum kelp):

- On average, proposals include 14-21% of the nearshore rocky habitats at very high protection and 15-23% at or above moderate high protection.
- The ranking of proposals, from largest to smallest proportion of these habitats included in MPAs and pending military closures is: P3R > P1R > IPA > P2R. This ranking is constant across very high, high, and moderate high LOPs.
- The CINMS MPAs contribute substantially to protection of nearshore rocky habitats. For example, in the case of P2R, half of the nearshore rocky habitats included at very high protection occur in the CINMS MPAs.
- Subtidal rocky habitats in the nearshore are evaluated using three separate, but complimentary, measures. The “persistent” kelp measure, which is defined as areas with kelp present during at least 3 of 7 years of available data, measures the likely presence of kelp forest habitat. The other two measures, 0-30m rocky reef and the maximum extent of kelp (at least 1 of 7 years of available data), both indicate the relative protection of nearshore rocky reef or potential kelp habitat but do not by themselves indicate a high likelihood of kelp presence. Within each of the four proposals, these three habitat measures have similar levels of representation, due to the high degree of overlap between the measures.

### **Offshore rocky habitats** (30-100m, 100-200m, and 200-3000m rock reef):

- On average, proposals include 19-33% of the offshore rocky habitats at very high protection and 25-33% at or above moderate high protection.
- Offshore rock habitats are rare and unevenly distributed throughout the study region. The relatively high proportion of these habitats included within MPAs reflects MPA placement in key geographies where these habitats are known to occur, including Pt. Dume, Palos Verdes, Del Mar, South La Jolla, Sunset Cliffs, Farnsworth Bank, and San Nicolas and San Clemente Islands.
- The ranking of proposals, from largest to smallest proportion of these habitats included in very high protection MPAs and pending military closures is: P3R > P1R > IPA > P2R.
- At moderate high protection, the ranking of proposals from largest to smallest proportion of these habitats included in MPAs and pending military closures changes slightly to: P3R ≈ P1R > IPA > P2R.
- The CINMS MPAs and pending military closures contribute substantially to protection of offshore rocky habitats. Notably, the proposed military closure at San Nicolas Island included in P3R contributes to the high level of offshore rocky habitat representation in P3R.

### **Nearshore soft-bottom habitats** (beaches and 0-30m soft bottom):

- On average, proposals include 9-14% of the nearshore soft-bottom habitats at very high protection and 10-17% at or above moderate high protection.
- The ranking of proposals from largest to smallest proportion of these habitats included in very high protection MPAs and pending military closures is: P3R > P1R > IPA ≈ P2R.
- At moderate high protection, the ranking of proposals from largest to smallest proportion of these habitats included in MPAs and pending military colusres changes slightly to: P3R > P1R ≈ IPA > P2R.

- The CINMS MPAs contribute substantially to protection of nearshore soft-bottom habitats.
- Nearshore soft-bottom habitats are more abundant and evenly distributed across the study region than rocky habitats. Due to the high availability of soft bottom habitats even relatively modest percentages translate into large areas of habitat protected.

**Offshore soft-bottom habitats (30-100m, 100-200m, and 200-3000m soft bottom):**

- On average, proposals include 15-18% of the nearshore soft-bottom habitats at very high protection and 18-20% at or above moderate high protection.
- The ranking of proposals, from largest to smallest proportion of these habitats included in very high protection MPAs and pending military closures is: P1R > P2R ≈ P3R > IPA.
- At moderate high protection, the ranking of proposals from largest to smallest proportion of these habitats included in MPAs and pending military closures changes to: P1R ≈ P2R ≈ IPA > P3R
- Proposals include a larger proportion of offshore soft-bottom habitats as compared to nearshore soft-bottom habitats.
- The CINMS MPAs contribute to protection of nearshore soft-bottom habitats.
- Offshore soft-bottom habitats are the most abundant habitats in the study region. These habitats are relatively evenly distributed across the study region, with the exception of the deepest soft bottom habitat which occurs mainly in the eastern Channel Islands bioregion. Due to the high availability of soft bottom habitats even relatively modest percentages translate into large areas of habitat protected.

**Estuarine habitats (estuary, coastal marsh, eelgrass, and tidal flats):**

- The four proposals vary markedly in the proportion of estuarine habitats included in MPAs at or above moderate high protection, with P3R and P1R including a substantially greater proportion of estuarine habitats than IPA and P2R.
- On average proposals include 3-21% of estuarine habitats at very high protection and 3-21% at or above moderate high protection.
- The ranking of proposals from largest to smallest proportion of estuarine habitats included in MPAs is: P3R > P1R > IPA > P2R. This ranking is constant across very high, high, and moderate high LOPs.
- Estuarine habitats occur almost exclusively on the mainland and are concentrated in the south mainland, thus, neither MPAs within the CINMS nor pending military closures contribute to representation of estuarine habitats.
- Eelgrass is both rare and patchily distributed across the study region. The majority of eelgrass occurs in the south mainland bioregion with much of that in San Diego Bay. This patchy distribution led to a low level of eelgrass protection across all proposals. The four proposals include 0-4% of eelgrass at or above moderate-high protection levels (figure 2.3c). Revised proposal 2 does not include any mapped eelgrass in proposed MPAs.

**Rare and unique habitats (open coast eelgrass, elk kelp, oil seeps, sulfide vents, and canyons):**

- In general, rare and unique habitats are not mapped with sufficient resolution to assess the relative proportion of available habitat included in proposals. Table 2.7 summarizes the number of MPA clusters at or above moderate-high protection that are known to contain rare and unique habitats. This summary is compiled by proposal. Those habitats included in the CINMS MPAs are identified on a separate line in Table 2.7 and also included in the totals for each proposal. Most proposals were similar in terms of the

number of key habitats included, except P3R performed better for three of the five habitats.

**Table 2.7:** Number of MPA clusters at or above moderate-high protection (including proposed military closures) that include rare and unique habitats in each proposal<sup>1</sup>. Totals for each proposal include those habitats captured in CINMS MPAs.

Proposal	Open coast eelgrass	Elk kelp	Oil seeps	Sulfide vents <sup>2</sup>	Canyons
CINMS	4	0	1	0	1
Proposal 0	2	1	0	0	1
Proposal 1 Revised	9(1)	2(1)	3	0	3
Proposal 2 Revised	9(1)	1(1)	3	0	3
Proposal 3 Revised	10(1)	3(1)	5	0	3
Integrated Preferred Alternative	9(1)	2(1)	3	0	3

<sup>1</sup> ( ) indicates military closures

<sup>2</sup> Only one sulfide vent location is currently mapped in the study region at Palos Verdes.

## Habitat Replication (Goals 1 and 4)

The science guidelines for design of MPAs, described in Chapter 3 of the *Master Plan for Marine Protected Areas*, recommend replication of habitats within 3-5 SMRs in each biogeographical region (for southern California from Point Conception to the Mexico border). Additionally, to represent the full diversity of marine ecosystems within the SCSR, the SAT recommended that habitats should be replicated in at least one MPA in each of the five bioregions of the SCSR, to the extent possible. In order to be counted in the replication analysis, the MPA must meet the minimum size guideline (9 square miles), and a given habitat within the MPA must be present in a sufficient amount to encompass 90% of associated biodiversity (see habitat replication thresholds in the "SAT Evaluation Methods Document" for further details.)

The results of the habitat replication analysis are displayed in figures 3.1 to 3.4 below. In figure 3.1, the number of MPAs that contain a significant amount of each habitat is shown for each MPA proposal at very high, high, and moderate-high LOPs. Figure 3.2 contains similar information to 3.1 for estuaries. Figure 3.3 shows replication of depth ranges only. The evaluation of habitat replication by depth allows the SAT to assess replication across bioregions with limited data available for deeper habitats. Figure 3.4 shows, for each proposal, the number of bioregions where a habitat replicate is included within at least one proposed MPA. The replication analysis is conducted for MPAs at the three highest LOPs and includes pending military closures. Grey boxes on Figure 3.4 denote habitats for which a proposal does not have at least one replicate in each possible bioregion. The number of bioregions where it is possible to include a replicate for a given habitat is noted in parentheses after the habitat name.

Across the entire SCSR, the four proposals meet the replication guidelines for all open coast habitats within no-take SMRs, with the exception of 100-3000m rock in IPA which is only replicated in two areas. At the level of individual bioregions, however, several proposals do not replicate all habitats at a very high LOP, and in some cases at the moderate high LOP, within each of the possible bioregions (figure 3.4).

- At very high protection, the ranking of proposals from most to fewest average replicates across all habitats is: P3R > P1R > P2R > IPA.
- At moderate high protection, the ranking of proposals from most to fewest replicates across all habitats changes slightly to: P3R > P1R > IPA > P2R.
- State MPAs within the CINMS contribute significantly to replication for all open coast habitats. The number of habitat replicates contained within the CINMS ranges from 1, for the deepest rock and soft bottom habitats, to 6 or 7 for some shoreline and nearshore habitats.
- Pending military closures contribute 1-3 replicates for most open coast habitats.
- IPA does not replicate persistent kelp across all bioregions at very high protection (no replicate in the south mainland), but replicates this habitat across all bioregions at high protection.
- IPA does not replicate 30-100m rock across all bioregions at or above moderate high protection (no replicate in the south mainland).
- Deep rock (100-3000m) is rare and unevenly distributed throughout the study region and thus difficult to replicate in multiple MPAs. All proposals add 2-3 replicates of deep rock habitat to the 1 replicate contained in the CINMS MPAs at or above moderate high protection. Deep rock (100-3000m) was not replicated across all available bioregions at or above moderate-high protection in P3R or IPA

(no replicate in the south mainland). This habitat was included in the other proposals with an MPA at Del Mar.

- Estuarine habitats are best replicated in P1R and P3R, followed by the IPA, and then P2R. Eelgrass is rare and unevenly distributed across the study region making it difficult to replicate in multiple MPAs. P1R, P3R and IPA include one replicate of eelgrass at very high protection while P2R includes no replicates of eelgrass at or above moderate-high protection.
- P1R, P2R, and IPA do not replicate 30-100 meter and 200-3000 meter soft-bottom habitats across all bioregions at very high protection, but replicated these habitats across all bioregions at high protection.

## MPA Size

Size guidelines were developed to provide for the persistence of important bottom-dwelling fish and invertebrate groups within MPAs (see size in the "SAT Evaluation Methods Document" for further details). To accommodate adult movements and life history needs for a range of species, science guidelines in the *Master Plan* state that MPAs should have a minimum alongshore span of 3-6 statute miles (preferably 6-12.5 statute miles) and should extend offshore to deep waters (note that state waters generally extend offshore to 3 statute miles). The SAT combined these two guidelines to recommend that an individual MPA or MPA cluster should have a minimum area of 9-18 square statute miles (preferably 18-36 square statute miles).

The size analysis considers the number of MPA "clusters" (adjacent MPAs at or above a given LOP) that meet the minimum and preferred SAT size guidelines at very high, high, and moderate-high LOP. An MPA cluster may consist of a single MPA, or several contiguous MPAs. Estuarine MPAs are not included in the size analysis because the sizes of estuaries vary and their boundaries are fixed.

Figure 4.1 displays results of the MPA size analysis. Each proposal is displayed on a separate line of a figure and each circle indicates the size of an MPA "cluster", with larger MPA clusters further to the right and smaller MPA clusters further to the left. The pink shaded area to the far left of a figure indicates MPA clusters that fall below the minimum MPA size recommended by the SAT (9 square statute miles). The yellow shaded area in the middle of the figure indicates MPA clusters that are bigger than the minimum size guideline, but smaller than the preferred size recommended by the SAT (18 square statute miles). The blue shaded area to the right of the figure indicates MPA clusters that fall within the preferred size range recommended by the SAT (18 – 36 square statute miles). These results also are tabulated on the right hand side of the figure. Since MPAs within the CINMS are included in all proposals, the sizes for these MPAs are provided separately from the proposals for ease of display and not included in the totals for each proposal.

The proposals are similar in terms of the number of MPA clusters at each LOP, with 13-16 MPA clusters at very high protection and 15-19 MPA clusters at or above moderate high protection.

- The order of proposals from largest to smallest median MPA cluster size at very high protection is: P3R > P1R ≈ P2R > IPA
- The order of proposals from largest to smallest median MPA cluster size at moderate high protection is: P3R > P1R ≈ IPA > P2R

- All proposals have three no-take clusters within the preferred size range, including pending military closures.
- At high LOP, additional MPA clusters are within the preferred size range across all proposals, resulting in 4-5 preferred size MPA clusters in each proposal (figure 4.1b). IPA and P2R include the most preferred size MPAs (5) at high LOP.
- IPA has the largest number of MPA clusters that fall below the minimum size and the greatest proportion of total MPAs below minimum size at very high, high, and moderate high LOP.
- All proposals contain some MPAs below the minimum size range.

## MPA Spacing

Spacing guidelines were developed to provide for the dispersal of larvae for a range of important bottom-dwelling fish and invertebrate groups between MPAs and to promote connectivity in the network. Further details on these methods are available in the "SAT Evaluation Methods Document." To facilitate dispersal and connectivity, spacing guidelines along the mainland recommend that habitats be replicated in MPAs placed at a maximum of 31-62 statute miles from each other. Since marine populations are generally habitat specific, the spacing evaluation is conducted for each habitat. To be included in the spacing analysis, habitat must be protected in sufficient quantity to count as a replicate, which encompasses the amount of habitat needed to include 90% of the associated species (see habitat replication, above). MPAs or MPA clusters also must meet the minimum size guidelines (9 square statute miles) to count as a replicate in the spacing analysis. Due to the complex geography and ocean circulation around the Channel Islands, the MPA spacing is not evaluated at the offshore islands but other science guidance is used to inform MPA design in these areas.

Spacing analyses include 1) the maximum distance (gap) between MPA clusters that include a replicate of each habitat and 2) the number of spacing gaps that exceed SAT spacing guidelines (> 62 square statute miles) for a given habitat. Both analyses are conducted for MPAs at very high, high, and moderate-high LOP.

### **1) Maximum Distance (gap)**

Figure 5.1 displays the results of the MPA spacing analysis for all open coast habitats. The height of each bar indicates the maximum distance between adjacent habitat replicates in a given proposal. These maximum distances, or gaps, for each habitat may be compared to the spacing guidelines, a maximum of 31 to 62 miles between MPAs, which is indicated by the horizontal dashed red lines on the figure.

A important caveat to drawing conclusions from spacing evaluations is that it is not possible to meet the spacing guidelines for some habitats that are not well represented in the study region or are patchily distributed, such as rock 30-100m and rock 100-200m along the mainland, soft 200-3000 m, and to a lesser extent, kelp persistence due to a gap in persistent kelp distribution between Palos Verdes and the San Elijo area. In consideration of the gap between patches of persistent kelp along the mainland, the SAT conducted a "combined kelp" spacing analysis, which considered protection of 2.04 miles of maximum kelp within the gap to contribute to spacing of kelp habitat. Although it is not possible to meet all spacing guidelines across the entire study region for each of these habitats, it may be possible to meet the spacing guidelines in at least a portion of the study region. The spacing guidelines were developed to facilitate connectivity for larval stages which differs species by species. While the guidelines were developed by assessing larval duration for a large number of organisms, the inherent variability dictates that for biodiversity the spacing guidelines should be met or nearly met for the broadest set of habitats possible.

- P1R, P3R, and IPA meet or approach the spacing guidelines for all possible habitats at or above high protection.
- The ranking of proposals from shortest to longest maximum gap averaged across all habitats at or above high protection is: P3R < P1R < IPA < P2R

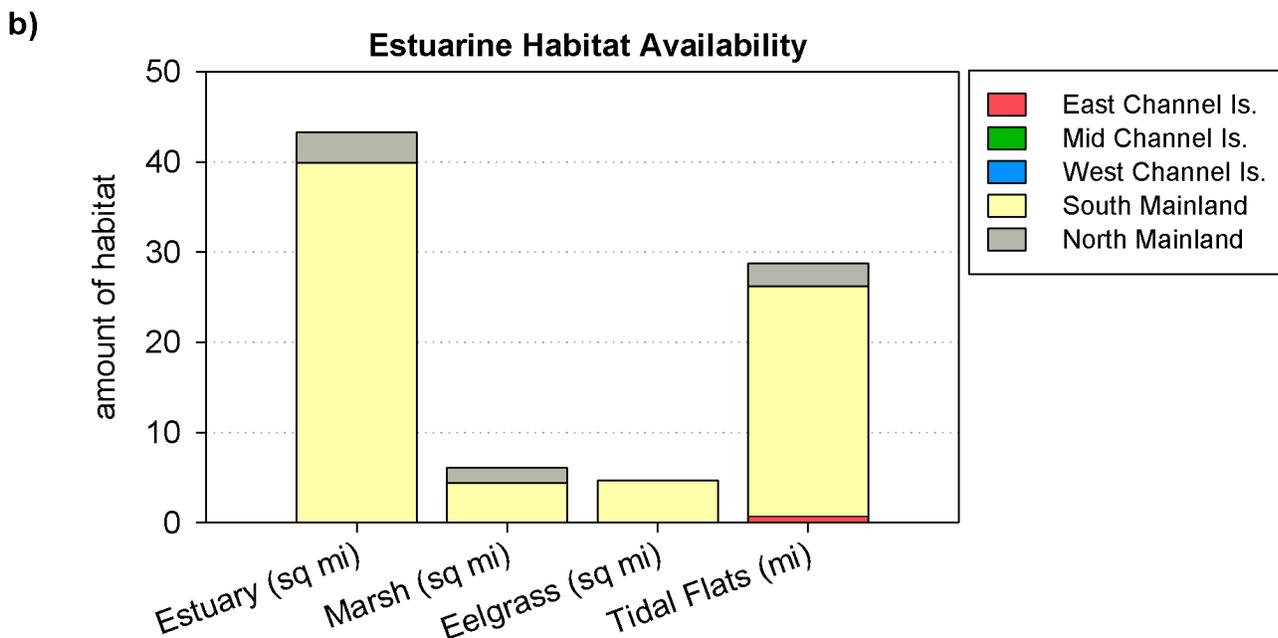
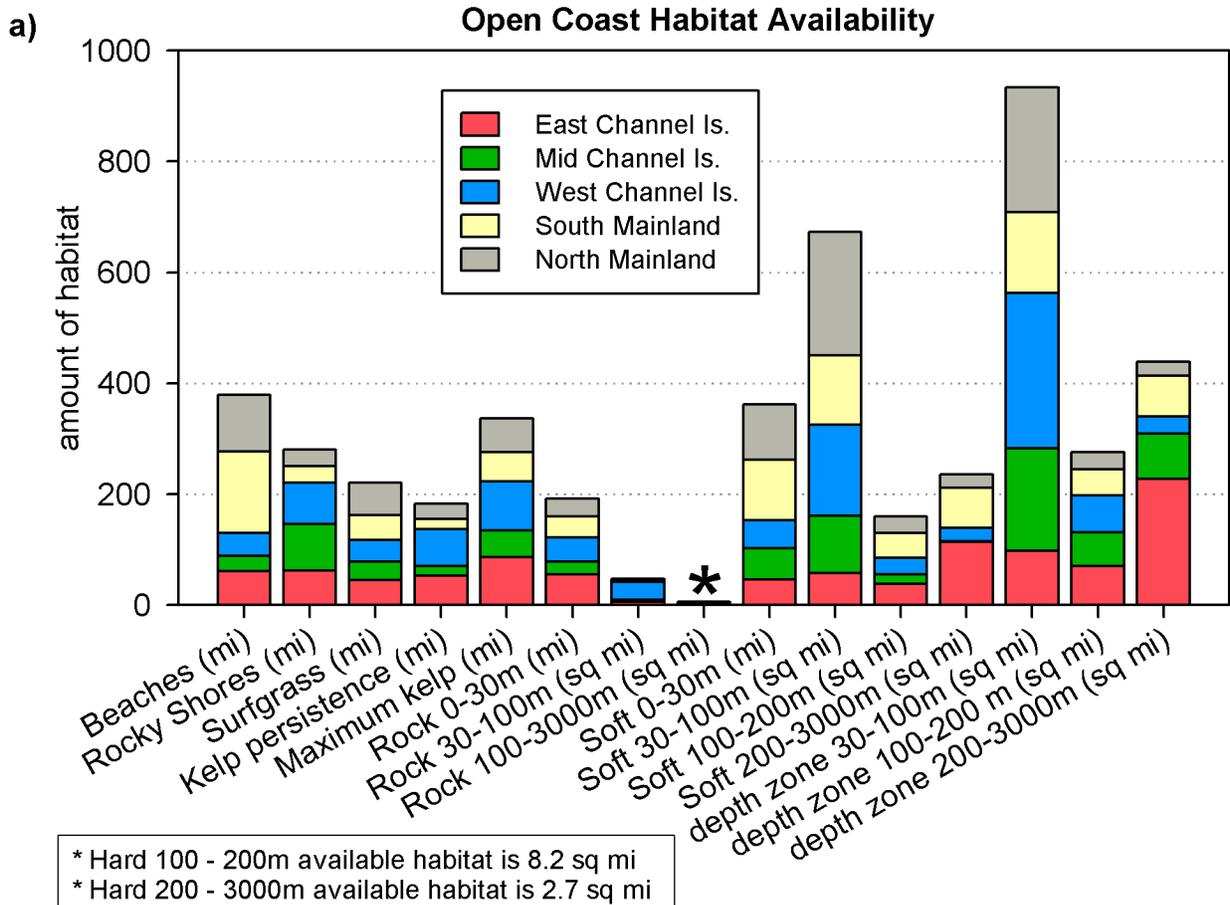
- In the case of the four habitats for which spacing guidelines cannot be met, the proposals differ in the distance of the longest spacing gap. Ranking of proposals from shortest to longest gap for each of these habitats at high protection is:
  - Persistent kelp: P3R < P1R < IPA < P2R
  - 30-100m rock: P1R ≈ P3R < P2R < IPA
  - 100-3000m rock: P1R ≈ P2R < P3R ≈ IPA
- P2R meets or approaches the spacing guidelines for many of the possible habitats at or above high protection, but exceeds the spacing guidelines for the combined kelp measure, 0-30m rock and 30-100m soft bottom although spacing guidelines were possible to meet for these habitats.
- At the high protection level, P3R achieved spacing for many habitats that was close to the preferred spacing guideline of 32 statute miles.

## **2) All Gaps that Exceed the SAT Spacing Guidelines**

Table 5.2a-c provides the number of spacing gaps that exceed SAT spacing guidelines between adjacent MPA clusters for a given habitat. The location and distance of each gap also is identified for each habitat. The intent of this analysis is to provide the South Coast Regional Stakeholder Group (SCRSG), the Blue Ribbon Task Force (BRTF), and the Fish and Game Commission (FGC) with detailed information about spacing gaps by habitat for each proposal, in order to identify specific MPA proposal designs that result in large spacing gaps that could compromise the network function of the proposed MPAs.

- The ranking of proposals from fewest to most gaps that exceed the SAT spacing guidelines across all habitats at high protection is: P3R < IPA < P2R < P1R. This analysis includes gaps for those habitats for which spacing guidelines are impossible to meet.
- When only gaps that exceed the spacing guidelines by 10% or more are considered, P1R, P3R, and IPA all have a total of 6 gaps across all habitats at high protection, while P2R has a total of 8 gaps.

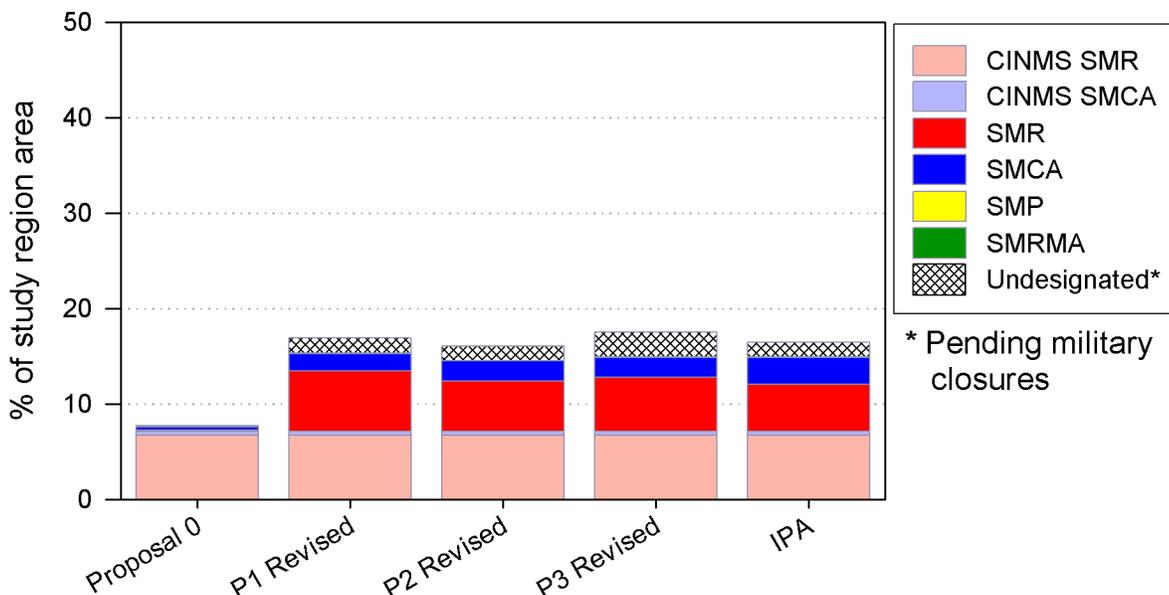
**Figure 1.1: South Coast Study Region Habitat Availability**



**Figure 1.2: Summary of MPA Designations and Levels of Protection**

a)

Comparison of Existing MPAs (Proposal 0), Revised SCRSG Proposals (1-3), and the South Coast Integrated Preferred Alternative (IPA) by Designation Type



b)

Comparison of Existing MPAs (Proposal 0), Revised SCRSG Proposals (1-3) and the South Coast Integrated Preferred Alternative (IPA) by Level of Protection

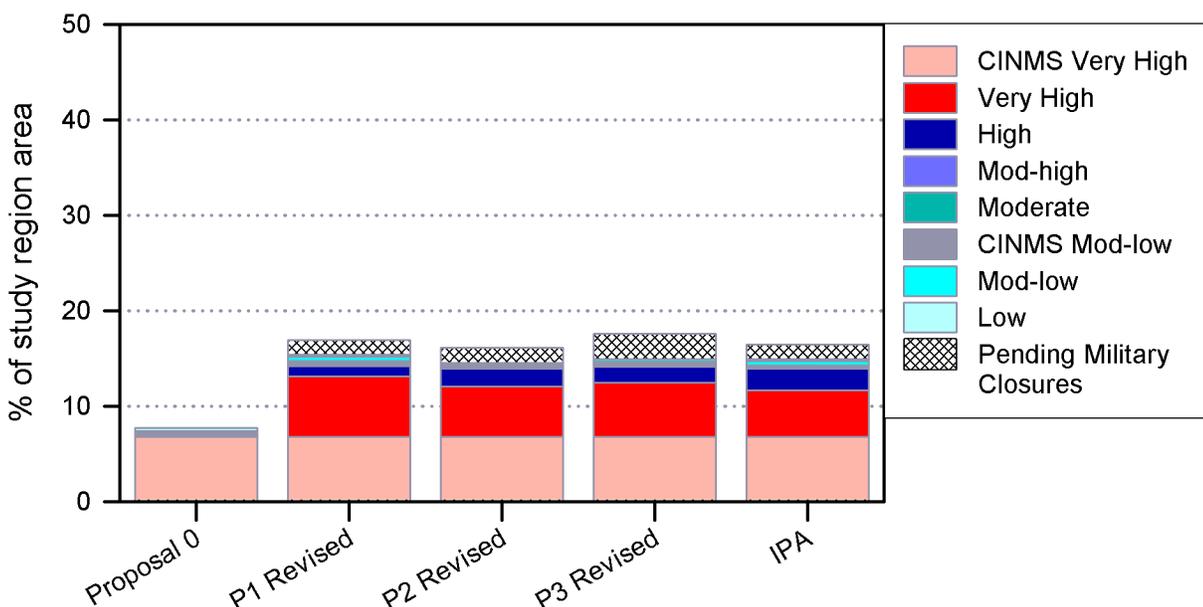
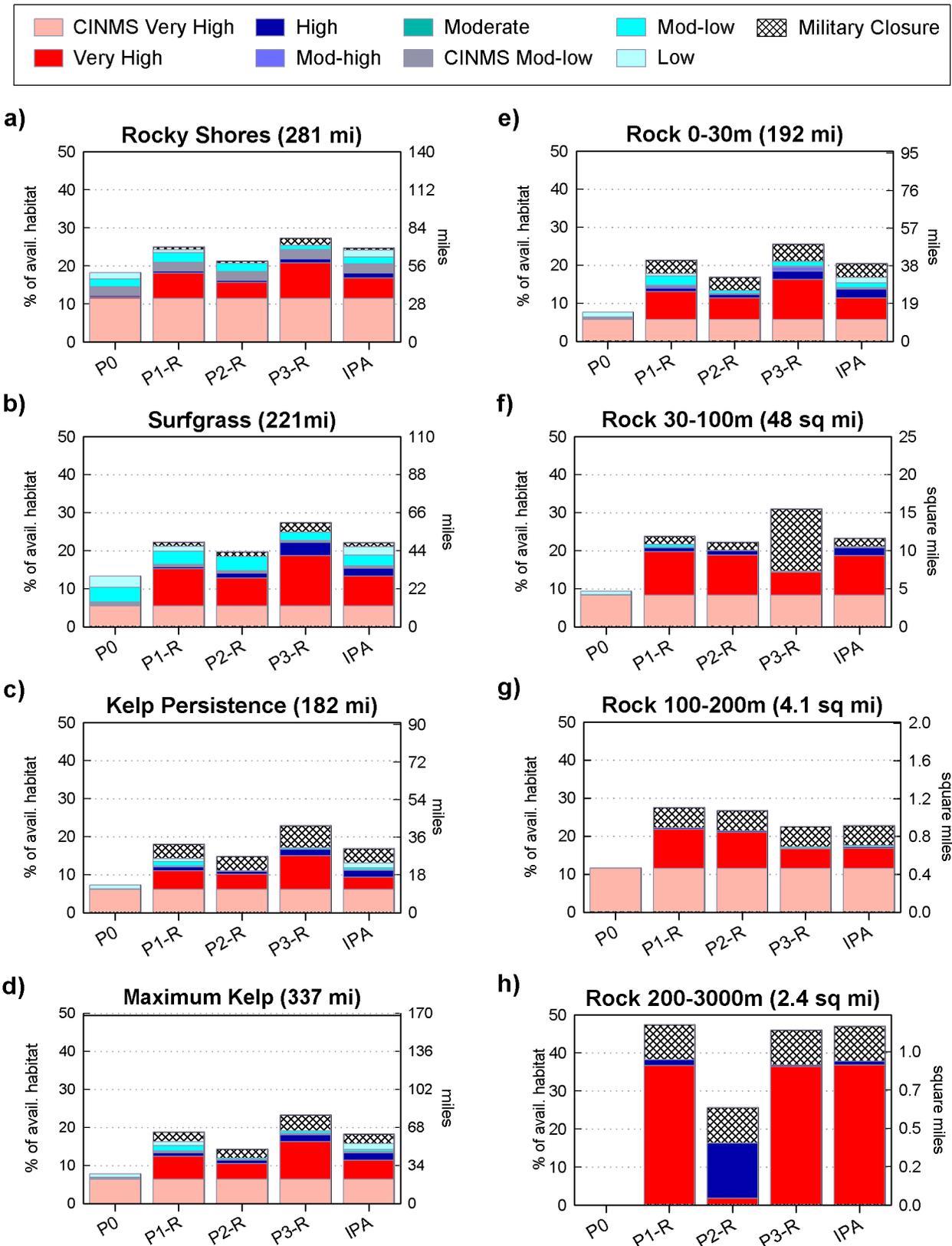
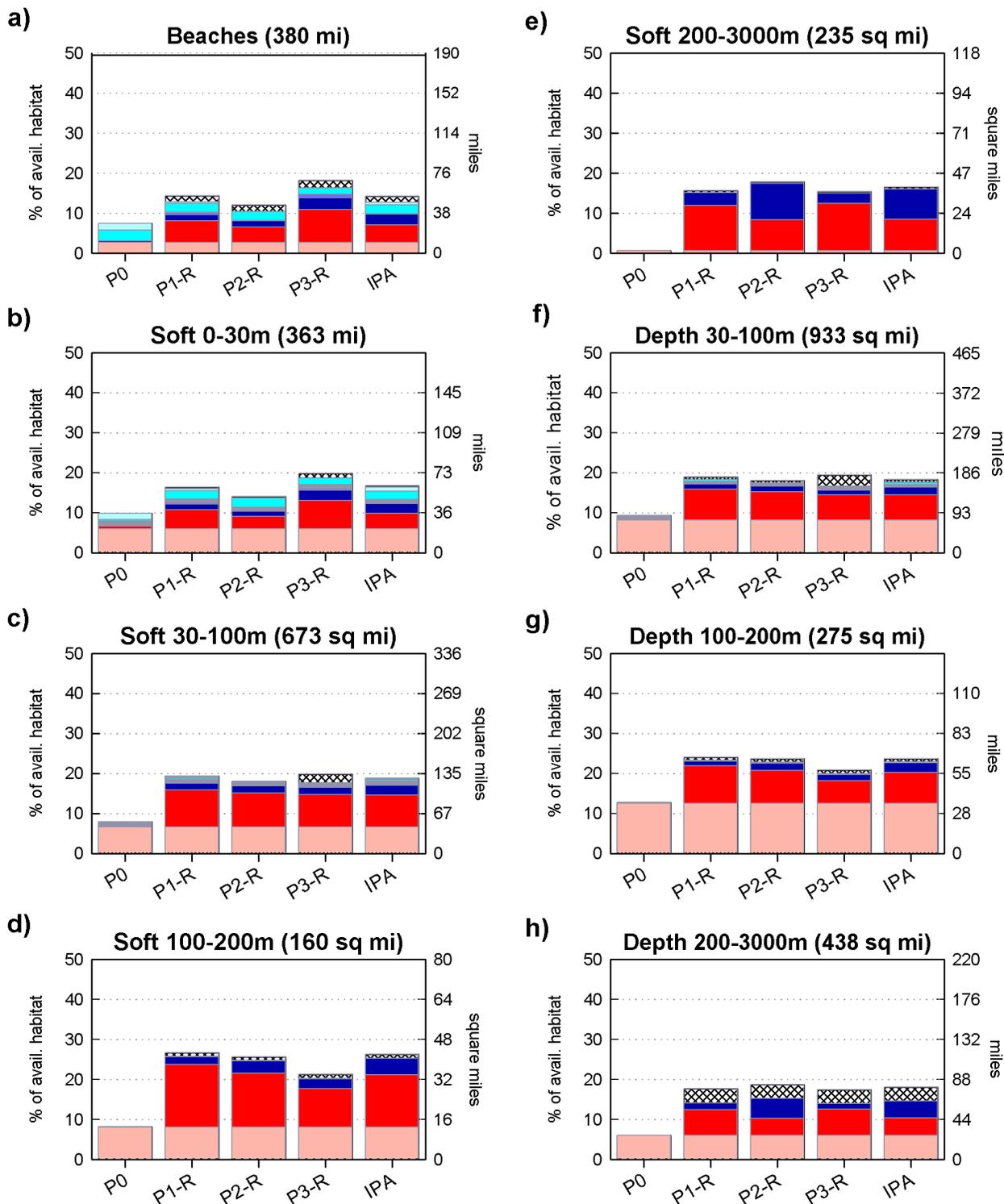
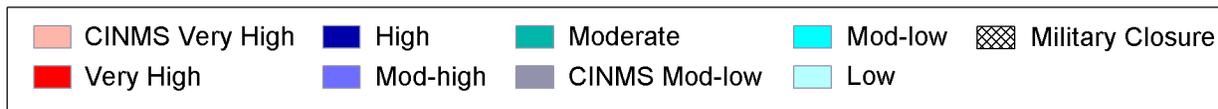


Figure 2.1: Habitat Representation - Rocky Habitats



**Figure 2.2: Habitat Representation - Soft Bottom Habitats**



**Figure 2.3: Habitat Representation - Estuarine Habitats**

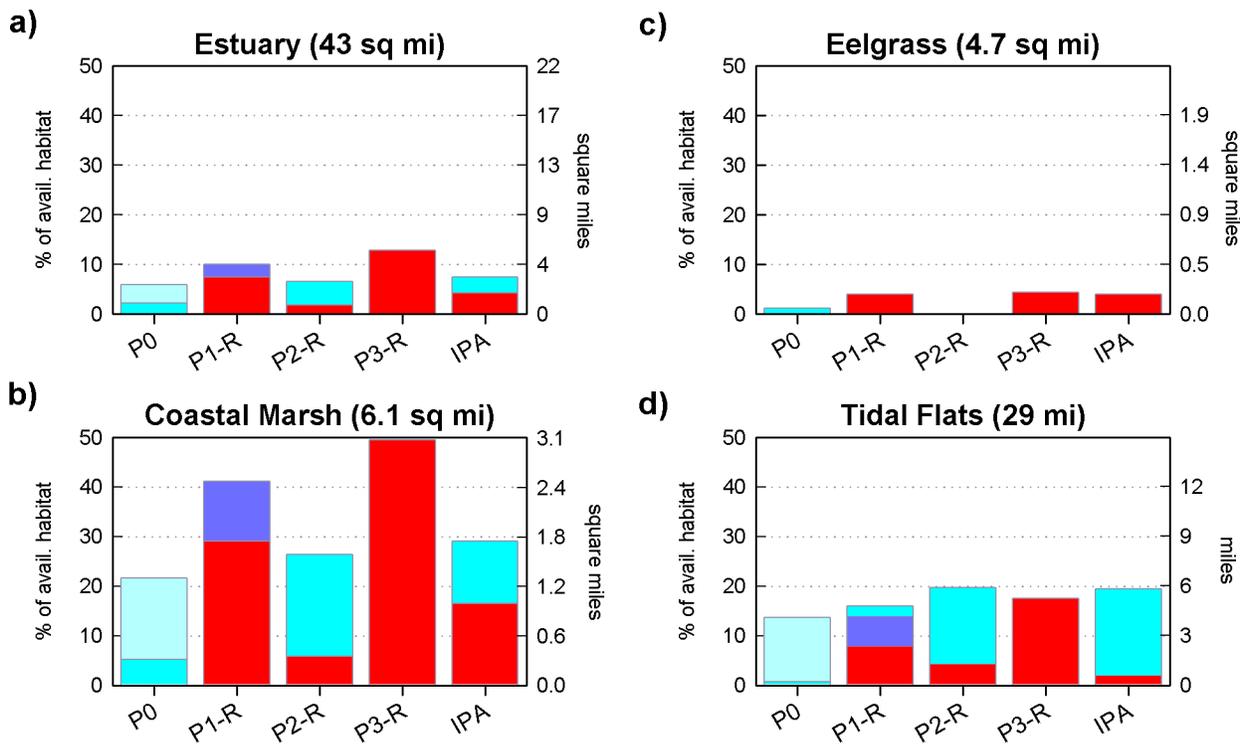
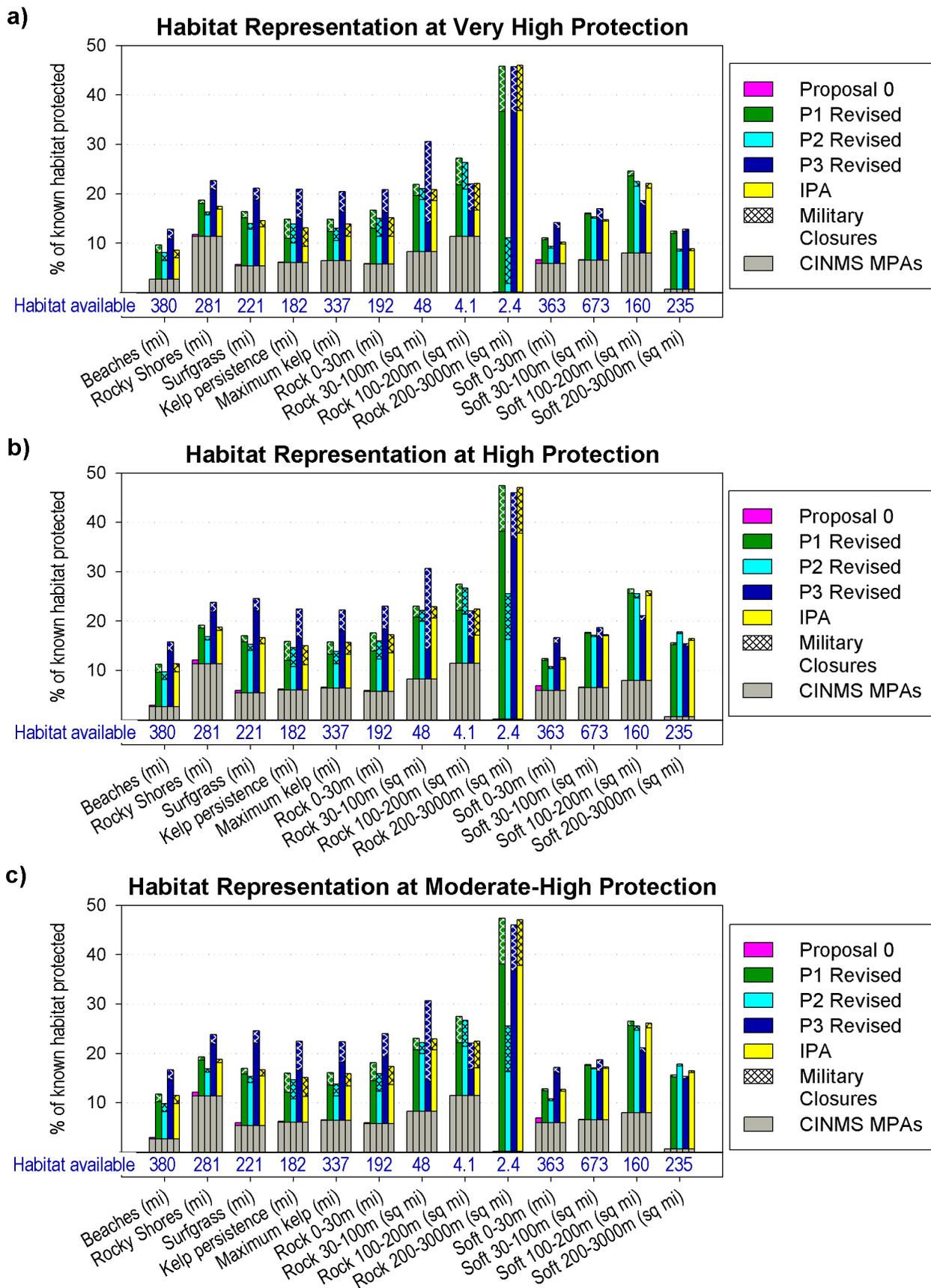


Figure 2.4: Habitat Representation Overview - Open Coast Habitats



**Figure 2.5: Habitat Representation Overview - Estuarine Habitats**

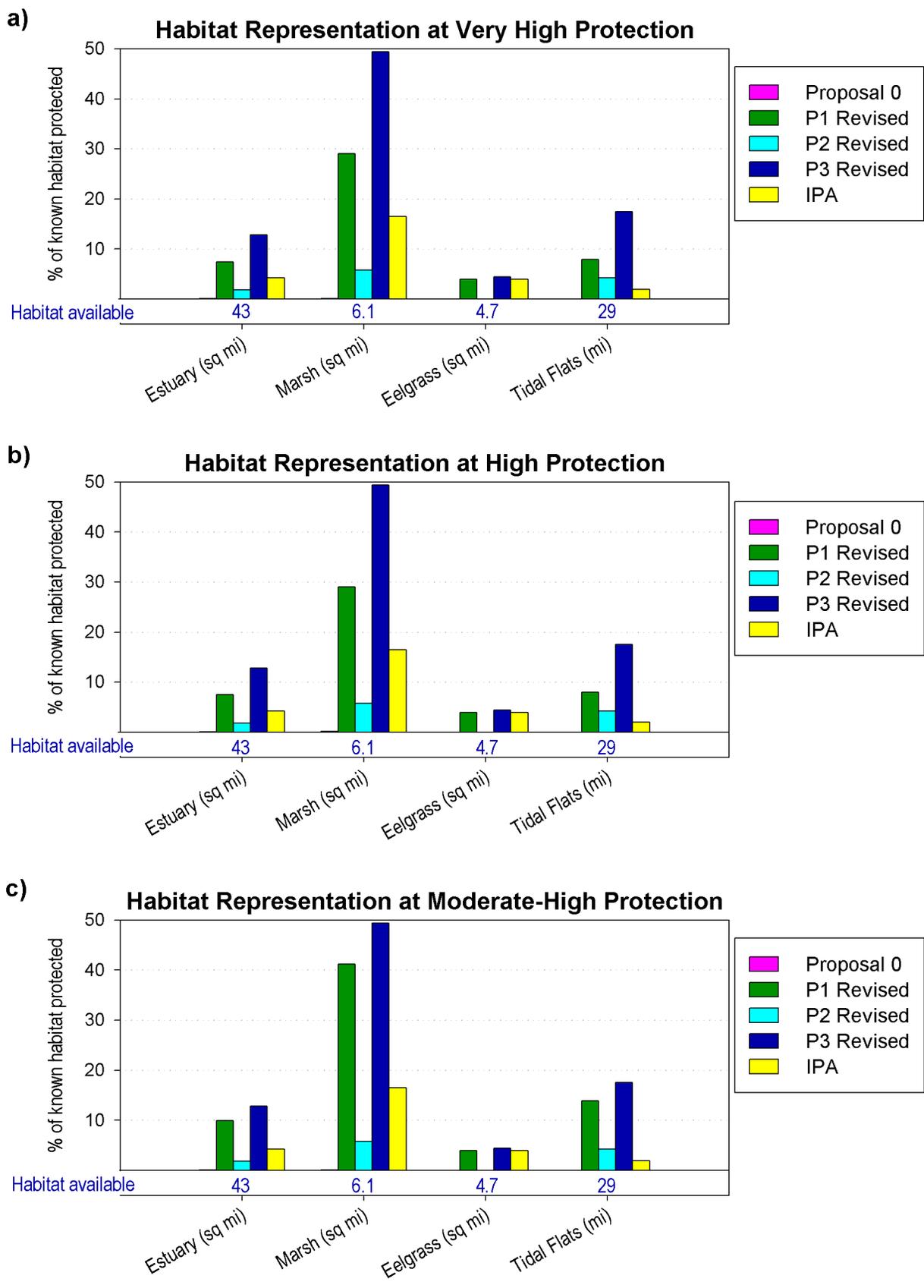


Figure 3.1: Habitat Replication by Study Region - Open Coast Habitats

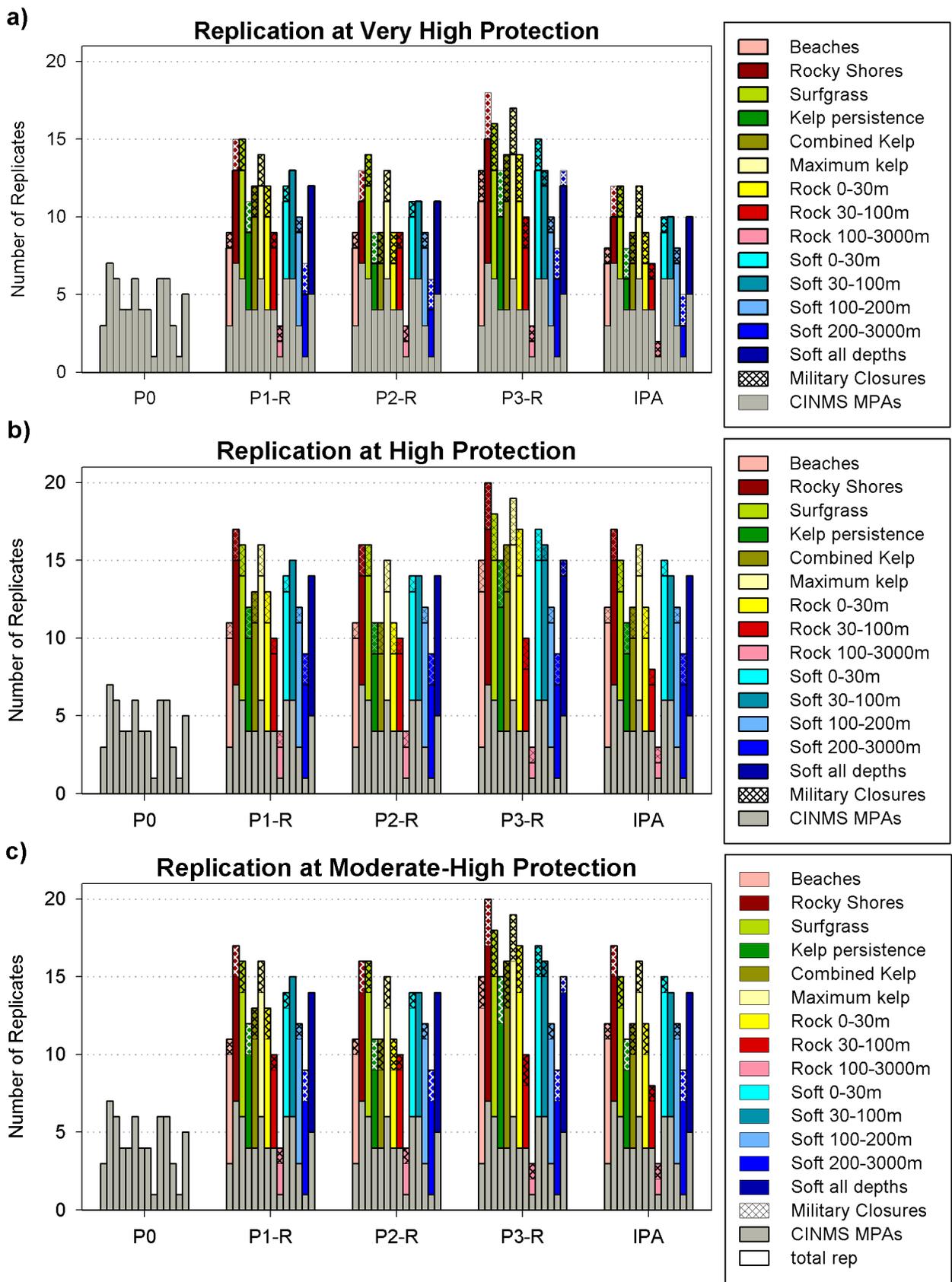
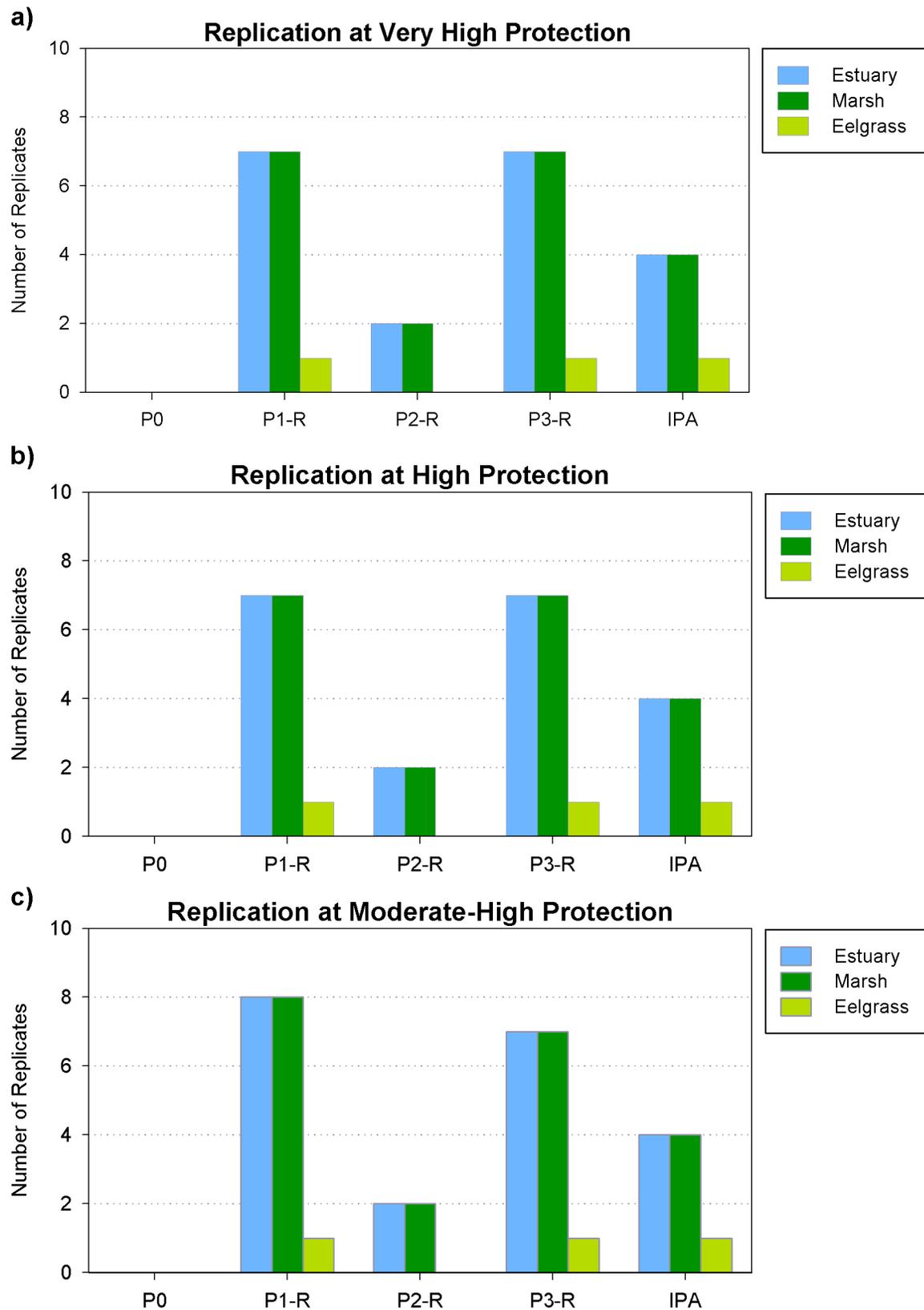


Figure 3.2: Habitat Replication by Study Region - Estuarine Habitats



**Figure 3.3: Habitat Replication by Study Region - Depth Zones**

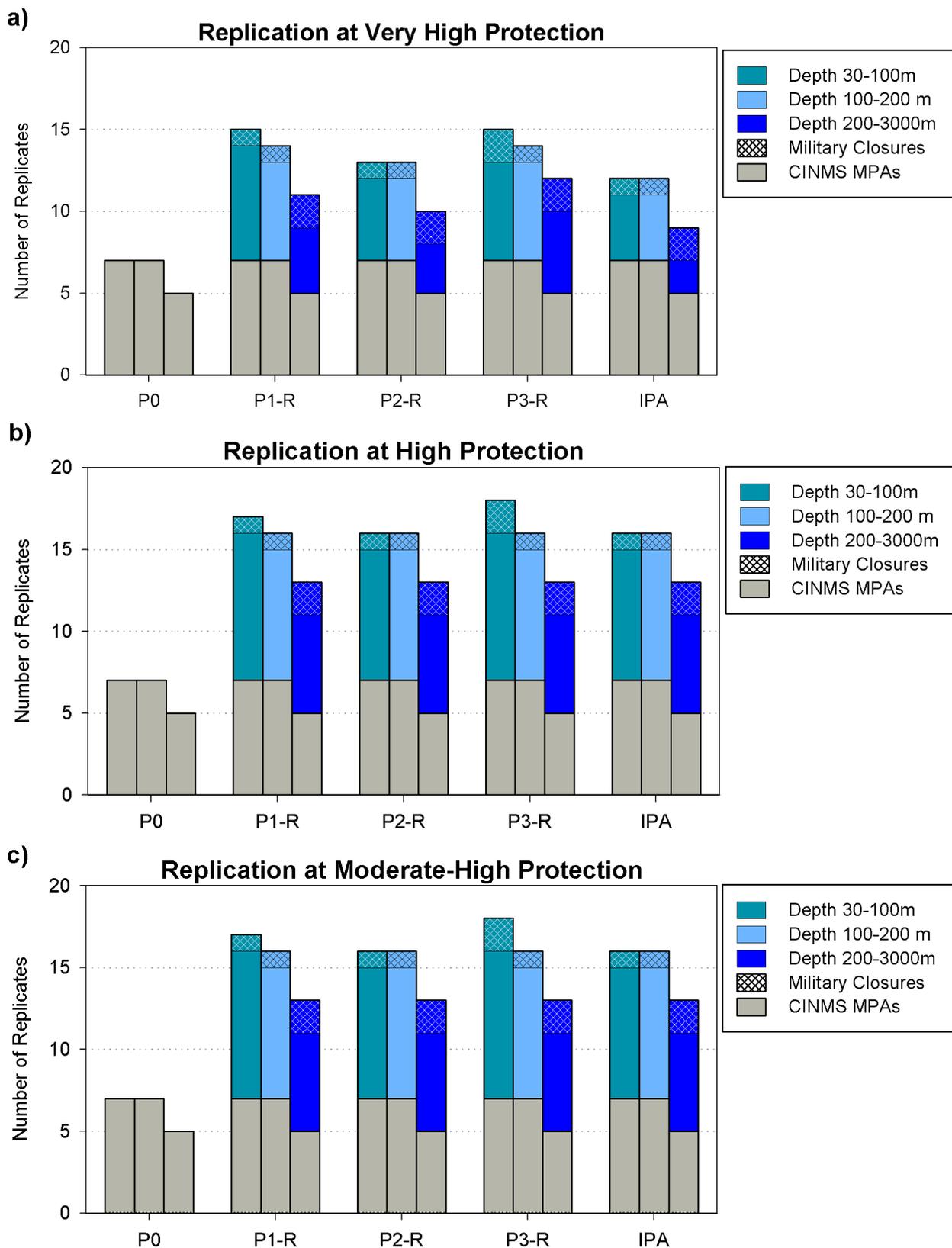


Figure 3.4: Habitat Replication by Bioregion

a	Rocky Shores (5)			Surfgrass (5)			Kelp persist. (5)			Maximum kelp (5)			Rock 0-30m (5)			Rock 30-100m (5)			Rock 100-3000m (4)		
	VH	H	MH	VH	H	MH	VH	H	MH	VH	H	MH	VH	H	MH	VH	H	MH	VH	H	MH
Proposal 0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1
P1 Revised	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	4	4
P2 Revised	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	4	4
P3 Revised	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	3	3
IPA	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	4	4	4	2	3	3

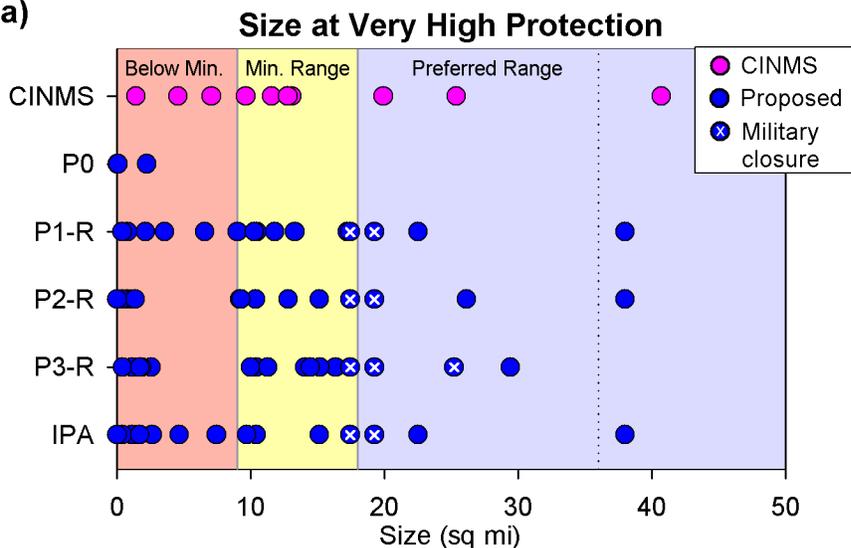
b	Beaches (5)			Soft 0-30m (5)			Soft 30-100m (5)			Soft 100-200m (5)			Soft 200-3000m (4)			Soft all depths (5)		
	VH	H	MH	VH	H	MH	VH	H	MH	VH	H	MH	VH	H	MH	VH	H	MH
Proposal 0	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	2	2	2
P1 Revised	5	5	5	5	5	5	4	5	5	5	5	5	3	4	4	5	5	5
P2 Revised	5	5	5	5	5	5	4	5	5	5	5	5	3	4	4	4	5	5
P3 Revised	5	5	5	5	5	5	5	5	5	5	5	5	4	4	4	5	5	5
IPA	5	5	5	5	5	5	4	5	5	5	5	5	3	4	4	4	5	5

c	Estuary (2)			Marsh (2)			Eelgrass (1)		
	VH	H	MH	VH	H	MH	VH	H	MH
Proposal 0	0	0	0	0	0	0	0	0	0
P1 Revised	2	2	2	2	2	2	1	1	1
P2 Revised	2	2	2	2	2	2	0	0	0
P3 Revised	2	2	2	2	2	2	1	1	1
IPA	2	2	2	2	2	2	1	1	1

d	Depth 30-100m (5)			Depth 100-200m (5)			Depth 200-3000m (5)		
	VH	H	MH	VH	H	MH	VH	H	MH
Proposal 0	2	2	2	2	2	2	2	2	2
P1 Revised	5	5	5	5	5	5	4	5	5
P2 Revised	5	5	5	5	5	5	4	5	5
P3 Revised	5	5	5	5	5	5	5	5	5
IPA	5	5	5	5	5	5	4	5	5

Figure 4.1: Size

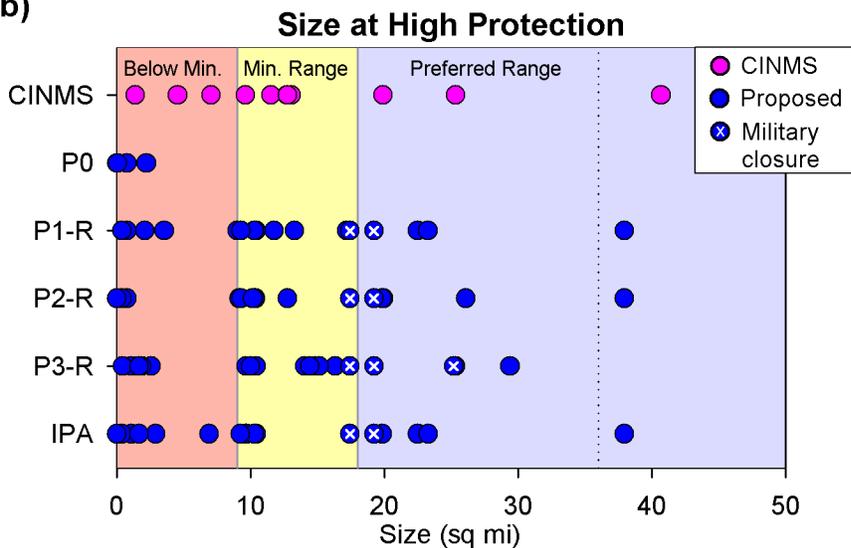
a)



Number of MPA Clusters* at Very High Protection				
Proposal	Below Min. Size	Min. Size Range	Pref. Size Range	Total # Clusters
CINMS MPAs	3	5	3	11
Proposal 0	3	0	0	3
P1 Revised	5	6(1)	2(1)	13(2)
P2 Revised	4	5(1)	2(1)	11(2)
P3 Revised	5	7(1)	1(2)	13(3)
IPA	7	3(1)	2(1)	12(2)

\* Clusters tabulated above do not include CINMS MPAs in proposals, ( ) indicates military closures

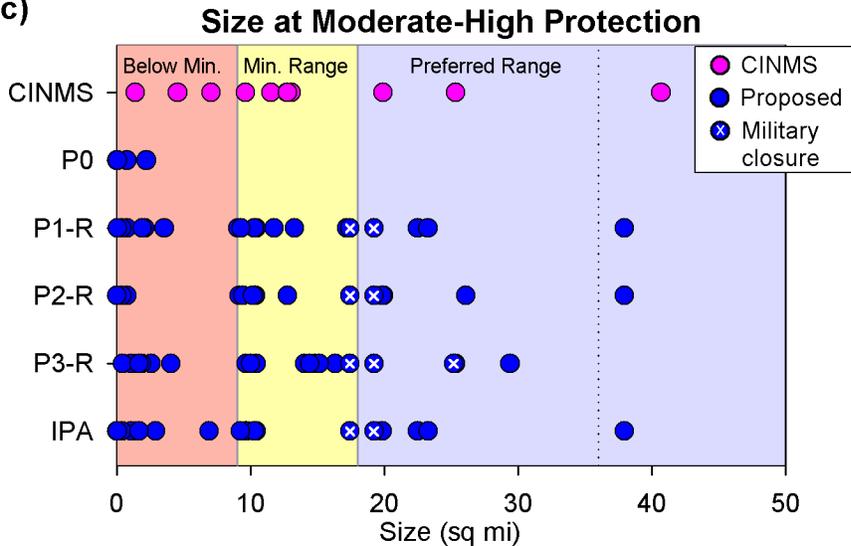
b)



Number of MPA Clusters* at High Protection				
Proposal	Below Min. Size	Min. Size Range	Pref. Size Range	Total # Clusters
CINMS MPAs	3	5	3	11
Proposal 0	4	0	0	4
P1 Revised	4	7(1)	3(1)	14(2)
P2 Revised	3	6(1)	4(1)	13(2)
P3 Revised	5	8(1)	2(2)	15(3)
IPA	6	5(1)	4(1)	15(2)

\* Clusters tabulated above do not include CINMS MPAs in proposals, ( ) indicates military closures

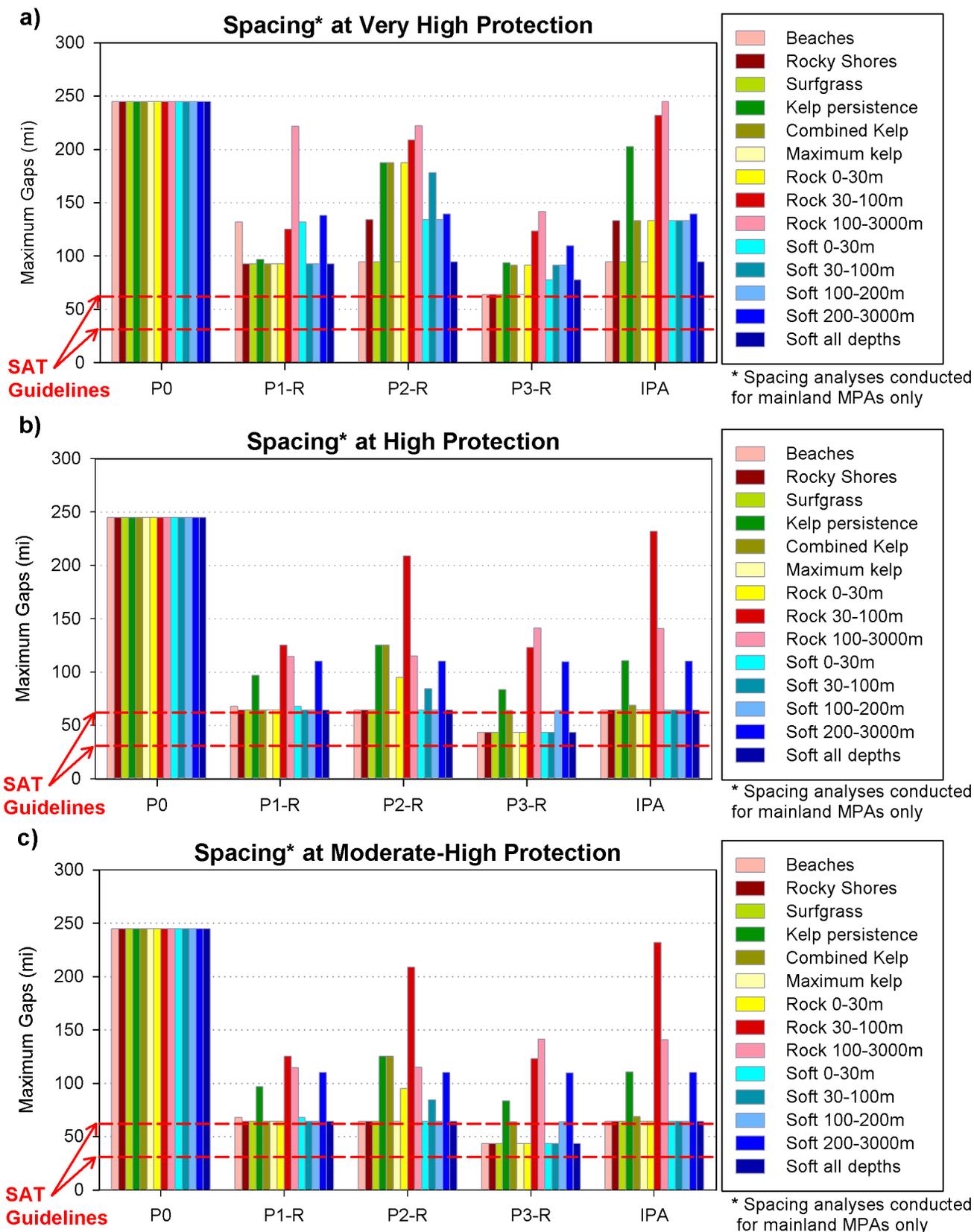
c)



Number of MPA Clusters* at Moderate-High Protection				
Proposal	Below Min. Size	Min. Size Range	Pref. Size Range	Total # Clusters
CINMS MPAs	3	5	3	11
Proposal 0	4	0	0	4
P1 Revised	6	7(1)	3(1)	16(2)
P2 Revised	3	6(1)	4(1)	13(2)
P3 Revised	6	8(1)	2(2)	16(3)
IPA	7	5(1)	4(1)	16(2)

\* Clusters tabulated above do not include CINMS MPAs in proposals, ( ) indicates military closures

Figure 5.1: Spacing



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**Table 5.2a: Gaps that exceed the SAT spacing guidelines and their locations - SCRSG Proposal 1 Revised**

P1 Revised		Very High Protection					
Habitat	# gaps over guideline	gap #1	gap #1 location	gap #2	gap #2 location	gap #3	gap #3 location
Beaches	1	132	Helo SMR to Laguna Cluster				
Rocky Shores	2	92	Helo SMR to Palos Verdes SMR	63	Laguna Cluster to Ocean Beach Cluster		
Surfgrass	1	92	Helo SMR to Palos Verdes SMR				
Kelp persistence	2	97	Palos Verdes SMR to Ocean Beach Cluster	92	Helo SMR to Palos Verdes SMR		
Combined kelp	2	92	Helo SMR to Palos Verdes SMR	63	Laguna Cluster to Ocean Beach Cluster		
Maximum kelp	2	92	Helo SMR to Palos Verdes SMR	63	Laguna Cluster to Ocean Beach Cluster		
hard 0 - 30m proxy	1	92	Helo SMR to Palos Verdes SMR				
hard 30 - 100m	2	125	Point Conception SMR to Palos Verdes SMR	97	Palos Verdes SMR to Ocean Beach Cluster		
hard 100 - 3000m	1	222	Vandenberg SMR CCSR to Del Mar SMR				
soft 0 - 30m proxy	1	132	Helo SMR to Laguna Cluster				
soft 30 - 100m	1	92	Helo SMR to Palos Verdes SMR				
soft 100 - 200m	1	92	Helo SMR to Palos Verdes SMR				
soft 200 - 3000m	1	138	Vandenberg SMR CCSR to Palos Verdes SMR				
soft 0 - 3000m	1	92	Helo SMR to Palos Verdes SMR				
Estuary	NA						
Coastal Marsh (area)	NA						
Eelgrass	NA						
Tidal Flats	NA						

P1 Revised		High Protection					
Habitat	# gaps over guideline	gap #1	gap #1 location	gap #2	gap #2 location	gap #3	gap #3 location
Beaches	2	68	Sumo Cluster to Laguna Cluster	64	Helo SMR to Sumo Cluster		
Rocky Shores	2	64	Helo SMR to Sumo Cluster	63	Laguna Cluster to Ocean Beach Cluster		
Surfgrass	1	64	Helo SMR to Sumo Cluster				
Kelp persistence	2	97	Palos Verdes SMR to Ocean Beach Cluster	64	Helo SMR to Sumo Cluster		
Combined kelp	2	64	Helo SMR to Sumo Cluster	63	Laguna Cluster to Ocean Beach Cluster		
Maximum kelp	2	64	Helo SMR to Sumo Cluster	63	Laguna Cluster to Ocean Beach Cluster		
hard 0 - 30m proxy	1	64	Helo SMR to Sumo Cluster				
hard 30 - 100m	2	125	Point Conception SMR to Palos Verdes SMR	97	Palos Verdes SMR to Ocean Beach Cluster		
hard 100 - 3000m	2	114	Sumo Cluster to Del Mar SMR	110	Vandenberg SMR CCSR to Sumo Cluster		
soft 0 - 30m proxy	2	68	Sumo Cluster to Laguna Cluster	64	Helo SMR to Sumo Cluster		
soft 30 - 100m	1	64	Helo SMR to Sumo Cluster				
soft 100 - 200m	1	64	Helo SMR to Sumo Cluster				
soft 200 - 3000m	1	110	Vandenberg SMR CCSR to Sumo Cluster				
soft 0 - 3000m	1	64	Helo SMR to Sumo Cluster				
Estuary	NA						
Coastal Marsh (area)	NA						
Eelgrass	NA						
Tidal Flats	NA						

P1 Revised		Moderate-High Protection					
Habitat	# gaps over guideline	gap #1	gap #1 location	gap #2	gap #2 location	gap #3	gap #3 location
Beaches	2	68	Sumo Cluster to Laguna Cluster	64	Helo SMR to Sumo Cluster		
Rocky Shores	2	64	Helo SMR to Sumo Cluster	63	Laguna Cluster to Ocean Beach Cluster		
Surfgrass	1	64	Helo SMR to Sumo Cluster				
Kelp persistence	2	97	Palos Verdes SMR to Ocean Beach Cluster	64	Helo SMR to Sumo Cluster		
Combined kelp	2	64	Helo SMR to Sumo Cluster	63	Laguna Cluster to Ocean Beach Cluster		
Maximum kelp	2	64	Helo SMR to Sumo Cluster	63	Laguna Cluster to Ocean Beach Cluster		
hard 0 - 30m proxy	1	64	Helo SMR to Sumo Cluster				
hard 30 - 100m	2	125	Point Conception SMR to Palos Verdes SMR	97	Palos Verdes SMR to Ocean Beach Cluster		
hard 100 - 3000m	2	114	Sumo Cluster to Del Mar SMR	110	Vandenberg SMR CCSR to Sumo Cluster		
soft 0 - 30m proxy	2	68	Sumo Cluster to Laguna Cluster	64	Helo SMR to Sumo Cluster		
soft 30 - 100m	1	64	Helo SMR to Sumo Cluster				
soft 100 - 200m	1	64	Helo SMR to Sumo Cluster				
soft 200 - 3000m	1	110	Vandenberg SMR CCSR to Sumo Cluster				
soft 0 - 3000m	1	64	Helo SMR to Sumo Cluster				
Estuary	NA						
Coastal Marsh (area)	NA						
Eelgrass	NA						
Tidal Flats	NA						

SAT Evaluation of Final MPA Proposals from the South Coast Study Region:  
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**Table 5.2b: Gaps that exceed the SAT spacing guidelines and their locations - SCRSG Proposal 2 Revised**

P2 Revised		Very High Protection					
Habitat	# gaps over guideline	gap #1	gap #1 location	gap #2	gap #2 location	gap #3	gap #3 location
Beaches	1	95	Campus Point SMR to Point Vicente Cluster				
Rocky Shores	1	134	Campus Point SMR to Laguna Cluster				
Surfgrass	1	95	Campus Point SMR to Point Vicente Cluster				
Kelp persistence	1	188	Campus Point SMR to Sunset Cliffs Cluster				
Combined kelp	1	188	Campus Point SMR to Sunset Cliffs Cluster				
Maximum kelp	1	95	Campus Point SMR to Point Vicente Cluster				
hard 0 - 30m proxy	1	188	Campus Point SMR to Sunset Cliffs Cluster				
hard 30 - 100m	1	209	Point Conception SMR to Del Mar SMR				
hard 100 - 3000m	1	222	Vandenberg SMR CCSR to Del Mar SMR				
soft 0 - 30m proxy	1	134	Campus Point SMR to Laguna Cluster				
soft 30 - 100m	1	178	Campus Point SMR to Del Mar SMR				
soft 100 - 200m	1	134	Campus Point SMR to Laguna Cluster				
soft 200 - 3000m	1	140	Vandenberg SMR CCSR to Point Vicente Cluster				
soft 0 - 3000m	1	95	Campus Point SMR to Point Vicente Cluster				
Estuary	NA						
Coastal Marsh (area)	NA						
Eelgrass	NA						
Tidal Flats	NA						

P2 Revised		High Protection					
Habitat	# gaps over guideline	gap #1	gap #1 location	gap #2	gap #2 location	gap #3	gap #3 location
Beaches	1	64	Campus Point SMR to Point Dume SMCA				
Rocky Shores	1	64	Campus Point SMR to Point Dume SMCA				
Surfgrass	1	64	Campus Point SMR to Point Dume SMCA				
Kelp persistence	2	125	Point Dume SMCA to Sunset Cliffs Cluster	64	Campus Point SMR to Point Dume SMCA		
Combined kelp	2	125	Point Dume SMCA to Sunset Cliffs Cluster	64	Campus Point SMR to Point Dume SMCA		
Maximum kelp	1	64	Campus Point SMR to Point Dume SMCA				
hard 0 - 30m proxy	2	95	Point Vicente Cluster to Sunset Cliffs Cluster	64	Campus Point SMR to Point Dume SMCA		
hard 30 - 100m	1	209	Point Conception SMR to Del Mar SMR				
hard 100 - 3000m	2	115	Point Dume SMCA to Del Mar SMR	110	Vandenberg SMR CCSR to Point Dume SMCA		
soft 0 - 30m proxy	1	64	Campus Point SMR to Point Dume SMCA				
soft 30 - 100m	2	84	Point Vicente Cluster to Del Mar SMR	64	Campus Point SMR to Point Dume SMCA		
soft 100 - 200m	1	64	Campus Point SMR to Point Dume SMCA				
soft 200 - 3000m	1	110	Vandenberg SMR CCSR to Point Dume SMCA				
soft 0 - 3000m	1	64	Campus Point SMR to Point Dume SMCA				
Estuary	NA						
Coastal Marsh (area)	NA						
Eelgrass	NA						
Tidal Flats	NA						

P2 Revised		Moderate-High Protection					
Habitat	# gaps over guideline	gap #1	gap #1 location	gap #2	gap #2 location	gap #3	gap #3 location
Beaches	1	64	Campus Point SMR to Point Dume SMCA				
Rocky Shores	1	64	Campus Point SMR to Point Dume SMCA				
Surfgrass	1	64	Campus Point SMR to Point Dume SMCA				
Kelp persistence	2	125	Point Dume SMCA to Sunset Cliffs Cluster	64	Campus Point SMR to Point Dume SMCA		
Combined kelp	2	125	Point Dume SMCA to Sunset Cliffs Cluster	64	Campus Point SMR to Point Dume SMCA		
Maximum kelp	1	64	Campus Point SMR to Point Dume SMCA				
hard 0 - 30m proxy	2	95	Point Vicente Cluster to Sunset Cliffs Cluster	64	Campus Point SMR to Point Dume SMCA		
hard 30 - 100m	1	209	Point Conception SMR to Del Mar SMR				
hard 100 - 3000m	2	115	Point Dume SMCA to Del Mar SMR	110	Vandenberg SMR CCSR to Point Dume SMCA		
soft 0 - 30m proxy	1	64	Campus Point SMR to Point Dume SMCA				
soft 30 - 100m	2	84	Point Vicente Cluster to Del Mar SMR	64	Campus Point SMR to Point Dume SMCA		
soft 100 - 200m	1	64	Campus Point SMR to Point Dume SMCA				
soft 200 - 3000m	1	110	Vandenberg SMR CCSR to Point Dume SMCA				
soft 0 - 3000m	1	64	Campus Point SMR to Point Dume SMCA				
Estuary	NA						
Coastal Marsh (area)	NA						
Eelgrass	NA						
Tidal Flats	NA						

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**Table 5.2c: Gaps that exceed the SAT spacing guidelines and their locations - SCRSG Proposal 3 Revised**

P3 Revised		Very High Protection					
Habitat	# gaps over guideline	gap #1	gap #1 location	gap #2	gap #2 location	gap #3	gap #3 location
Beaches	1	64	UCSB SMR to Point Dume Cluster				
Rocky Shores	1	64	UCSB SMR to Point Dume Cluster				
Surfgrass	1	64	UCSB SMR to Point Dume Cluster				
Kelp persistence	2	94	Palos Verdes SMR to South La Jolla Reefs SMR	91	UCSB SMR to Palos Verdes SMR		
Combined kelp	1	91	UCSB SMR to Palos Verdes SMR				
Maximum kelp	1	64	UCSB SMR to Point Dume Cluster				
hard 0 - 30m proxy	1	91	UCSB SMR to Palos Verdes SMR				
hard 30 - 100m	2	123	Point Conception SMR to Palos Verdes SMR	94	Palos Verdes SMR to South La Jolla Reefs SMR		
hard 100 - 3000m	2	141	Point Dume Cluster to South Boundary of SCSR	109	Vandenberg SMR CCSR to Point Dume Cluster		
soft 0 - 30m proxy	2	77	Laguna Cluster to South Boundary of SCSR	64	UCSB SMR to Point Dume Cluster		
soft 30 - 100m	1	91	UCSB SMR to Palos Verdes SMR				
soft 100 - 200m	2	91	UCSB SMR to Palos Verdes SMR	77	Laguna Cluster to South Boundary of SCSR		
soft 200 - 3000m	2	109	Vandenberg SMR CCSR to Point Dume Cluster	77	Laguna Cluster to South Boundary of SCSR		
soft 0 - 3000m	2	77	Laguna Cluster to South Boundary of SCSR	64	UCSB SMR to Point Dume Cluster		
Estuary	NA						
Coastal Marsh (area)	NA						
Eelgrass	NA						
Tidal Flats	NA						

P3 Revised		High Protection					
Habitat	# gaps over guideline	gap #1	gap #1 location	gap #2	gap #2 location	gap #3	gap #3 location
Beaches	0						
Rocky Shores	0						
Surfgrass	0						
Kelp persistence	2	83	Palos Verdes SMR to Swami's SMCA	64	UCSB SMR to Point Dume Cluster		
Combined kelp	1	64	UCSB SMR to Point Dume Cluster				
Maximum kelp	0						
hard 0 - 30m proxy	0						
hard 30 - 100m	2	123	Point Conception SMR to Palos Verdes SMR	94	Palos Verdes SMR to South La Jolla Reefs SMR		
hard 100 - 3000m	2	141	Point Dume Cluster to South Boundary of SCSR	109	Vandenberg SMR CCSR to Point Dume Cluster		
soft 0 - 30m proxy	0						
soft 30 - 100m	0						
soft 100 - 200m	1	64	UCSB SMR to Point Dume Cluster				
soft 200 - 3000m	1	109	Vandenberg SMR CCSR to Point Dume Cluster				
soft 0 - 3000m	0						
Estuary	NA						
Coastal Marsh (area)	NA						
Eelgrass	NA						
Tidal Flats	NA						

P3 Revised		Moderate-High Protection					
Habitat	# gaps over guideline	gap #1	gap #1 location	gap #2	gap #2 location	gap #3	gap #3 location
Beaches	0						
Rocky Shores	0						
Surfgrass	0						
Kelp persistence	2	83	Palos Verdes SMR to Swami's SMCA	64	UCSB SMR to Point Dume Cluster		
Combined kelp	1	64	UCSB SMR to Point Dume Cluster				
Maximum kelp	0						
hard 0 - 30m proxy	0						
hard 30 - 100m	2	123	Point Conception SMR to Palos Verdes SMR	94	Palos Verdes SMR to South La Jolla Reefs SMR		
hard 100 - 3000m	2	141	Point Dume Cluster to South Boundary of SCSR	109	Vandenberg SMR CCSR to Point Dume Cluster		
soft 0 - 30m proxy	0						
soft 30 - 100m	0						
soft 100 - 200m	1	64	UCSB SMR to Point Dume Cluster				
soft 200 - 3000m	1	109	Vandenberg SMR CCSR to Point Dume Cluster				
soft 0 - 3000m	0						
Estuary	NA						
Coastal Marsh (area)	NA						
Eelgrass	NA						
Tidal Flats	NA						

SAT Evaluation of Final MPA Proposals from the South Coast Study Region:  
Habitat Representation, Habitat Replication, MPA Size and MPA Spacing Analyses  
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**Table 5.2d: Gaps that exceed the SAT spacing guidelines and their locations - Integrated Preferred Alternative**

IPA		Very High Protection					
Habitat	# gaps over guideline	gap #1	gap #1 location	gap #2	gap #2 location	gap #3	gap #3 location
Beaches	2	94	Campus Point SMR to Point Vicente Cluster	78	Laguna Cluster to South Boundary of SCSR		
Rocky Shores	2	133	Campus Point SMR to Laguna Cluster	78	Laguna Cluster to South Boundary of SCSR		
Surfgrass	2	94	Campus Point SMR to Point Vicente Cluster	78	Laguna Cluster to South Boundary of SCSR		
Kelp persistence	1	202	Campus Point SMR to South Boundary of SCSR				
Combined kelp	2	133	Campus Point SMR to Laguna Cluster	78	Laguna Cluster to South Boundary of SCSR		
Maximum kelp	2	94	Campus Point SMR to Point Vicente Cluster	78	Laguna Cluster to South Boundary of SCSR		
hard 0 - 30m proxy	2	133	Campus Point SMR to Laguna Cluster	78	Laguna Cluster to South Boundary of SCSR		
hard 30 - 100m	1	232	Point Conception SMR to South Boundary of SCSR				
hard 100 - 3000m	1	245	Vandenberg SMR CCSR to South Boundary of SCSR				
soft 0 - 30m proxy	2	133	Campus Point SMR to Laguna Cluster	78	Laguna Cluster to South Boundary of SCSR		
soft 30 - 100m	2	133	Campus Point SMR to Laguna Cluster	78	Laguna Cluster to South Boundary of SCSR		
soft 100 - 200m	2	133	Campus Point SMR to Laguna Cluster	78	Laguna Cluster to South Boundary of SCSR		
soft 200 - 3000m	2	140	Vandenberg SMR CCSR to Point Vicente Cluster	78	Laguna Cluster to South Boundary of SCSR		
soft 0 - 3000m	2	94	Campus Point SMR to Point Vicente Cluster	78	Laguna Cluster to South Boundary of SCSR		
Estuary	NA						
Coastal Marsh (area)	NA						
Eelgrass	NA						
Tidal Flats	NA						

IPA		High Protection					
Habitat	# gaps over guideline	gap #1	gap #1 location	gap #2	gap #2 location	gap #3	gap #3 location
Beaches	1	64	Campus Point SMR to Point Dume Cluster				
Rocky Shores	1	64	Campus Point SMR to Point Dume Cluster				
Surfgrass	1	64	Campus Point SMR to Point Dume Cluster				
Kelp persistence	2	111	Point Dume Cluster to Swami's SMCA	64	Campus Point SMR to Point Dume Cluster		
Combined kelp	2	69	Point Dume Cluster to Laguna Cluster	64	Campus Point SMR to Point Dume Cluster		
Maximum kelp	1	64	Campus Point SMR to Point Dume Cluster				
hard 0 - 30m proxy	1	64	Campus Point SMR to Point Dume Cluster				
hard 30 - 100m	1	232	Point Conception SMR to South Boundary of SCSR				
hard 100 - 3000m	2	141	Point Dume Cluster to South Boundary of SCSR	110	Vandenberg SMR CCSR to Point Dume Cluster		
soft 0 - 30m proxy	1	64	Campus Point SMR to Point Dume Cluster				
soft 30 - 100m	1	64	Campus Point SMR to Point Dume Cluster				
soft 100 - 200m	1	64	Campus Point SMR to Point Dume Cluster				
soft 200 - 3000m	1	110	Vandenberg SMR CCSR to Point Dume Cluster				
soft 0 - 3000m	1	64	Campus Point SMR to Point Dume Cluster				
Estuary	NA						
Coastal Marsh (area)	NA						
Eelgrass	NA						
Tidal Flats	NA						

IPA		Moderate-High Protection					
Habitat	# gaps over guideline	gap #1	gap #1 location	gap #2	gap #2 location	gap #3	gap #3 location
Beaches	1	64	Campus Point SMR to Point Dume Cluster				
Rocky Shores	1	64	Campus Point SMR to Point Dume Cluster				
Surfgrass	1	64	Campus Point SMR to Point Dume Cluster				
Kelp persistence	2	111	Point Dume Cluster to Swami's SMCA	64	Campus Point SMR to Point Dume Cluster		
Combined kelp	2	69	Point Dume Cluster to Laguna Cluster	64	Campus Point SMR to Point Dume Cluster		
Maximum kelp	1	64	Campus Point SMR to Point Dume Cluster				
hard 0 - 30m proxy	1	64	Campus Point SMR to Point Dume Cluster				
hard 30 - 100m	1	232	Point Conception SMR to South Boundary of SCSR				
hard 100 - 3000m	2	141	Point Dume Cluster to South Boundary of SCSR	110	Vandenberg SMR CCSR to Point Dume Cluster		
soft 0 - 30m proxy	1	64	Campus Point SMR to Point Dume Cluster				
soft 30 - 100m	1	64	Campus Point SMR to Point Dume Cluster				
soft 100 - 200m	1	64	Campus Point SMR to Point Dume Cluster				
soft 200 - 3000m	1	110	Vandenberg SMR CCSR to Point Dume Cluster				
soft 0 - 3000m	1	64	Campus Point SMR to Point Dume Cluster				
Estuary	NA						
Coastal Marsh (area)	NA						
Eelgrass	NA						
Tidal Flats	NA						