

Marine Life Protection Act Initiative



Habitat, Size, and Spacing Evaluations of BRTF-Recommended MPA Proposals for the North Coast Study Region

Presentation to the MLPA Master Plan Science Advisory Team
January 13, 2011 • Webinar and Teleconference

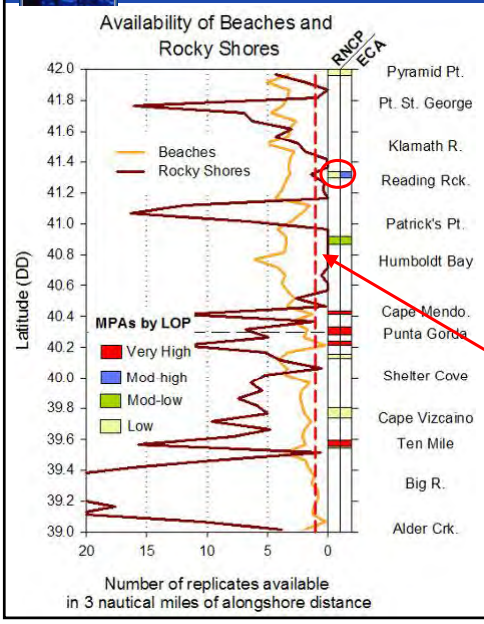
Dr. Mark Carr, Co-chair • MLPA Master Plan Science Advisory Team

Notes on Evaluations

- **Results presented for very high and moderate-high protection MPAs:**
 - **No high protection MPAs** were included in the Revised Round 3 NCRSG MPA proposal (RNCP) or the Enhanced Compliance Alternative (ECA); thus evaluations at high protection are omitted from all evaluation materials.
- **Nearshore "ribbon" MPAs proposed in ECA:**
 - Confine uses with assigned LOPs below moderate-high to a narrow ribbon along the shoreline (extending from the shore to about 1000 feet offshore).
 - "Ribbon" MPAs split the 0-30m depth zone into multiple MPAs with different LOPs. For evaluation purposes, 0-30m habitats are evaluated at the lowest LOP within the 0-30m zone.



Habitat Distribution in the NCSR



Beaches and Rocky Shores

Replicates of beach habitat are available throughout the NCSR.

Replicates of rocky shore habitat are available along most sections of coast, with the exception of the area near Humboldt Bay.

Differences in shoreline protection between RNCP and ECA at Reading Rock.



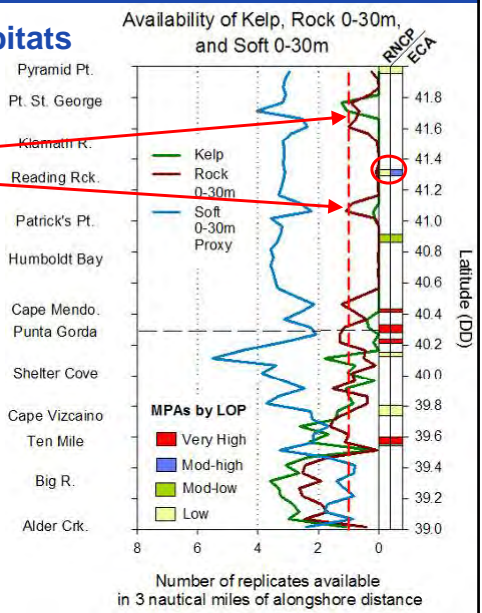
Habitat Distribution in the NCSR

Nearshore (0-30m) Habitats

Replicates of kelp and rock 0-30m habitat are rare north of Shelter Cove.

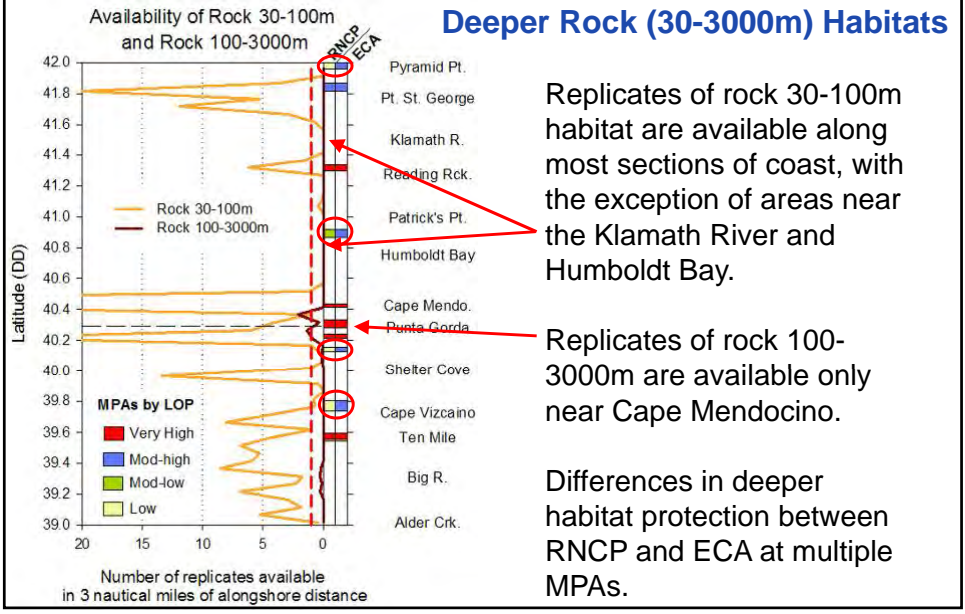
Replicates of soft 0-30m habitat are available throughout the NCSR.

Differences in nearshore protection between RNCP and ECA at Reading Rock.

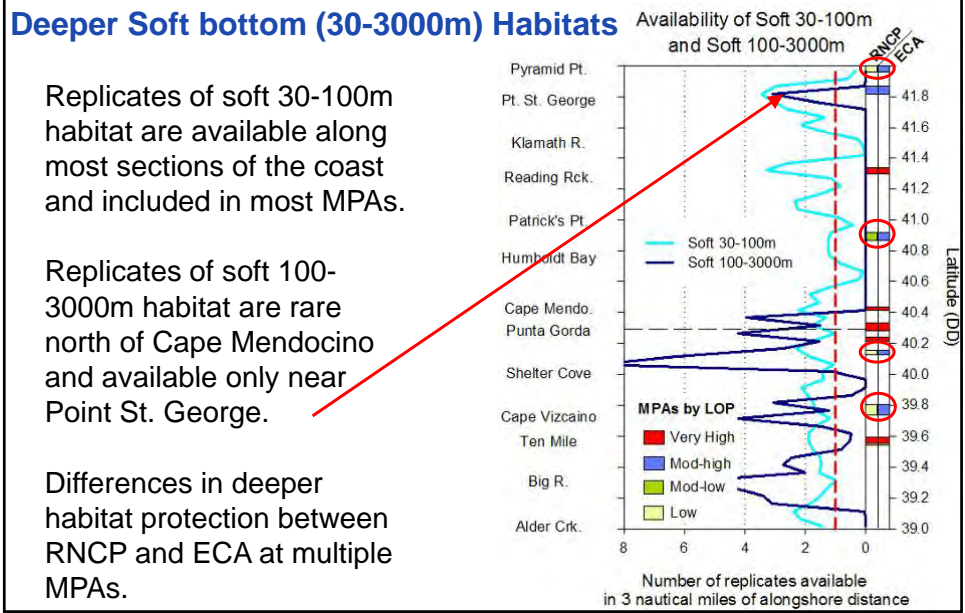




Habitat Distribution in the NCSR

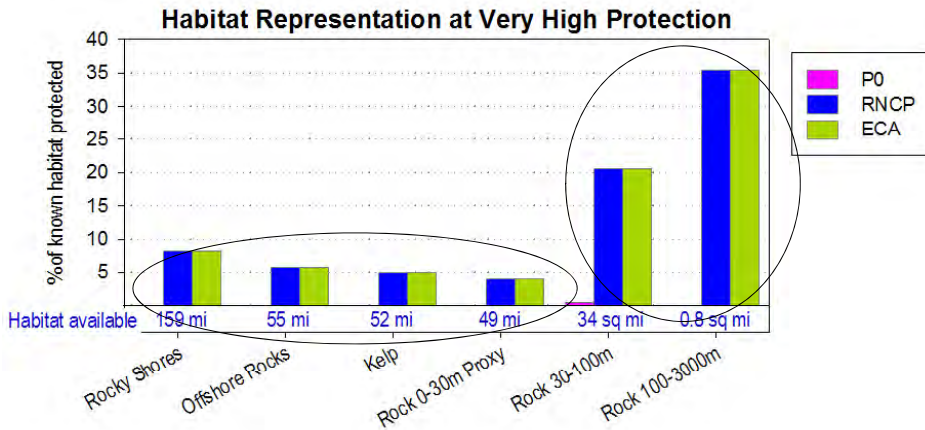


Habitat Distribution in the NCSR





Representation: Rocky Habitats

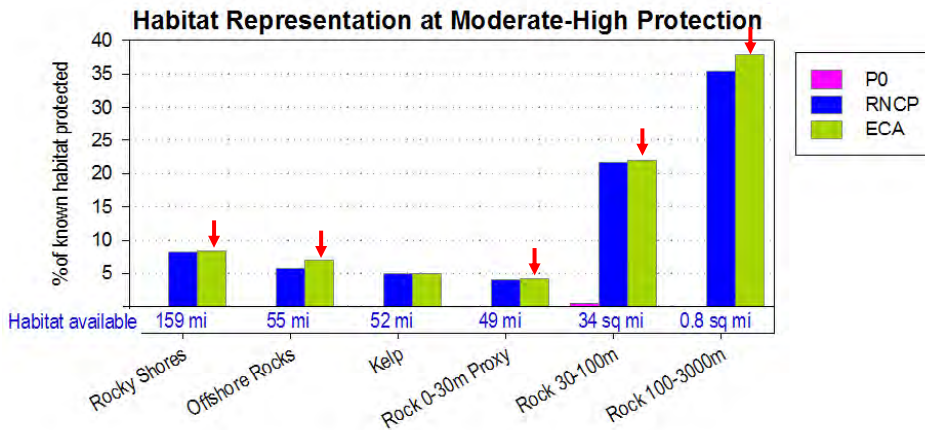


At very high protection the RNCP and ECA are identical:

- 4-8% of available shoreline and nearshore rocky habitats included
- 20-36% of deeper rock habitats included



Representation: Rocky Habitats

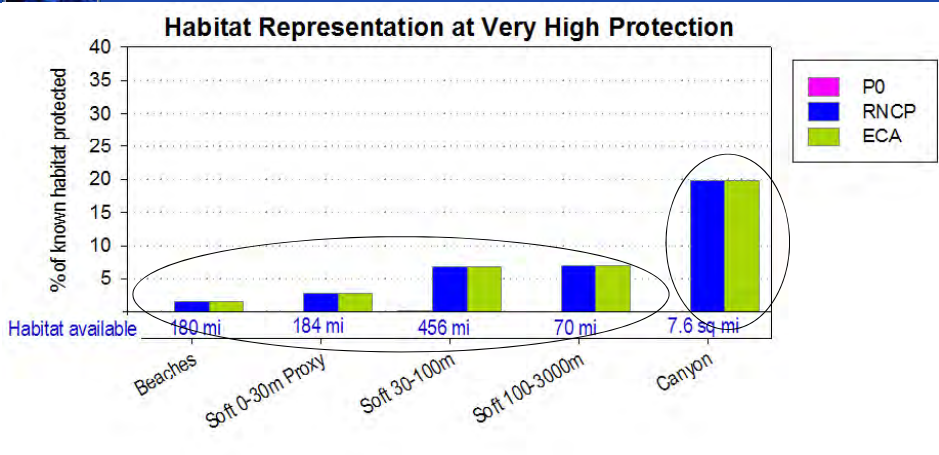


At moderate-high protection:

- ECA includes a slightly larger percentage of most rocky habitats than RNCP.
- Both proposals include less than 10% of shoreline and nearshore rocky habitats and more than 20% of deeper rocky habitats.



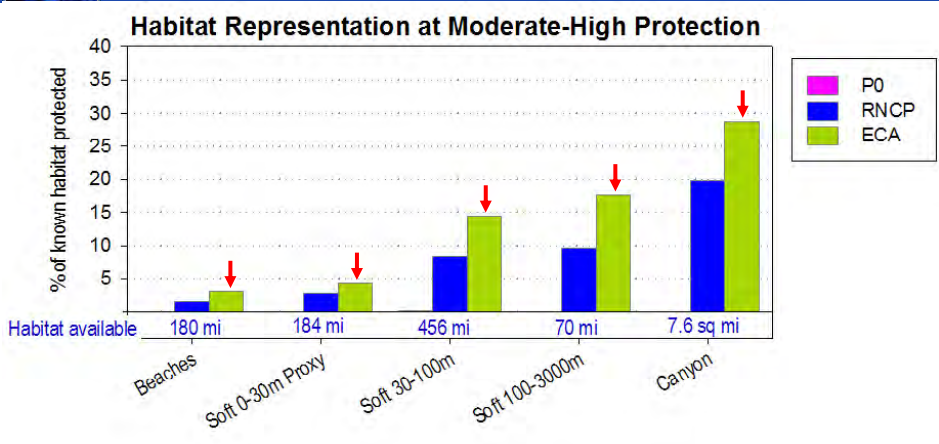
Representation: Soft Bottom Habitats



- At very high protection the RNCP and ECA are identical:**
- 1.5-7% of available soft-bottom habitats included
 - ~20% of rare canyon habitat included



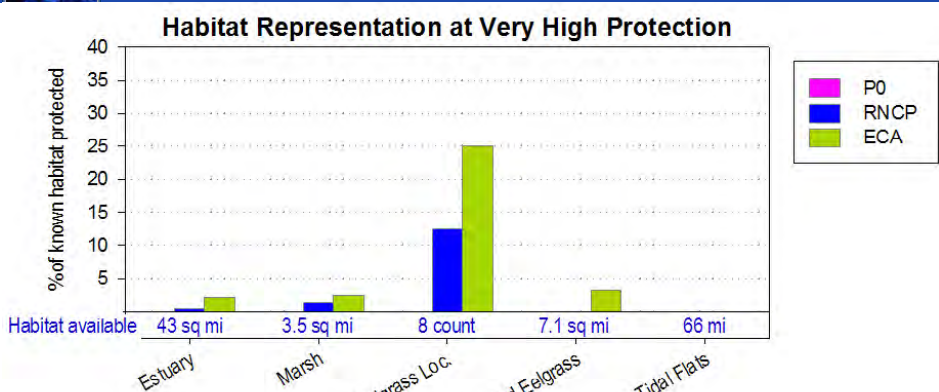
Representation: Soft Bottom Habitats



- At moderate-high protection:**
- ECA includes a larger percentage of all soft bottom habitats.
 - Both proposals include less than 5% of shoreline and nearshore soft-bottom habitats.



Representation: Estuarine Habitats



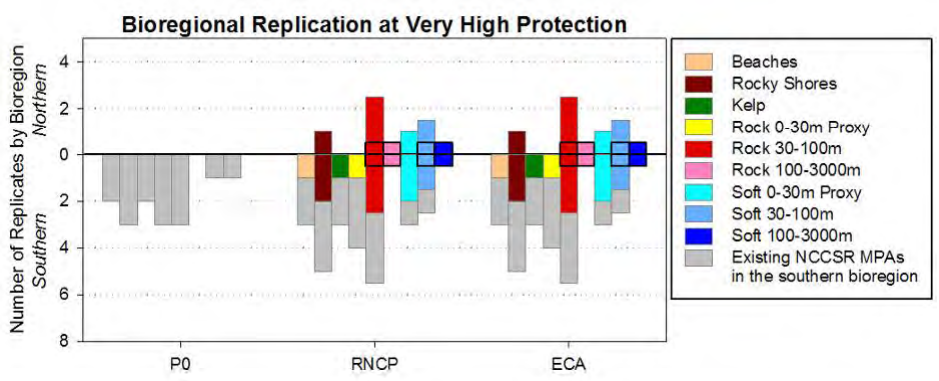
At very high protection:

- RNCP includes 0-1.4% of estuary, marsh, mapped eelgrass, and tidal flats and 1 of 8 (12.5%) known eelgrass locations
- ECA includes 0-3.3% of estuary, marsh, mapped eelgrass and tidal flats and 2 of 8 (25%) known eelgrass locations

Identical evaluation results at moderate-high protection.



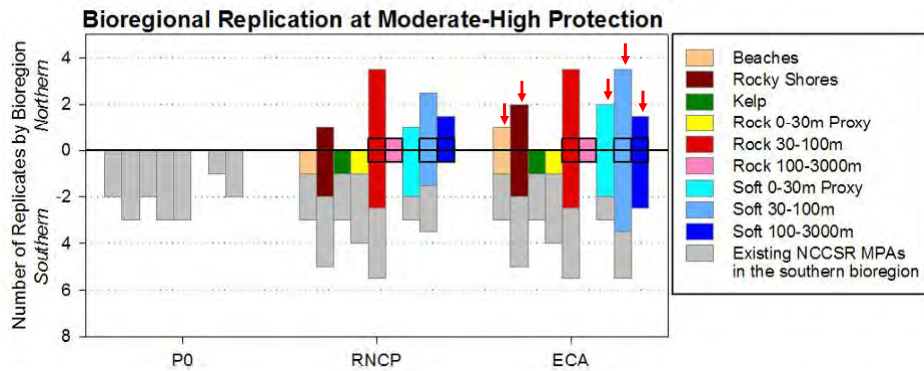
Bioregional Replication



At very high protection the RNCP and ECA are identical:

- Three habitats—beaches, kelp, and 0-30m rock—are not replicated in northern bioregion.
- Rare 100-3000m rock and soft bottom habitats are replicated in only one MPA that falls on bioregional divide.

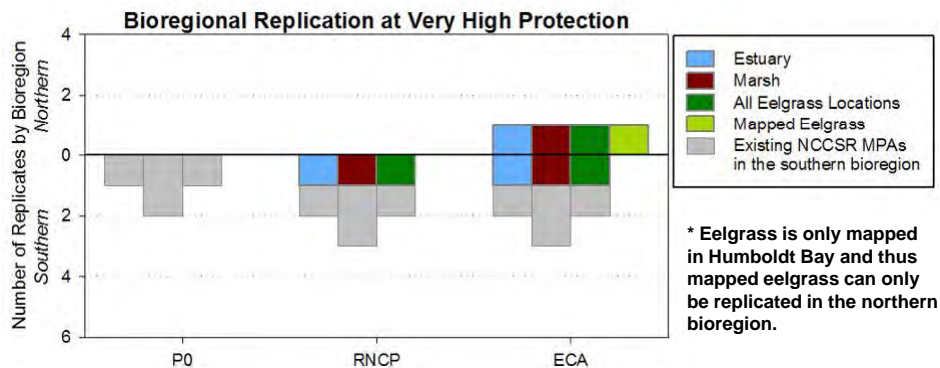
Bioregional Replication



At moderate-high protection:

- Two habitats, kelp and 0-30m rock, are not replicated in northern bioregion in either proposal.
- As compared to RNCP, ECA includes more replicates of beaches, rocky shores, soft 0-30m, soft 30-100m, and soft 100-3000m.

Bioregional Replication



At very high protection:

- RNCP includes replicates of each available estuarine habitat in the southern bioregion, but no estuarine replicates in the northern bioregion.
- ECA includes one replicate of each available estuarine habitat in both northern and southern bioregions.

Identical evaluation results at moderate-high protection.



Summary of Habitat Evaluations

Guidelines Achieved



At very high protection:

- **Both proposals** represent all key habitats, except tidal flats, to some extent (1-36% of available).
- **Both proposals** meet replication guidelines for all key habitats at biogeographic scale (3-5 replicates), and at least one replicate of each is included in the MLPA North Coast Study Region (NCSR).
- **RNCP** replicates **6 of 12** key habitats in both northern and southern bioregions.
- **ECA** replicates **9 of 12** key habitats in both northern and southern bioregions (adds estuarine habitats relative to RNCP).



Summary of Habitat Evaluations

Guidelines Achieved (cont ...)



At or above moderate-high protection:

- Tidal flats (poorly mapped) not represented in either proposal, but all other habitats represented to some extent.
- **RNCP** replicates **6 of 12** key habitats in both northern and southern bioregions.
- **ECA** replicates **10 of 12** key habitats in both northern and southern bioregions (adds estuarine habitats and rocky shores relative to RNCP).



Summary of Habitat Evaluations

Guidelines Not Achieved



At very high protection:

- **Neither proposal** represents tidal flats (poorly mapped) within the NCSR .
- **RNCP** does not replicate **6 of 12** key habitats in the northern bioregion of the NCSR: beaches, kelp, rock 0-30m, estuary, marsh, and eelgrass.
- **ECA** does not replicate **3 of 12** key habitats in the northern bioregion of the NCSR: beaches, kelp, and rock 0-30m.



Summary of Habitat Evaluations

Guidelines Not Achieved (cont ...)

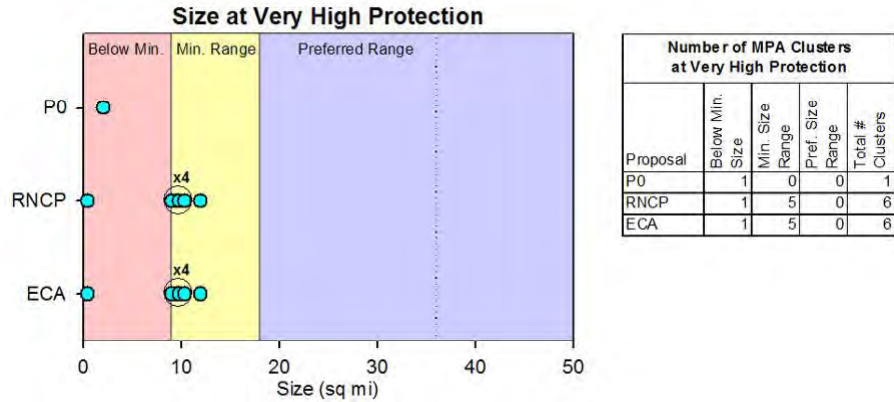


At or above moderate-high protection:

- **Neither proposal** represents tidal flats (poorly mapped) within the NCSR .
- **RNCP does not replicate 6 of 12 key habitats** in the northern bioregion of the NCSR: beaches, kelp, rock 0-30m, estuary, marsh, and eelgrass.
- **ECA does not replicate 2 of 12 key habitats** in the northern bioregion of the NCSR: kelp and rock 0-30m.



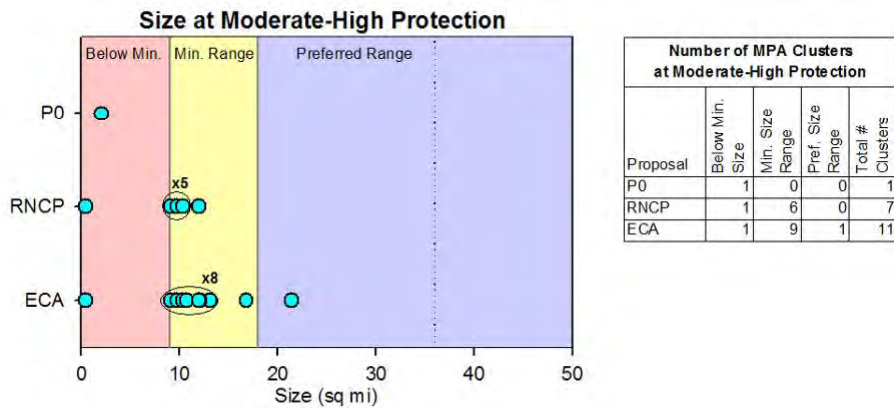
Cluster Sizes: Very High Protection



- At very high protection the RNCP and ECA are identical: most MPAs are within the minimum size range and no MPAs are within the preferred size range.

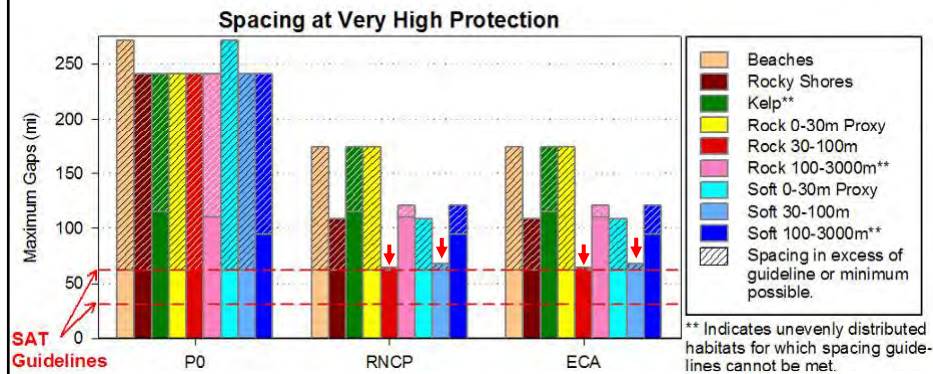


Cluster Sizes: Moderate-high Protection



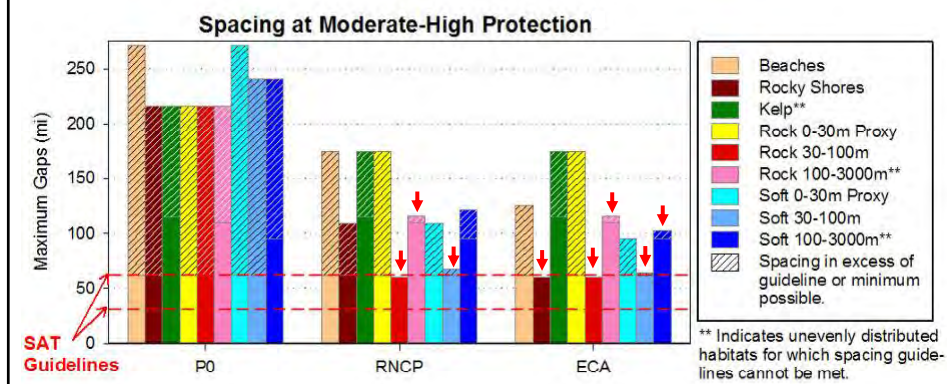
- At moderate-high protection, as compared to very high protection:
- RNCP includes one more minimum size MPA cluster.
 - ECA includes four more minimum size MPA clusters and one preferred size MPA cluster.

Max Gaps: Very High Protection



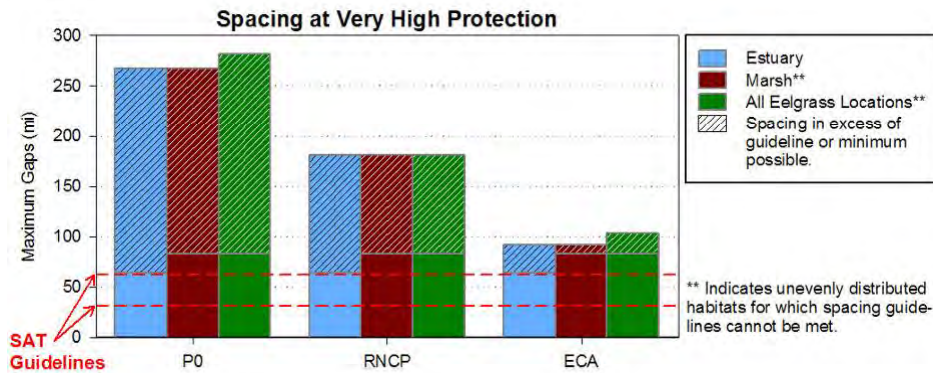
- Not possible to meet spacing guidelines for kelp, rock 100-3000m, or soft 100-3000m habitats.
- At very high protection, RNCP and ECA are identical: both approach the spacing guidelines for rock 30-100m and soft 30-100m.

Max Gaps: Moderate-High Protection



- RNCP achieves or approaches the spacing guidelines or minimum possible spacing for 3 habitats.
- ECA achieves or approaches the spacing guidelines or minimum possible spacing for 5 habitats.
- Spacing gaps remain in both proposals for beaches, kelp, rock 0-30m, and soft 0-30m.

Estuarine Spacing: Very High Protection



- **Not possible to meet spacing guidelines for marsh or eelgrass habitats due to uneven distribution of habitats.**
- **In RNCP estuarine habitats are replicated only at Ten Mile estuary, thus largest gaps extend from Ten Mile estuary north to Oregon.**
- **In ECA gaps for estuarine habitats are reduced by the South Humboldt Bay SMRMA.**

Size and Spacing Summary

Guidelines Achieved



At very high protection:

- **Both proposals** have all but one MPA within the minimum size range.
- **RNCP** approaches guidelines or minimum possible spacing for **2 habitats**: rock 30-100m and soft 30-100m.
- **ECA** approaches guidelines or minimum possible spacing for **3 habitats**: rock 30-100m, soft 30-100m, and marsh.



Size and Spacing Summary

Guidelines Achieved (cont ...)



At or above moderate-high protection:

- **RNCP** includes 6 MPAs in the minimum size range and 1 below minimum size MPA.
- **ECA** includes 9 MPAs in the minimum size range, 1 preferred size MPA and 1 below minimum size MPA.
- **RNCP** approaches guidelines or minimum possible spacing for **3 habitats**: rock 30-100m, rock 100-3000m and soft 30-100m.
- **ECA** approaches guidelines or minimum possible spacing for **6 habitats**: rocky shores, rock 30-100m, rock 100-300m, soft 30-100m, soft 100-3000m, and marsh.



Size and Spacing Summary

Guidelines Not Achieved



At very high protection:

- No MPAs within the preferred size range exist in **either proposal**
- In **RNCP**, spacing gaps for **10 of 12** key habitats substantially exceed the guidelines or minimum possible spacing: beaches, rocky shores, kelp, rock 0-30m, rock 100-3000m, soft 0-30m, soft 100-3000m, estuary, marsh and eelgrass.
- In **ECA** spacing gaps for **9 of 12** key habitats substantially exceed the guidelines or minimum possible spacing: beaches, rocky shores, kelp, rock 0-30m, rock 100-3000m, soft 0-30m, soft 100-3000m, estuary, and eelgrass.



Size and Spacing Summary

Guidelines Not Achieved (cont...)



At or above mod-high protection:

- **RNCP** includes no MPAs within the preferred size range.
- In **RNCP**, spacing gaps for **9 of 12** key habitats substantially exceed the guidelines or minimum possible spacing: beaches, rocky shores, kelp, rock 0-30m, soft 0-30m, soft 100-3000m, estuary, marsh, and eelgrass.
- In **ECA**, spacing gaps for **6 of 12** key habitats substantially exceed the guidelines or minimum possible spacing: beaches, kelp, rock 0-30m, soft 0-30m, estuary, and eelgrass.