

Marine Life Protection Act Initiative



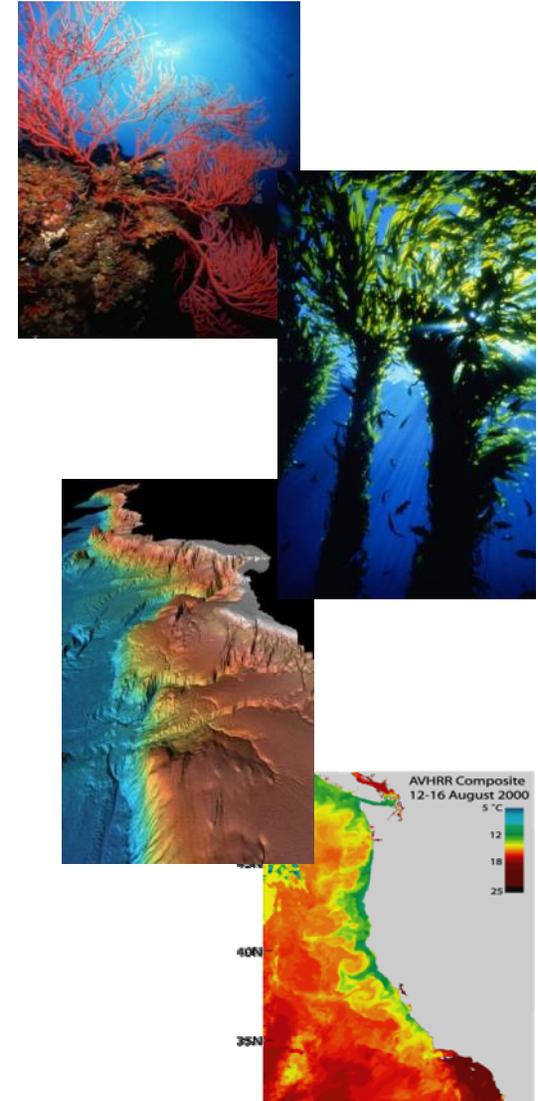
Habitat Evaluations of the Round 3 MPA Proposals for the MLPA South Coast Study Region

Presentation to the MLPA Master Plan Science Advisory Team
October 6, 2009 • Los Angeles, CA
Presented by Dr. Mark Carr



MLPA Goals*

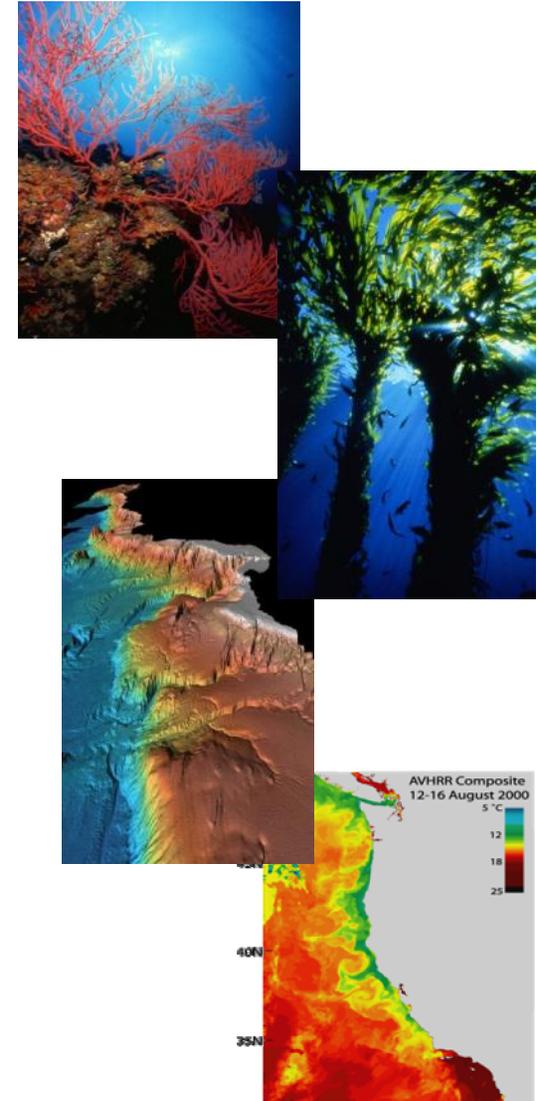
1. To protect the natural diversity and function of **marine ecosystems**.
2. To help sustain and restore **marine life populations**.
3. To improve **recreational, educational, and study opportunities** in areas with minimal human disturbance.
4. To protect representative and unique **marine life habitats**.
5. Clear objectives, effective management, adequate enforcement, sound science.
6. To ensure that MPAs are designed and managed as **a network**.



* Note that this language represents a summary of the MLPA goals

MLPA Goals*: Habitats

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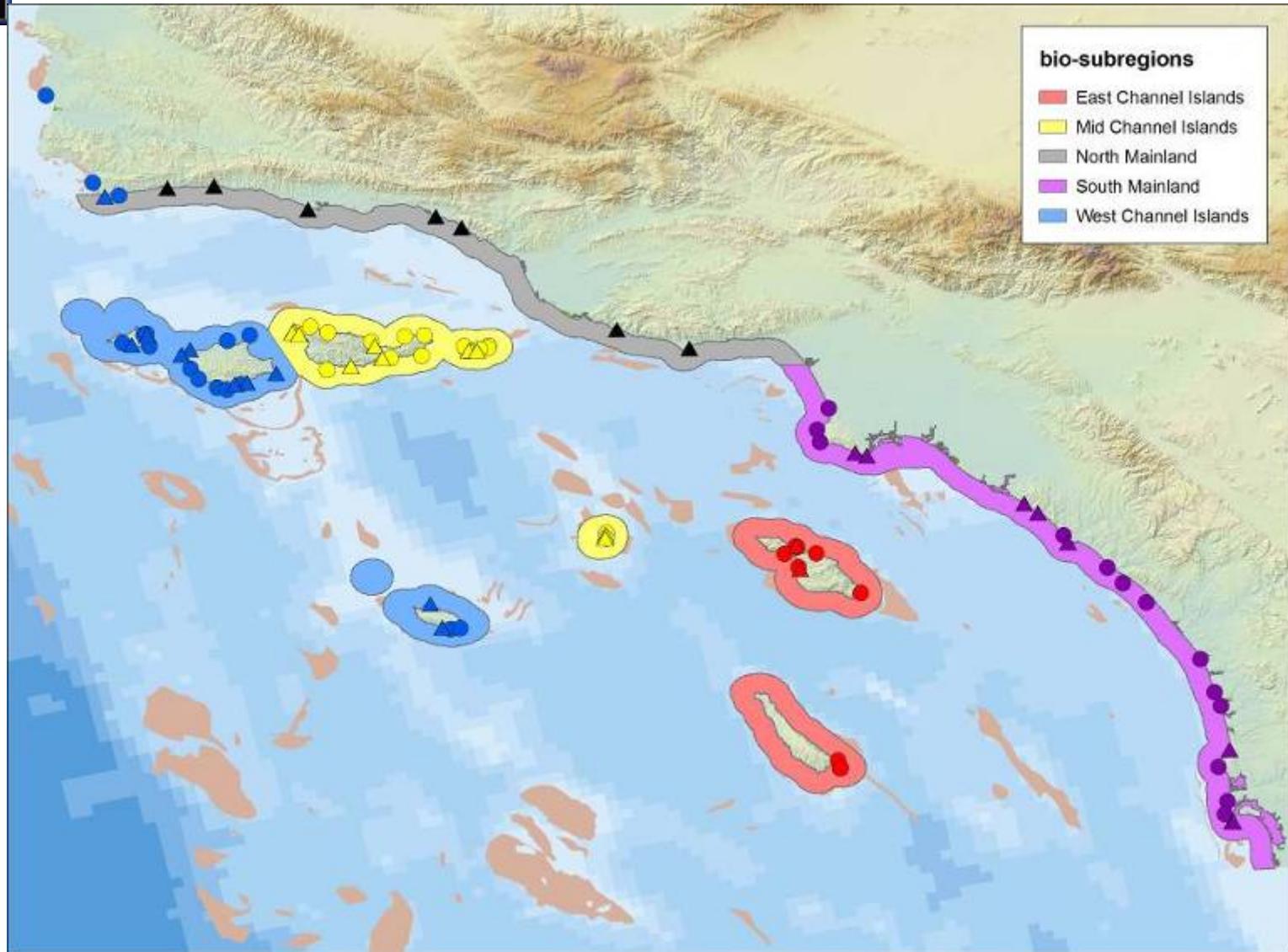


Evaluation: Habitats

Key Questions for Each Draft Array/Proposal

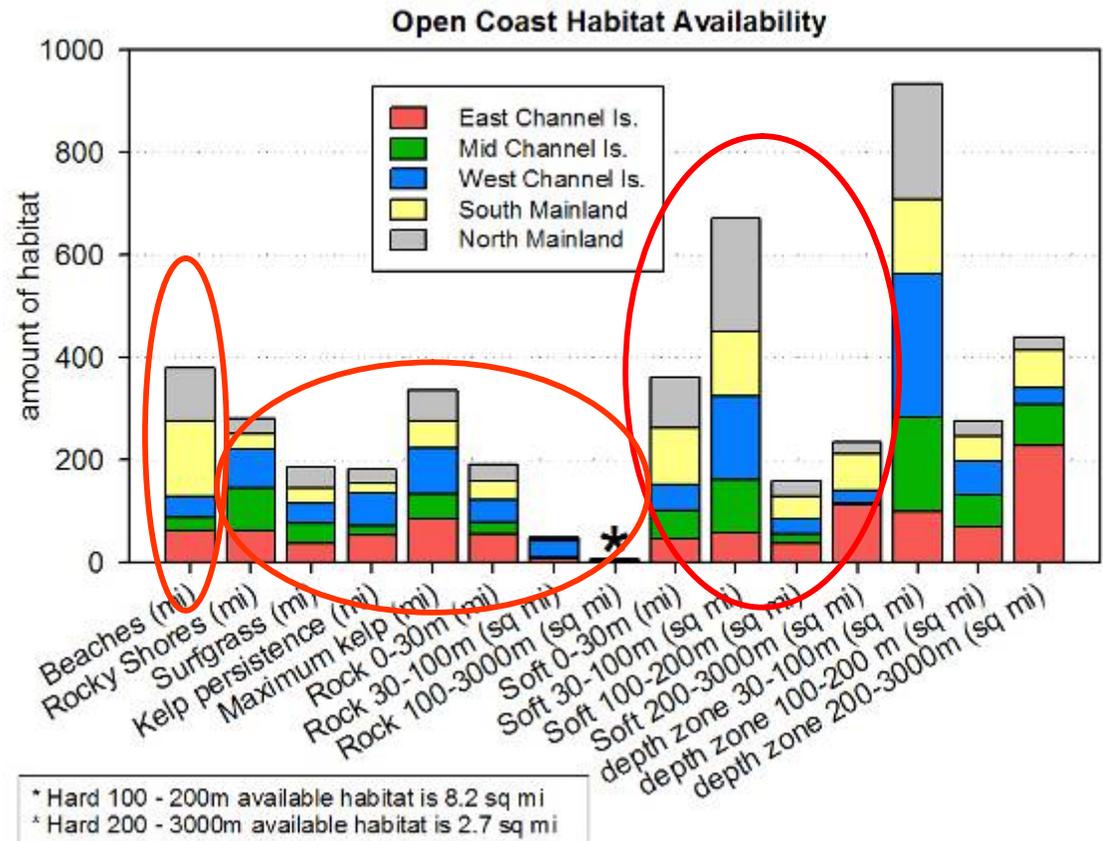
1. How well are key habitat types represented in draft MPA proposals?
2. What are the proposed levels of protection for these habitat types?
3. How well are habitats and levels of protection distributed across the study region?

South Coast Evaluation Bioregions



Results: Habitat Availability

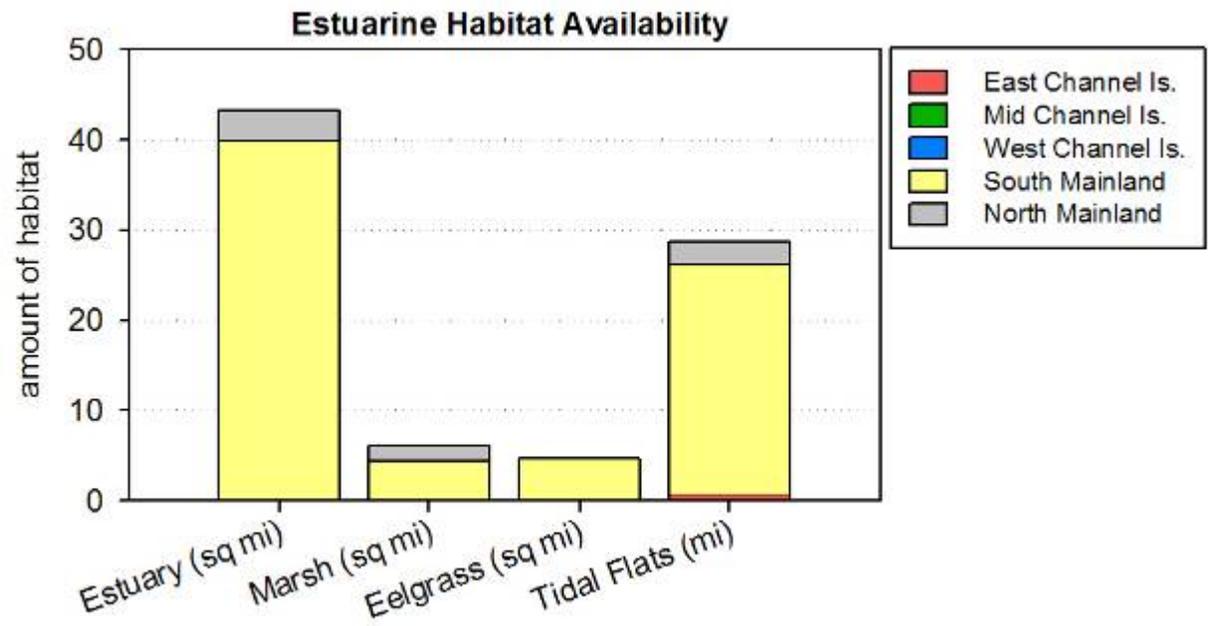
- Soft-bottom habitats are very abundant across the study region, especially on the mainland.
- Rocky habitats are more abundant on the islands than the mainland.
- Deep rock (>100 meters) is rare.



Results: Habitat Availability



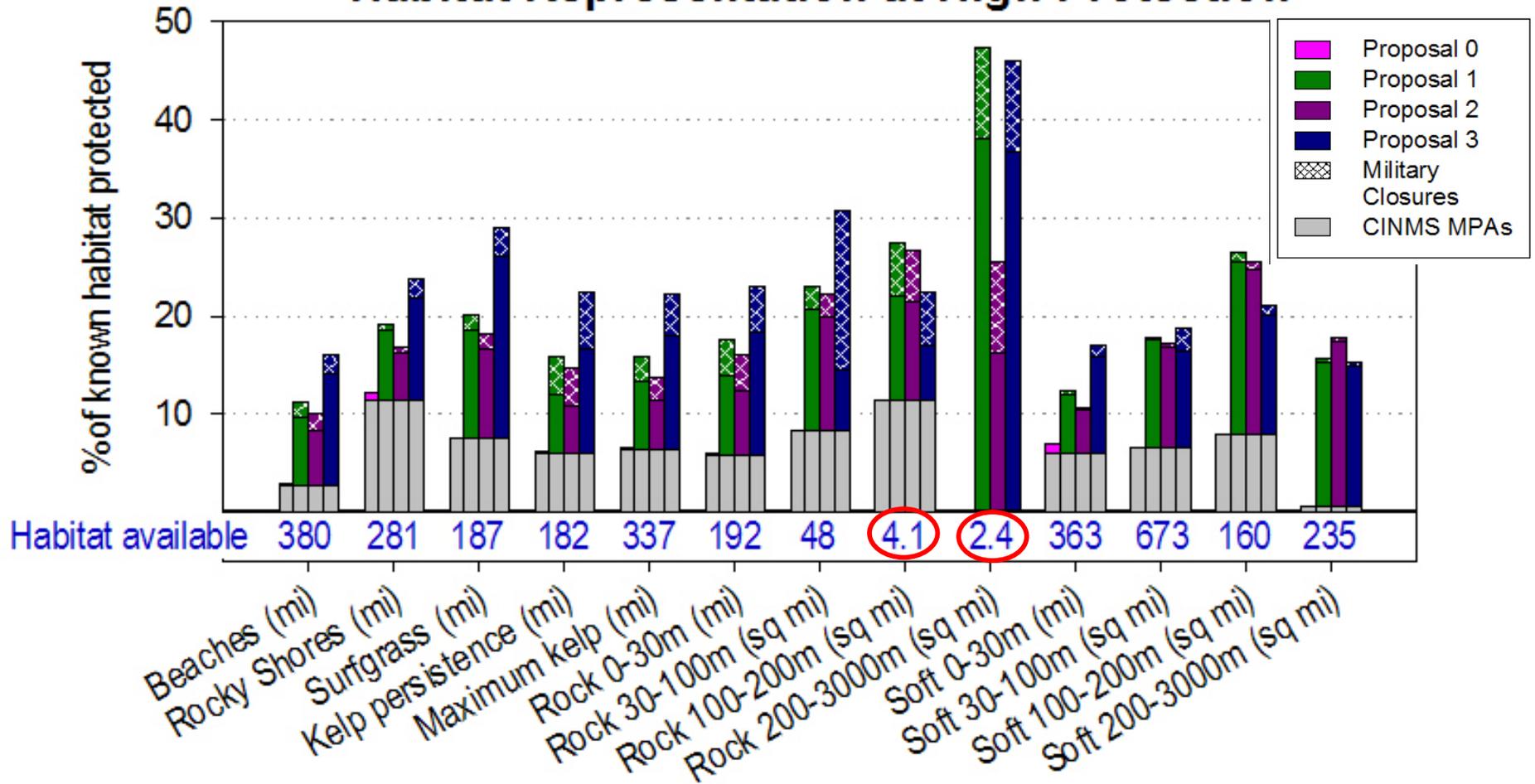
- Estuarine habitats occur almost exclusively on the mainland.
- The south mainland bioregion contains the majority of estuarine habitats.
- The “estuaries” layer includes harbors.
- Eelgrass represented here does not include open-coast eelgrass.





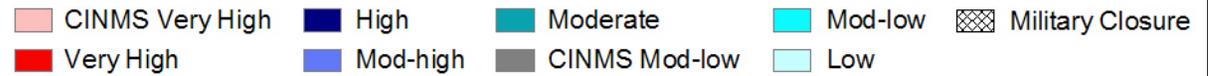
Results: Habitat Representation

Habitat Representation at High Protection



Proposals included areas where rare habitats are known to exist

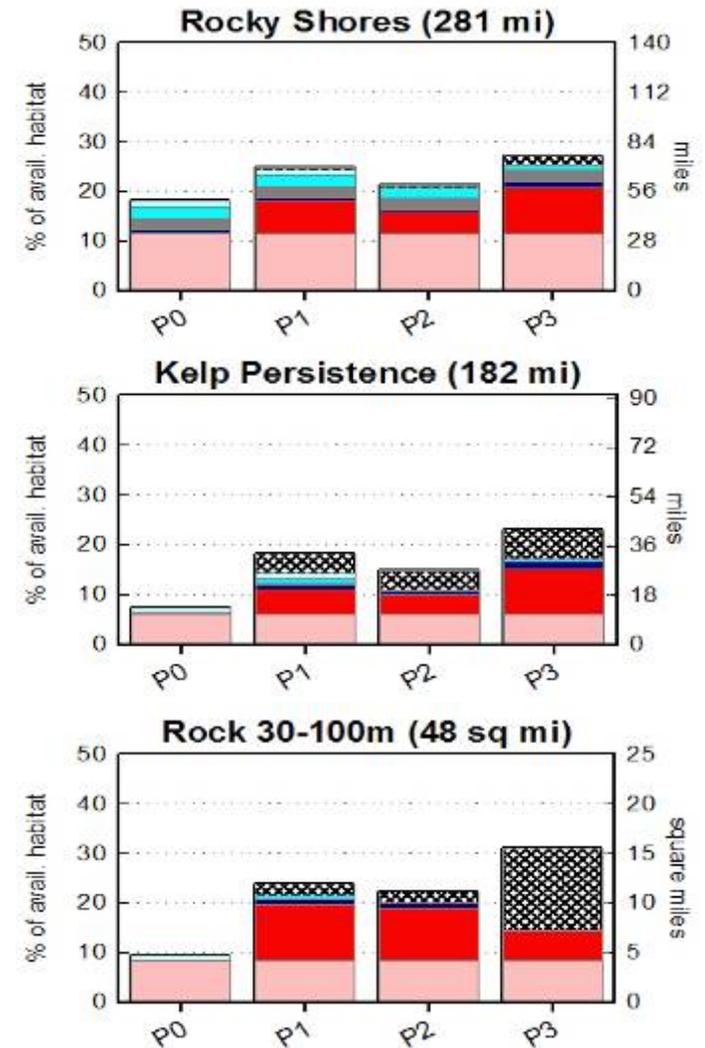
Results: Habitat Representation



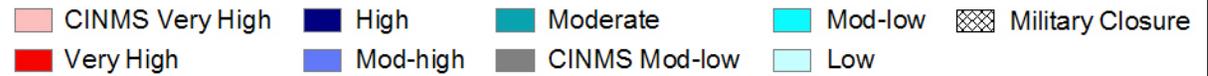
Rocky Habitats

- 19-24% of rocky shores at or above mod-high protection.*
Largest proportions protected in the W Channel Islands and N and S Mainland bioregions.
- 15-22% of “persistent” kelp (at least 3 of 7 years) at or above mod-high protection.*
Distribution of protection varies by proposal.
Other measures of nearshore rock show similar patterns.
- 22-31% of 30-100m rock at or above mod-high protection.*
Much of this habitat is included at San Nicolas Island and Begg Rock.

* includes military closures



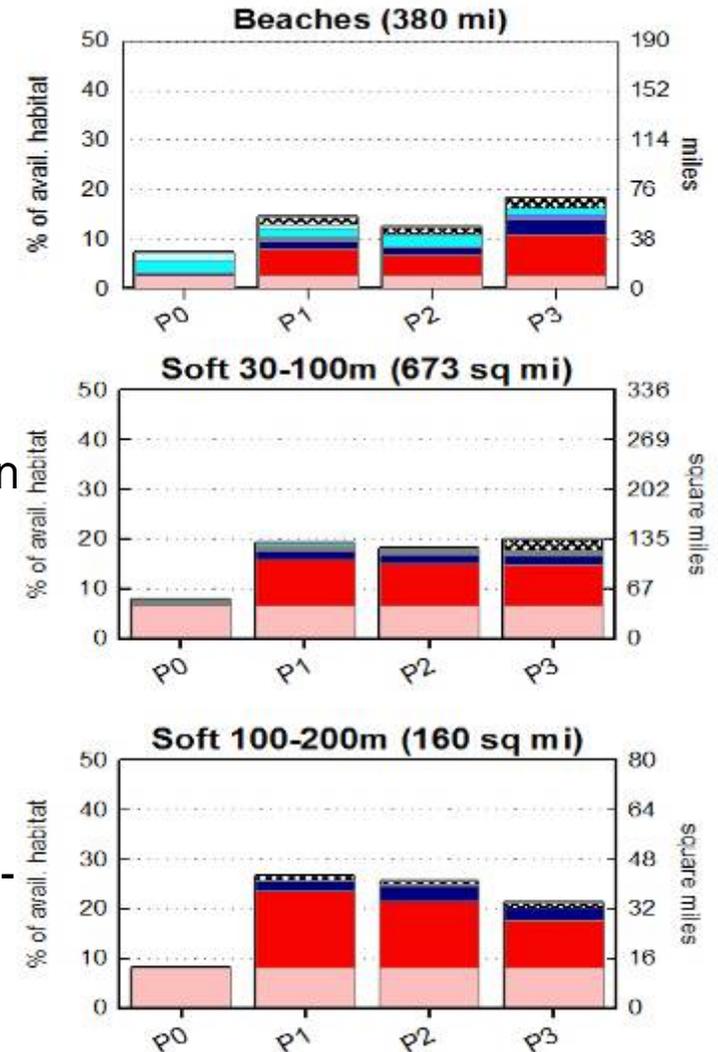
Results: Habitat Representation



Soft Bottom Habitats

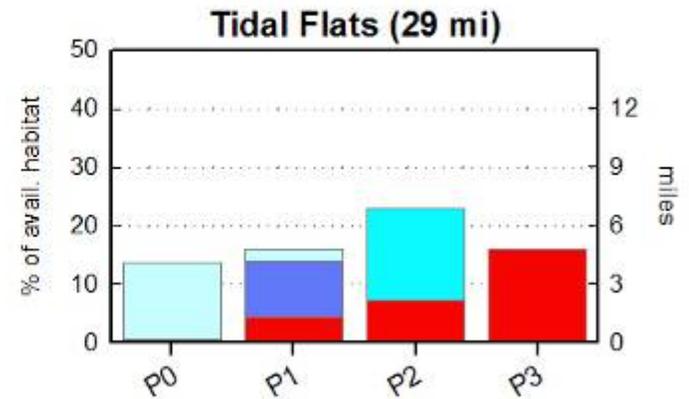
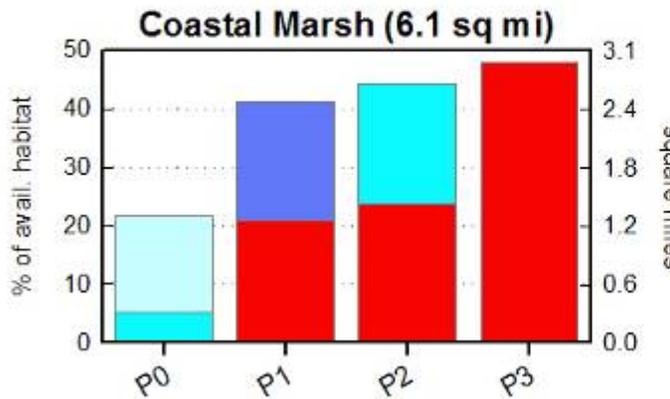
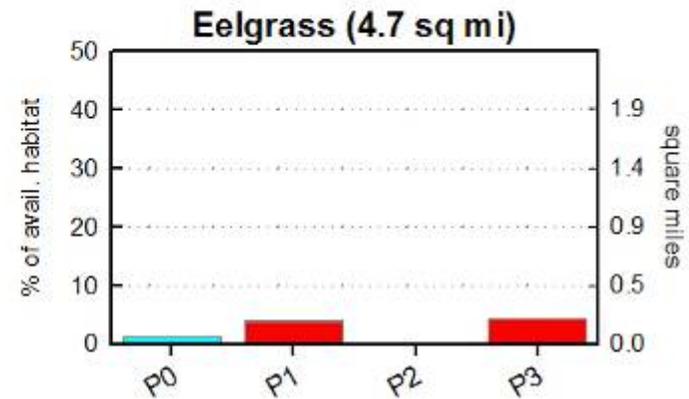
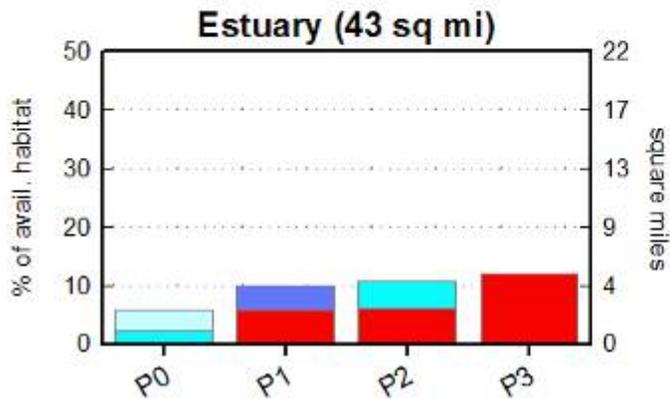
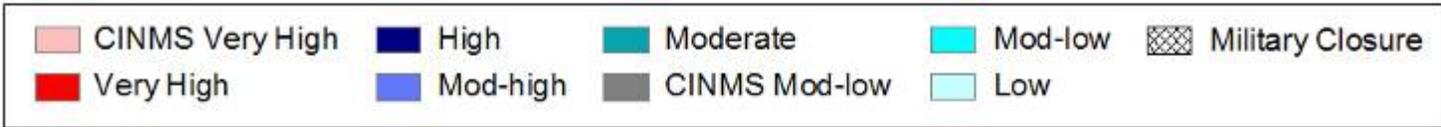
- Large areas of soft-bottom habitats available
low percentages = large areas.
- 10-17% of beaches at or above mod-high protection.*
Largest proportion protected in the E. Channel Islands bioregion where beaches are less common
- 18-19% of 30-100m soft bottom at or above mod-high protection.*
Largest proportion protected in the W. Channel Islands bioregion.
- 21-27% of 100-200m soft bottom at or above mod-high protection.*

* includes military closures





Results: Habitat Representation



Mod-high = catch and release
 Mod-low = shore fishing

Results: Habitat Representation

Rare and Unique Habitats

Table summarizes the number of MPAs at or above mod-high protection that are known to contain rare and unique habitats.

Proposal	Open coast eelgrass	Elk kelp	Oil seeps	Sulfide vents	Canyons
CINMS	4	0	1	0	1
Proposal 0	2	1	0	0	1
Proposal 1	9(1)	2(1)	3	0	5
Proposal 2	9(1)	1(1)	3	0	5
Proposal 3	10(1)	3(1)	5	0	6

Totals for each proposal include habitats captured in the CINMS MPAs

Only one sulfide vent location is currently mapped in the study region (at Palos Verdes).

()
indicates
military
closures



Results: Habitat Representation

Summary

-  All proposals have at least 10% of all open-coast habitats in MPAs at or above high protection.
-  In general, Round 3 proposals include a greater proportion of open-coast habitats in MPAs as compared to Round 2.
-  Ranking of proposals for habitat representation across all habitats.
 $P3 > P1 > P2$
-  In general, proposals include greater proportions of rocky habitats as compared to soft-bottom habitats.



Methods: Habitat Replication

Guidelines for replication:



3-5 replicates of habitat per biogeographic region (i.e., the study region)



MPA or cluster must meet the minimum size guidelines (9 square miles)



Habitat must meet the threshold identified to encompass 90% of biodiversity in that habitat type

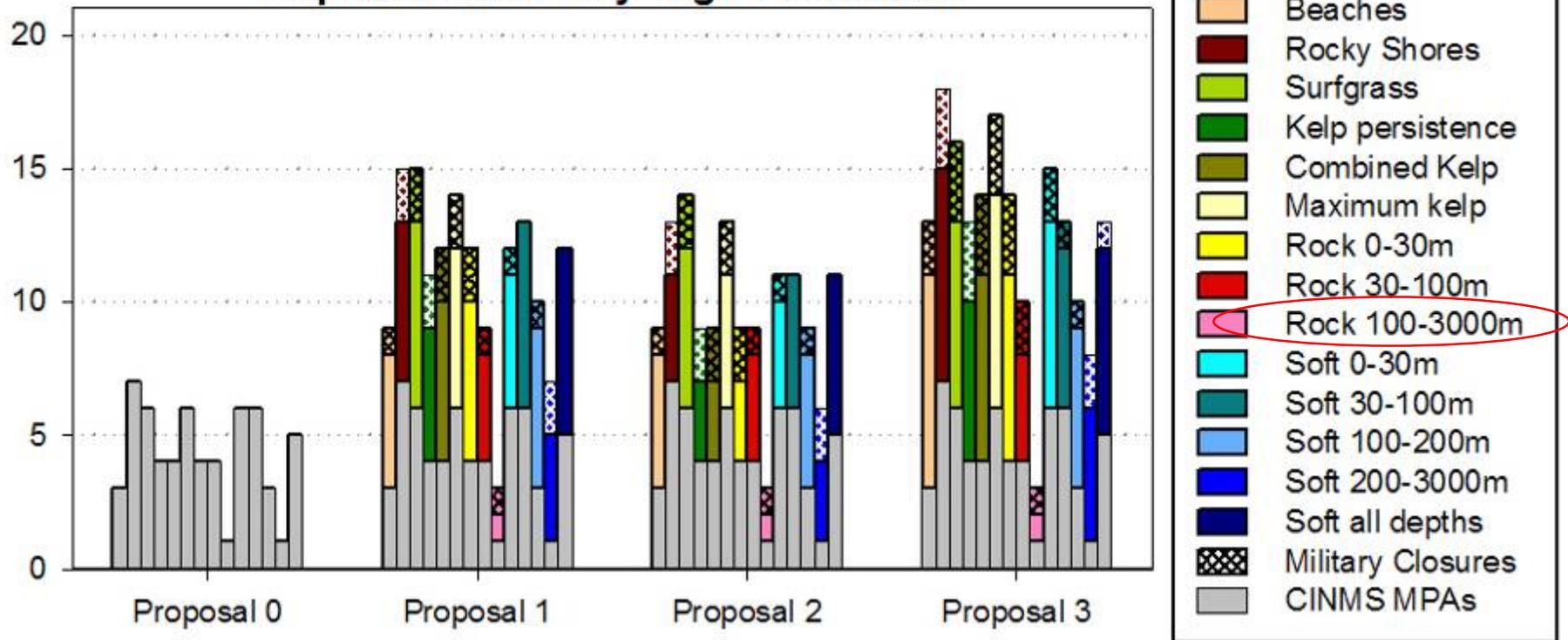


Estuarine MPAs do not have to meet size guidelines but must contain at least 0.12 square miles of estuarine habitat

Replication: Very High Protection

Number of Replicates

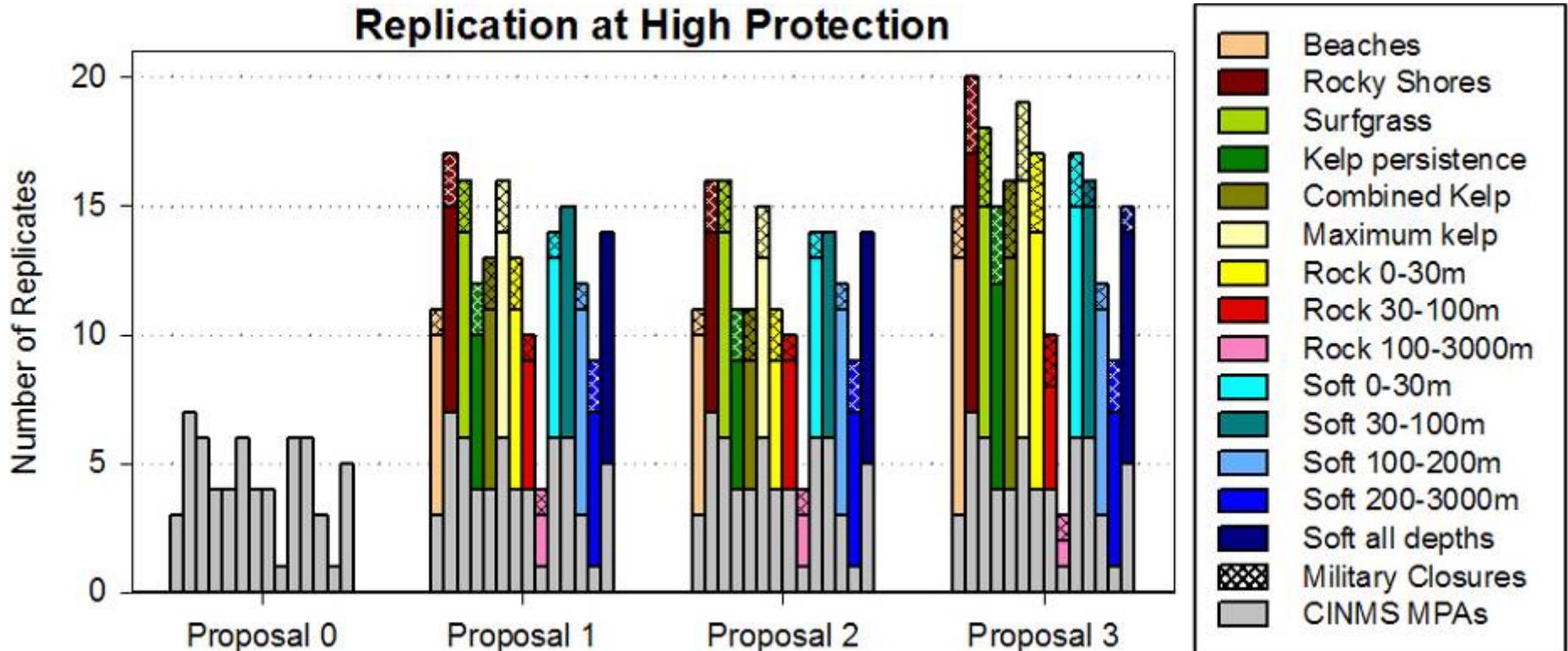
Replication at Very High Protection



CINMS MPAs = state MPAs within CINMS; does NOT include federal MPAs

- Deep rock (100-3000 meters) is very sparse and hard to achieve minimum area.
- All open coast habitats meet replication guidelines.

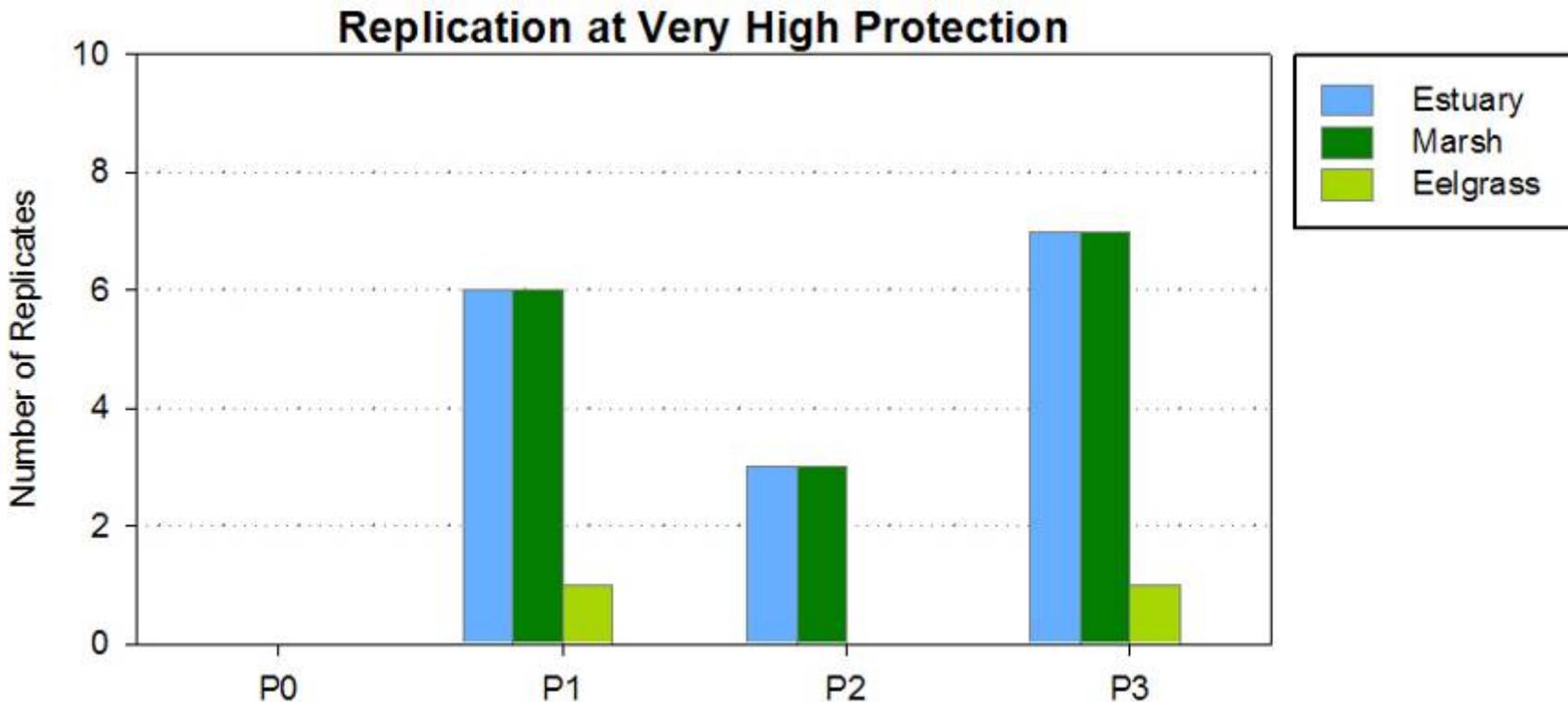
Replication: High Protection



CINMS MPAs = state MPAs within CINMS; does NOT include federal MPAs

- Replication increases at high level of protection.
- Replication at high and mod-high protection are virtually identical.

Replication: Estuarine Habitats



- All proposals meet replication guidelines (3-5) for estuary and coastal marsh habitat at very high protection.
- Only a handful of estuaries contain eelgrass (no proposal achieves more than 1 replicate at or above mod-high protection).
- At mod-high protection replication of marsh and estuary increases by 2 for P1.

Habitat Replication by Bioregion

Rocky Habitats

Number of bioregions with at least 1 habitat replicate

	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
Proposal 1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	4	4
Proposal 2	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	4	4
Proposal 3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3	3	3

- Military closures contribute one replicate of 100-3000m rock.
- All but the deepest rocky habitat are replicated across all bioregions at very high protection for all proposals.
- For deepest rock, Proposal 3 missed a possible replicate in the South Mainland bioregion.

Habitat Replication by Bioregion

Soft Bottom Habitats

Number of bioregions with at least 1 habitat replicate

	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
Proposal 1	5	5	5	5	5	5	4	5	5	5	5	5	3	4	4	5	5	5
Proposal 2	5	5	5	5	5	5	4	5	5	5	5	5	3	4	4	4	5	5
Proposal 3	5	5	5	5	5	5	5	5	5	5	5	5	4	4	4	5	5	5

- Military closures contribute replicates of the deepest soft-bottom habitats.
- Several soft-bottom habitats are not replicated across all available bioregions at very high protection.



Habitat Replication by Bioregion

Estuarine Habitats

Number of bioregions with at least 1 habitat replicate

	Estuary (2)			Marsh (2)			Eelgrass (1)			Tidal Flats (0)		
	VH	H	MH	VH	H	MH	VH	H	MH	VH	H	MH
Proposal 0	0	0	0	0	0	0	0	0	0	0	0	0
Proposal 1	2	2	2	2	2	2	1	1	1	0	0	0
Proposal 2	2	2	2	2	2	2	0	0	0	0	0	0
Proposal 3	2	2	2	2	2	2	1	1	1	0	0	0

- Estuary and marsh are replicated across all available bioregions for all proposals.
- Proposal 2 does not protect any replicates of eelgrass at or above mod-high protection.



Results: Habitat Replication

Summary

-  All proposals meet replication guidelines for all habitats except for eelgrass.
-  Round 3 proposals generally contain higher levels of replication for most habitats as compared to Round 2.
-  Ranking of proposals for replication across all habitats:
 $P3 > P1 > P2$
-  Military closures at San Clemente contribute to replication of nearshore rocky habitats as well as deep rock and soft-bottom habitats.