Marine Life Protection Act Initiative

Draft MPA Proposal Evaluations
North Central Coast Study Region

Presentation to the MLPA Master Plan Science Advisory Team

January 23, 2008 • Pacifica, CA

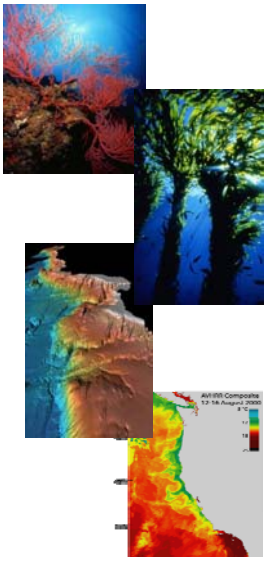
Presented by Dr. Mark Carr

Master Plan Science Advisory Team

- MLPA goals
- Habitat representation
- Habitat replication

MLPA Goals - Habitats

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**.



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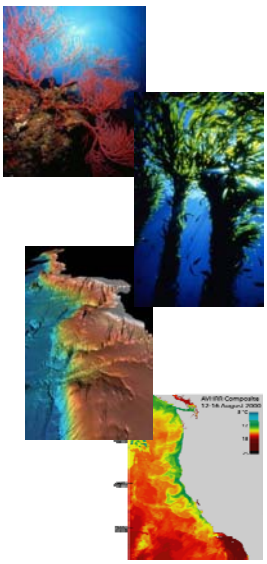


SAT Guidelines - Goals 1 and 4

	Level of Protection	MPA Types	Activities associated with this protection level
	Very high	SMR	No take
	High	SMCA	**salmon** (troll H&L in water greater than 50m depth), **sardine, anchovy, and herring** (pelagic seine)
	Mod-high	SMCA	**salmon** (troll H&L in water less than 50m depth), **Dungeness crab** (traps/pots), **squid** (pelagic seine)
	Moderate	SMCA SMP	**salmon** (non-troll H&L), **abalone** (diving), **halibut, white seabass, shore-based finfish and flatfishes** (H&L), **clams** (hand harvest), **giant kelp** (hand harvest)
	Low-mod	SMCA SMP	**Urchin** (diving), **lingcod, cabezon, greenling, rockfish, and other reef fish** (H&L), **surfperches** (H&L)
	Low	SMCA SMP	**bull kelp and mussels** (any method), **all trawling**, **giant kelp** (mechanical harvest)

Assigning protection levels to MPAs

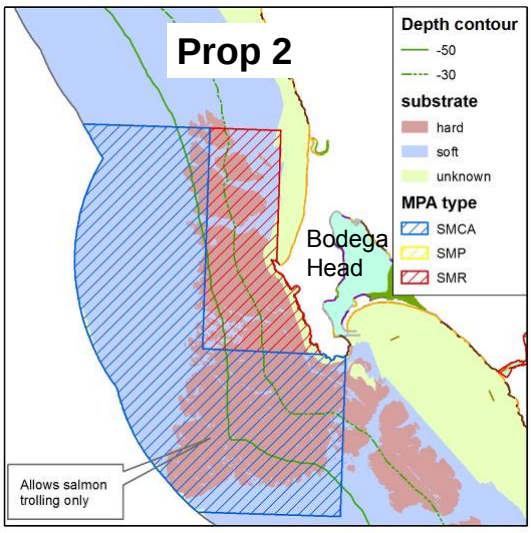
Consider:

Allowed uses

Relationship between habitat and MPA boundaries

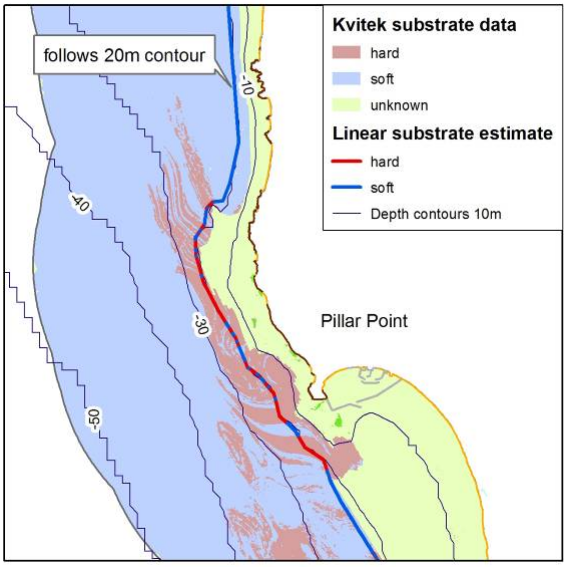
Prop. 4 has only a small area of <50m habitat open to salmon trolling → High Protection

Prop 2 has a large contiguous area of shallow rocky reef open to trolling → Mod-high Protection



SAT Guidelines - Goals 1 and 4

- Linear estimate for shallow rock and sand habitats -- eliminates biases caused by unknown nearshore habitat
- MPAs must extend out to 30m depth, not just to encompass the line
- allows credit for mixed habitats (i.e. both rock and sand in same MPA)



Evaluation – Goals 1 and 4

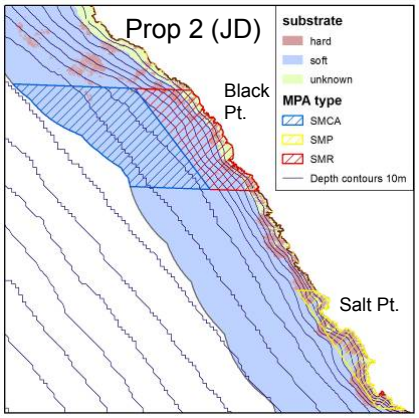
Key Questions for Each Proposed Package

1. How well are key habitat types represented in proposed MPA packages?
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?

Results: Habitat Representation

Similarities between proposals

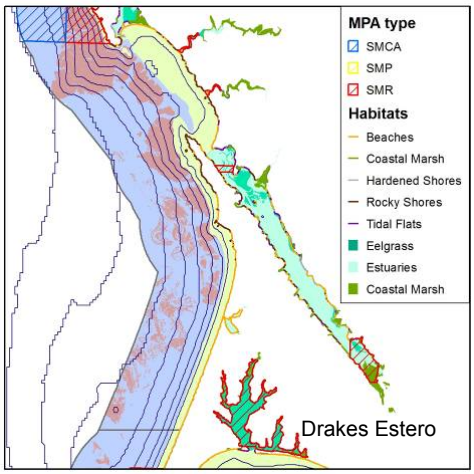
- similarities in number and location of MPAs as well as the habitats they include
- size of MPAs varies
- clusters of MPAs with an inshore SMR and offshore SMCA that allows various fishing activities
- shoreline and shallow habitats are generally well represented in very high protection MPAs



Results: Habitat Representation

Similarities between proposals

- estuarine habitats are generally well represented in very high protection MPAs
- most proposals still protect a greater portion of these habitats in the south subregion (Drakes Estero)
- In contrast to the last round, most proposals target small estuaries in both north and south



Habitat Availability

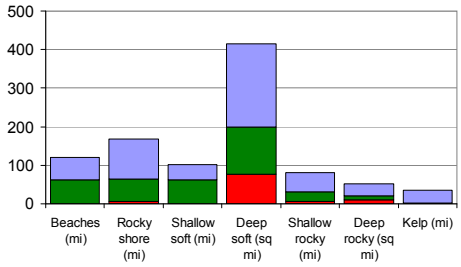
Deep soft bottom is the most abundant habitat in all subregions

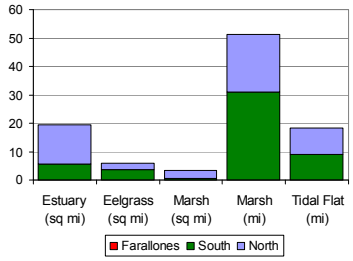
More rocky shore and shallow rocky reef in the north subregion

More soft bottom in the south subregion

Kelp is only mapped in the north subregion

More estuarine area in the north, but more eelgrass in the south





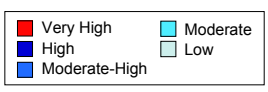
Results: Habitat Representation

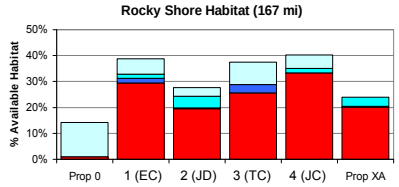
Shoreline Habitats

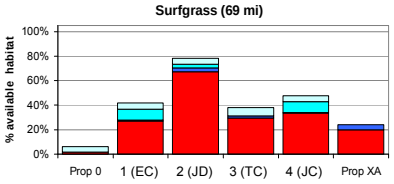
Most proposals have at least 20% of rocky shore and surfgrass at very high protection, while allowing some shorefishing, abalone and urchin harvest.

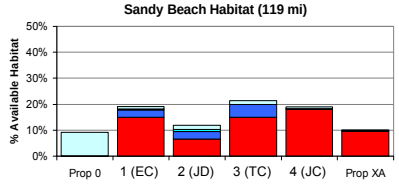
Protection of sandy beach is generally lower than protection of rocky shoreline

Inclusion of mod-high protection affects sandy beach representation in 3 proposals (allow crabbing)









Results: Habitat Representation

Shallow rocky reef

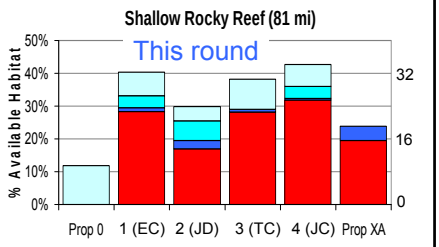
A high proportion of protected areas are in SMRs

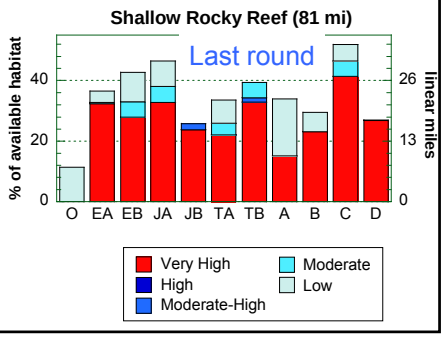
Convergence from previous round

Only a small proportion of protected area in mod-high protection (mostly due to crabbing)

Some areas in moderate protection due to shorefishing and abalone

Many low protection areas allow urchin harvest





Results: Habitat Representation

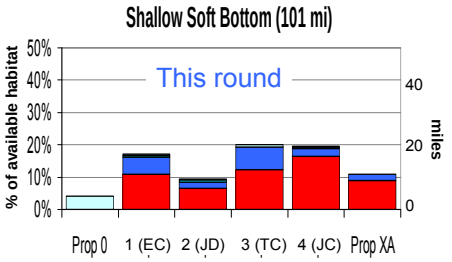
Shallow soft bottom

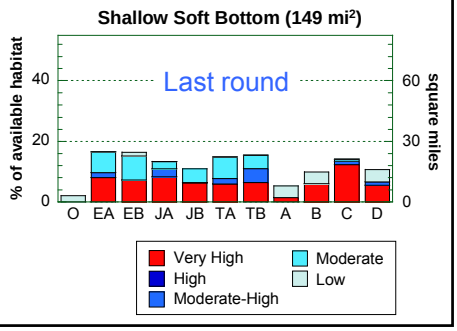
New linear habitat measure more accurately reflects availability

Lower representation compared to shallow rock

High proportion of MPA area is in SMRs

Little of the MPA area in moderate or low protection





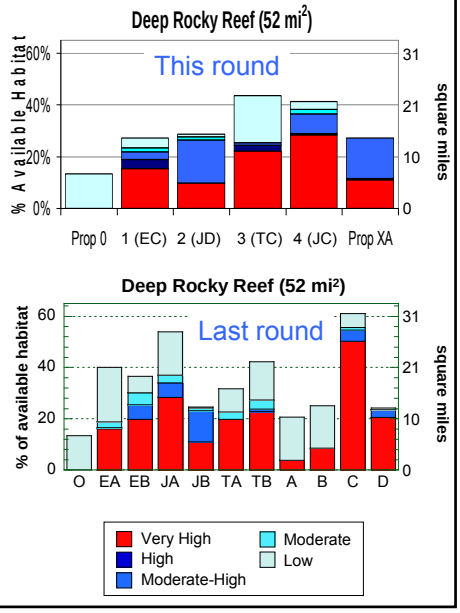
Results: Habitat Representation

Deep rocky reef

Convergence among proposals

Large area in mod-high protection -- due primarily to crabbing (only 4 proposed MPAs allow only salmon trolling in shallow water)

Very little area under moderate or low LOP (except prop 3 due to a Farallons SMCA that allows take of various species other than forage species)



Results: Habitat Representation

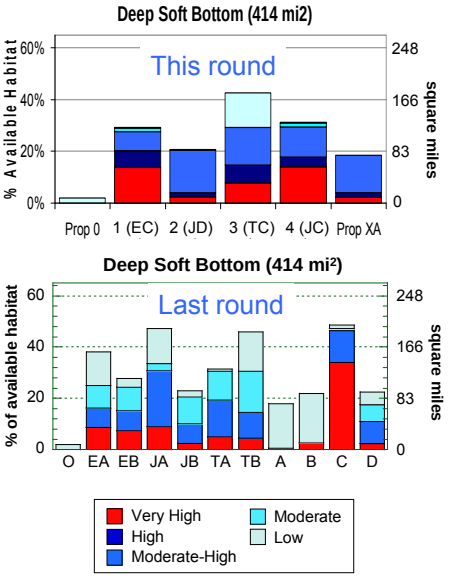
Deep soft bottom

More area protected at or above the moderate-high LOP relative to first round

Large area in mod-high protection -- due primarily to crabbing

Strong differences in LOP among proposals persist

Low percentages but large areas under protection



Results: Habitat Representation

Summary

- Overall convergence among proposals in second round
- Many habitats are well represented in high levels of protection.
- Habitats varied markedly in allowed uses and the relative representation of levels of protrection.
- Shallow sand habitat still not as well represented as shallow rock

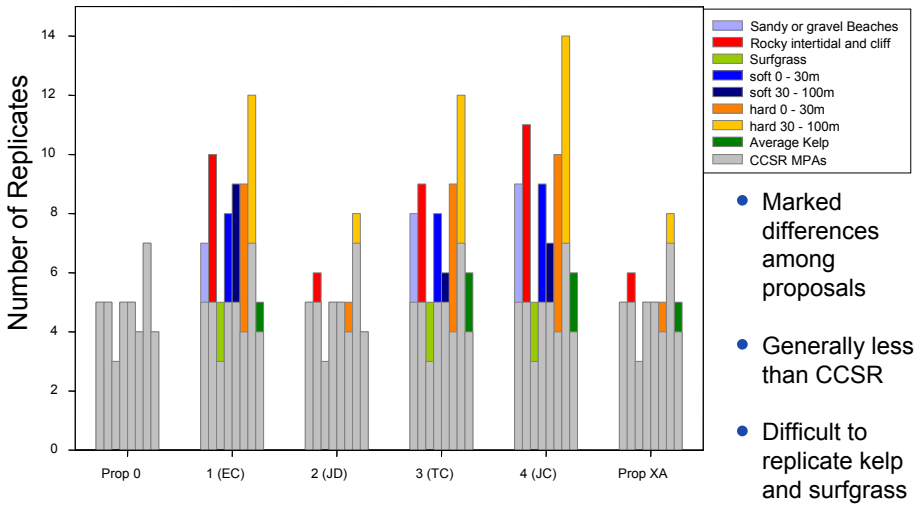
Methods: Habitat Replication

Guidelines for replication:

- 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 mi^2 of estuarine habitat
- Some small estuaries (Gualala and Garcia rivers, Pescadero Creek) contain less than the minimum 0.12 mi^2, but protection of these habitats still has conservation value

Results: Habitat Replication

Open Coast Habitats - Protection at High and Above



- Marked differences among proposals
- Generally less than CCSR
- Difficult to replicate kelp and surfgrass

Results: Habitat Replication

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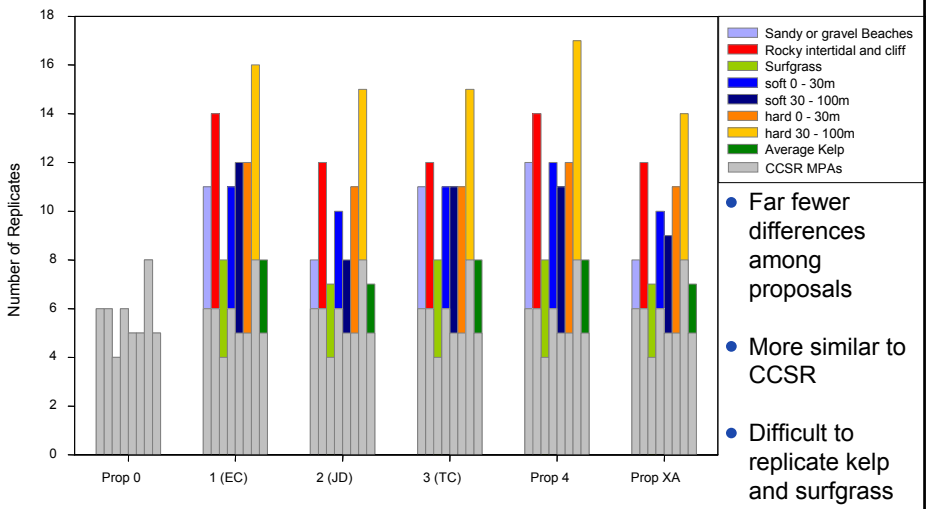
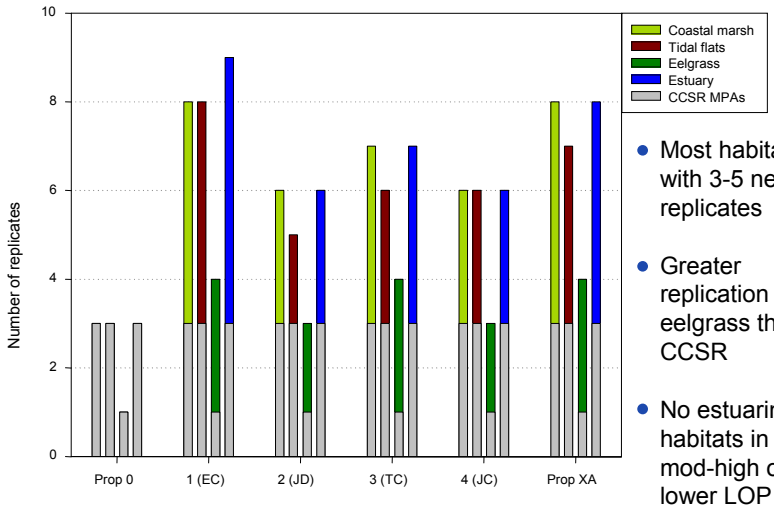


- Far fewer differences among proposals
- More similar to CCSR
- Difficult to replicate kelp and surfgrass

Results: Habitat Replication

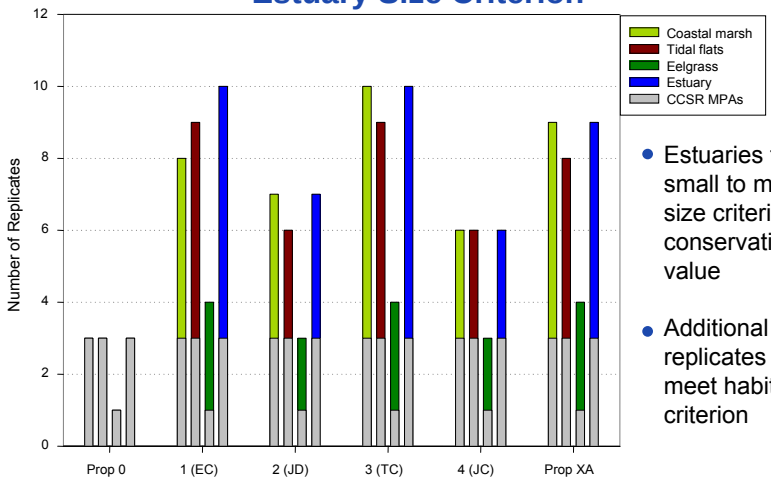
Estuarine Habitats - Protection at High and Above



- Most habitats with 3-5 new replicates
- Greater replication of eelgrass than CCSR
- No estuarine habitats in mod-high or lower LOP

Results: Habitat Replication

Additional "Replicates" - Do Not Meet Minimum Estuary Size Criterion



- Estuaries too small to meet size criterion add conservation value
- Additional replicates that meet habitat size criterion

Results: Habitat Replication

Summary

- Marked differences among proposals
- Generally less replication than CCSR at highest levels of protection
- Fewer differences among proposals and more similar to CCSR at moderate-high levels of protection
- Estuarine habitats well replicated.