



California Marine Life Protection Act Initiative

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To: MLPA Blue Ribbon Task Force
From: MLPA Initiative Staff
Subject: Evaluation of North Central Coast Regional Stakeholder Group marine protected area proposals 1-3, 2-XA and 4 relative to MLPA Goal 3
Date: April 14, 2008

Summary

Goal 3 of the Marine Life Protection Act (MLPA) is:

“To improve recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbance, and to manage these uses in a manner consistent with protecting biodiversity.”

MLPA Initiative and California Department of Fish and Game (DFG) staff evaluated the MLPA North Central Coast Regional Stakeholder Group (NCCRSG) marine protected area (MPA) proposals 1-3, 2-XA and 4 for their fulfillment of MLPA goal 3. These proposals were developed by stakeholders during the third round of proposal refinement in March 2008. Access is a key issue for recreational, educational, and study opportunities; the evaluation focused on proximity of MPAs to access points, boat launches and ports, and marine research institutions. The number of long-term monitoring sites inside MPAs and the replication of habitats within MPAs were also tabulated.

Overall the MPA proposals developed by the NCCRSG provided better recreational, educational, and study opportunities than the existing MPAs (Proposal 0)¹.

To summarize the evaluation of the three NCCRSG-generated proposals:

- *Number of access points within and near proposed MPAs.* Access points located inside MPA boundaries and within 2 miles of MPAs were counted. The number of total access points included in the three proposals ranged from 94 (Proposal 2-XA) to 134 (Proposal 4).
- *Distance of proposed MPAs to boat ramps/launches/ports.* The proposals had 16 (Proposal 2-XA) to 20 (Proposals 4) proposed MPAs within 5 miles of a boat ramp, launch, or port (excluding major ports).

¹ There are more access points within or near moderate-high and lower protection level MPAs in Proposal 0 than in the NCCRSG proposals. Proposal 0 also has more MPAs of moderate-high and lower protection levels near boat ramps and launches. These results are influenced by the high number of MPAs with lower protection levels within Proposal 0 compared to the NCCRSG proposals.

- *Distance of proposed MPAs from the region's major ports.* All of the proposals included 5 MPAs within 5 miles of a major port.
- *Distance of proposed MPAs from major marine research institutions.* The proposals had 7 (Proposal 1-3 and 2-XA) or 8 (Proposal 4) MPAs of all protection levels within 15 miles of a major research institution. Proposal 4 had 5 high or very high protection MPAs within 15 miles of a research institution, while proposals 1-3 and 2-XA had 4 high or very high protection MPAs within that radius.
- *Number of established long term marine research monitoring sites.* The Partnership for Interdisciplinary Research of the Coastal Ocean (PISCO) has 15 monitoring sites within the study region. Across all proposals, there were 5 (Proposal 2-XA) to 9 (Proposal 4) monitoring sites within proposed MPAs of all protection levels.
- *Replication of habitats within the study region.* Replication of habitats in MPAs within the study region ranged from 2-10 replicates for all habitats across proposed MPAs of all protection levels. Rocky intertidal, hard bottom habitats, and deep soft habitat (30-100m) had the greatest replication, with each proposal having at least 6 replicates of these habitats.

Two additional evaluations consider how the three NCCRSR-generated proposals address goal 3 of the MLPA:

- The DFG evaluation of the potential impacts of draft proposals on recreational abalone harvest
- The Ecotrust evaluation of potential impacts to areas of importance to recreational fishing modes

These additional evaluations are not included in this document, but are provided in supplemental materials.²

Methodology

MLPA Initiative and DFG staff used simple metrics and available geographic information system (GIS) data to evaluate the extent to which MPA proposals address goal 3 of the MLPA. This evaluation compared NCCRSR MPA proposals relative to one another, including:

- Proposal 0 (existing MPAs), the "no action" alternative
- Proposal 1-3
- Proposal 2-XA
- Proposal 4

² The separate evaluation documents are: "Evaluation of the potential impact MPA proposals may pose for abalone management and abalone recreational fisheries" and "Summary of potential impacts of the March 2008 MPA proposals on commercial and recreational fisheries in the North Central Coast Study Region."

Evaluation of recreational opportunities focused on accessibility of different types of MPAs, specifically:

- *Number of access points within and near proposed MPAs.* The number of access points inside or within 2 miles of a) proposed very high and high protection MPAs, b) proposed moderate-high and lower protection MPAs and c) proposed MPAs of all protection levels. Only shoreline MPAs were considered in the evaluation of access. Access points that were within the border of a MPA *and* within 2 miles of another MPA were only counted once. Existing data on access points from the State Coastal Conservancy were used in this analysis.
- *Distance of proposed MPAs to boat ramps/launches/ports.* The number of MPAs within 0-5, 5-15, and 15-50 miles of a boat ramp, launch, or port (excluding major ports). The 0-5 mi distance reflects potential use of MPAs by users with small water craft.
- *Distance of proposed MPAs from the region's major ports.* The number of MPAs within 0-5, 5-15, and 15-50 miles of a major port (i.e. San Francisco, Bodega, or Half Moon Bay).

Evaluation of educational and study opportunities focused on:

- *Distance of proposed MPAs from major marine research institutions.* The number of MPAs within 0-15 and 15-50 miles of major marine research institutions in the study region (i.e., Bodega Bay Marine Lab of University of California, Davis and Romberg Tiburon Center for Environmental Studies of San Francisco State University).
- *Number of established long-term marine research monitoring sites.* The number of sites monitored by PISCO within a) proposed high protection and very high protection MPAs, and b) within proposed MPAs of all protection levels.
- *Replication of habitats within the study region.* Replication of 12 habitats within proposed MPAs in this study region was evaluated: sandy or gravel beaches, rocky intertidal and cliff, surfgrass, soft substrate (0-30 m), soft substrate (30-100 m), hard substrate (0-30 m), hard substrate (30-100 m), average kelp, coastal marsh, tidal flats, eelgrass, and estuary. A habitat was considered to be present within a MPA if a threshold amount of that habitat was present, based on the Science Advisory Team (SAT) evaluation³. Habitat replication was considered for a) proposed MPAs with very high, high, or moderate-high level of protection, and b) for proposed MPAs of all protection levels.

³ The Master Plan Science Advisory Team considers a habitat to be "present" within a MPA if that MPA contains enough habitat to capture 90% of the local biodiversity. The method used to measure this threshold varies by habitat. See the document, *Methods Used to Evaluate Draft MPA Proposals in the North Central Coast Study Region*, for more detail.

Evaluation Results

Recreational Opportunities

Access to MPAs is important for both consumptive and non-consumptive users of the marine environment. However, an increased number of access points in very high and high protection MPAs that limit take of marine resources may result in fewer consumptive recreational opportunities. Proposal 4 had the greatest overall accessibility when considering MPAs of all protection levels; this proposal had 134 general access points that are either within, or within 2 miles of a MPA. Proposal 2-XA had the fewest access points within or near a MPA, with 94 access points overall (Figure 1).

Proposal 4 had the greatest number of access points (82) within or near high or very high protection level MPAs. Proposal 1-3 had the fewest number of access points (57) within or near high or very high protection level MPAs. Proposal 4 also provided greatest access to moderate-high and lower protection MPAs, with 63 access points within or near MPAs of these protection levels. Proposal 2-XA provided the fewest access points to MPAs of moderate-high and lower levels of protection, with 35 access points within or near these MPAs.

The proposals provided similar overall access to boat launches, ramps, and smaller ports. Proposal 4 offered the greatest access, with 20 proposed MPAs that were near (within 5 miles) these features. Both proposals 4 and 2-XA had 11 MPAs with high or very high protection levels near boat launches, while Proposal 1-3 had 10. The proposals had 5 (Proposal 2-XA) to 9 (Proposal 4) moderate-high and lower protection MPAs near boat ramps, launches, and smaller ports (Figure 2).

A measure of distance of MPAs from major ports found that all proposals had 5 MPAs near (within 5 miles) major ports (Figure 3). Proposals 1-3 and 2-XA had more MPAs (2 MPAs) of moderate-high protection or lower near major ports than Proposal 4 (1 MPA), while Proposal 4 had more MPAs (4 MPAs) of very high or high protection near major ports (compared to 3 in the others).

Educational and Study Opportunities

Educational and study opportunities are improved by the presence of proposed MPAs near research institutions and MPAs that include established long term monitoring sites (Figures 4 and 5). Habitat replication within the study region is also an essential consideration in the design of MPA proposals, given the importance of replicate sites for robust design of scientific studies (Figure 6).

Proposal 4 had the greatest number of proposed MPAs near a major marine research institution on the north central coast, with 8 MPAs near (defined as within 15 miles) either UC Davis's Bodega Bay Marine Lab or San Francisco State University's Romberg Tiburon Center for Environmental Studies; five of these were very high or high protection MPAs. Proposal 2-XA and Proposal 1-3 both had 7 MPAs near a major research institution; four of these were very high or high protection MPAs (Figure 4).

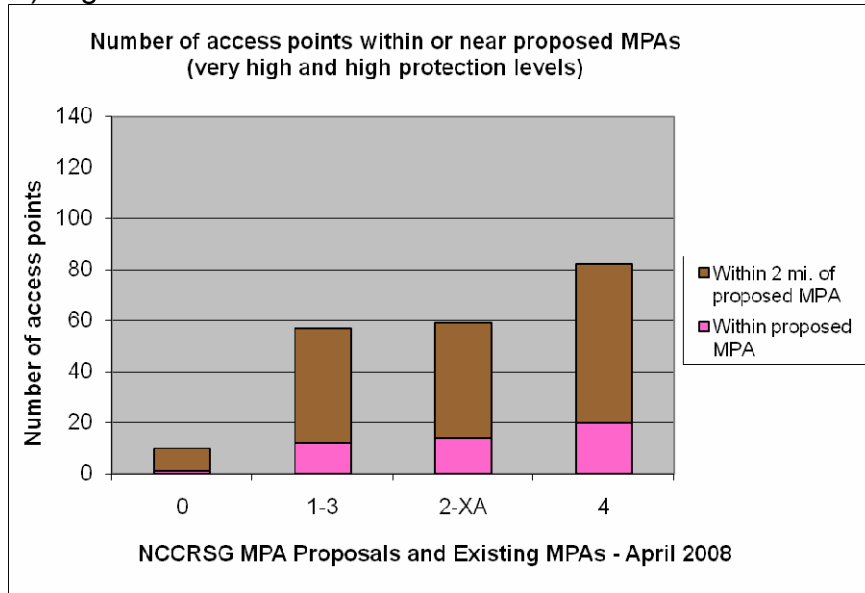
There are 15 long-term monitoring sites in the study region monitored by PISCO. Proposal 4 included the most PISCO monitoring sites (9 sites) within MPAs of all protection levels; five of these sites were within MPAs of very high or high protection levels. Proposal 2-XA had the fewest PISCO monitoring sites (5 sites) within MPAs of all protection levels; all of these sites were within MPAs of very high or high protection levels (Figure 5).

The MPA proposals each include at least 2 replicates of each habitat across proposed MPAs of all protection levels within the study region. For MPAs of all protection levels there was greatest replication for rocky intertidal habitats (7-9 replicates), hard bottom habitats of all depths (7-10 replicates), and deep (30-100m) soft bottom habitats (6-7 replicates) (Figure 6). The proposals also included at least 2 replicates of each habitat for MPAs with a high or moderate-high protection level. For very high protection levels, all proposals provided just one replicate of average kelp⁴. Proposal 2-XA provided just one replicate of deep soft habitat at the very high protection level, while proposals 4 and 1-3 had 2 and 3 replicates of this habitat respectively.

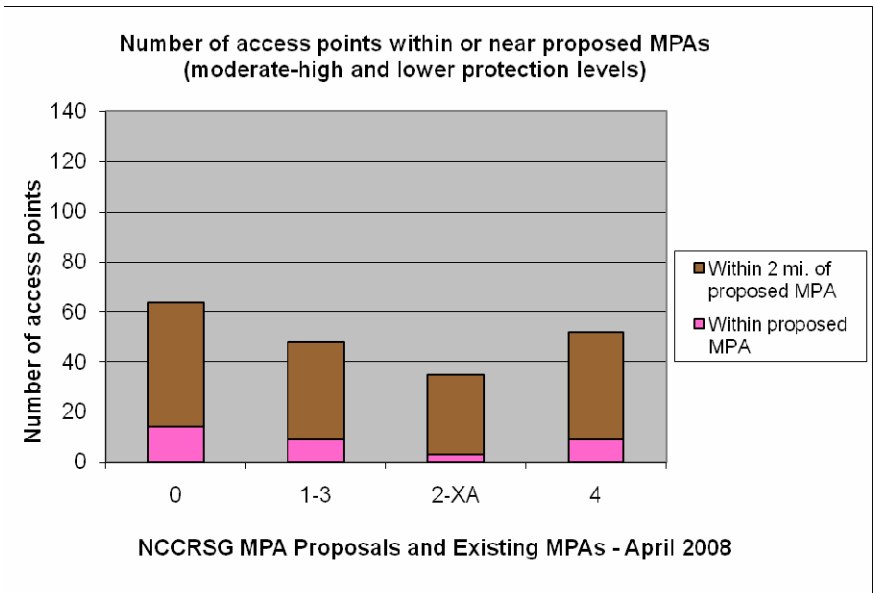
⁴ This may reflect a lack of accurate kelp mapping data.

Figure 1: Number of access points within or near proposed MPAs

1a) Higher Protection MPAs



1b) Lower Protection MPAs



1c) All proposed MPAs

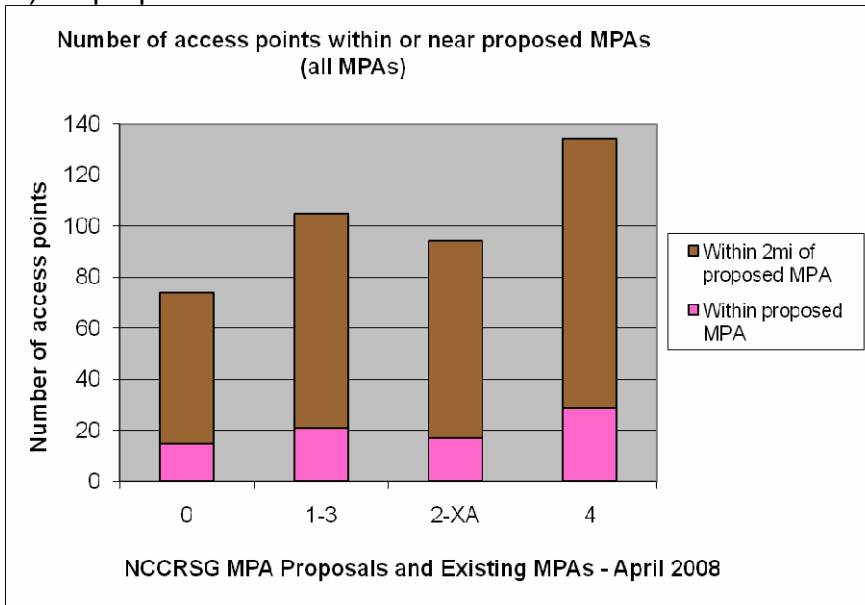
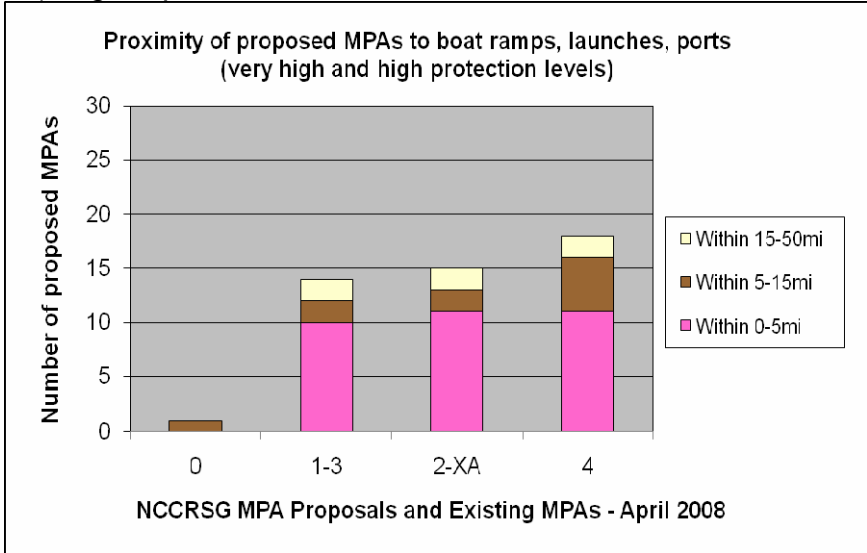
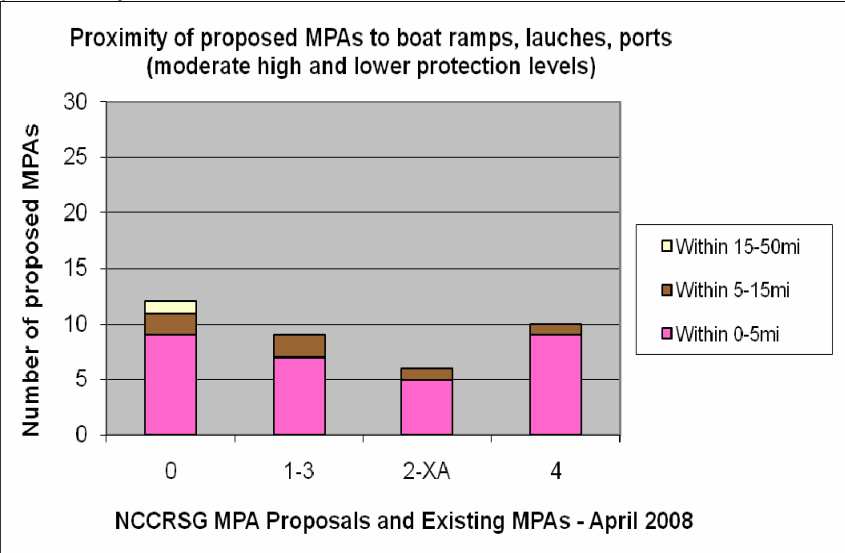


Figure 2: Proximity of proposed MPAs to boat ramps/launches/ports

2a) Higher protection MPAs



2b) Lower protection MPAs



2c) All proposed MPAs

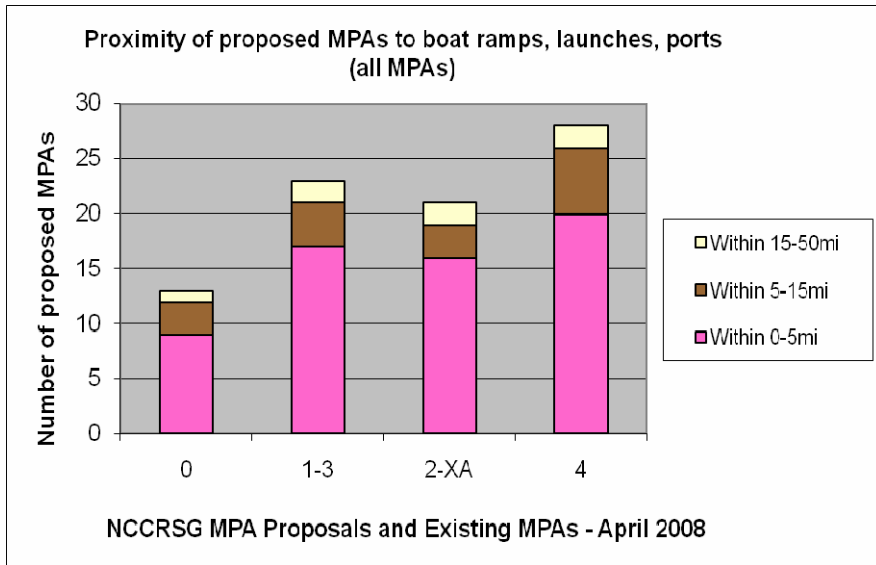
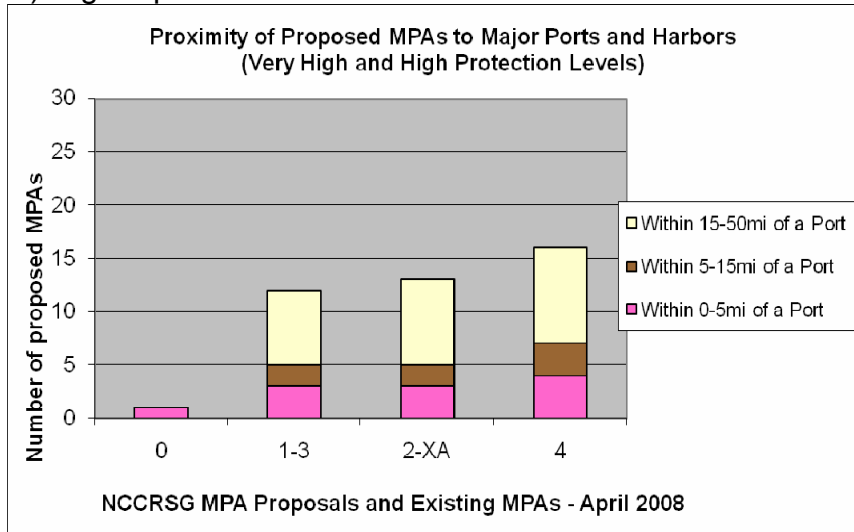
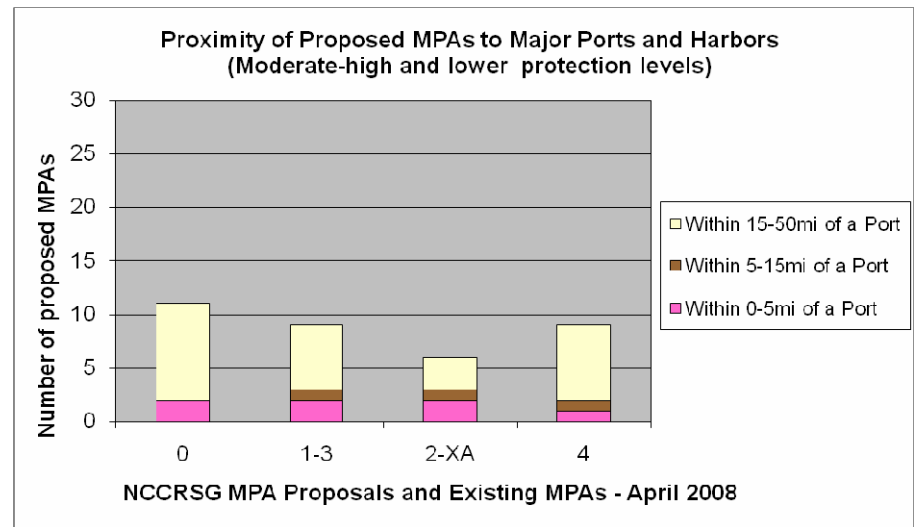


Figure 3: Proximity of proposed MPAs to major ports and harbors (Bodega Bay, San Francisco, and Half Moon Bay)

3a) Higher protection MPAs



3b) Lower protection MPAs



3c) All proposed MPAs

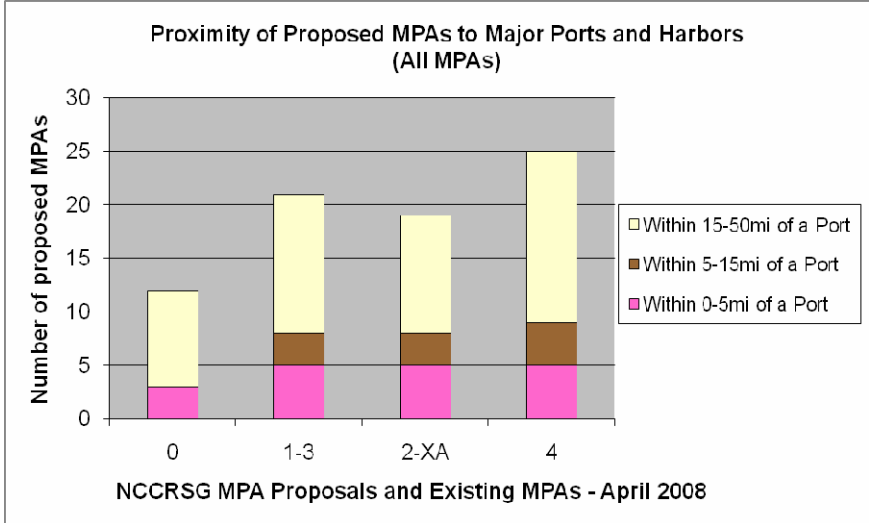


Figure 4: Proximity of proposed MPAs to major marine research institutions (Bodega Bay Marine Lab and Romberg Tiburon Center)

4a) Higher protection MPAs

4b) All proposed MPAs

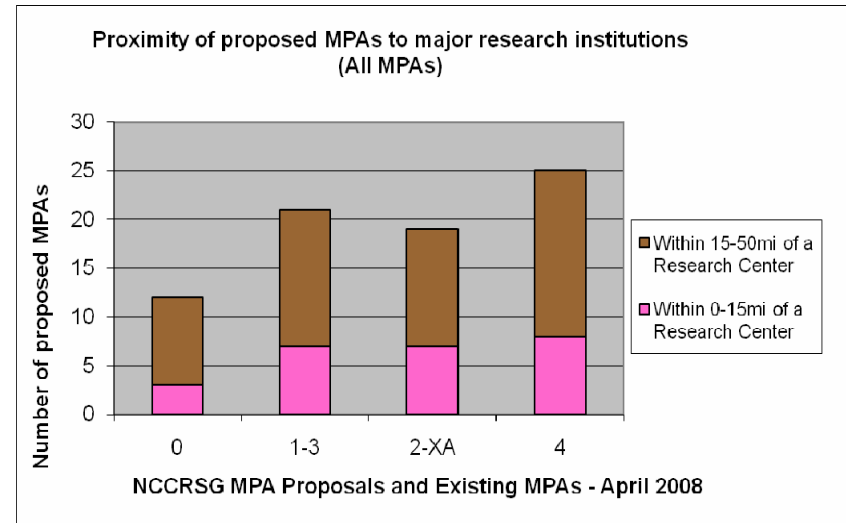
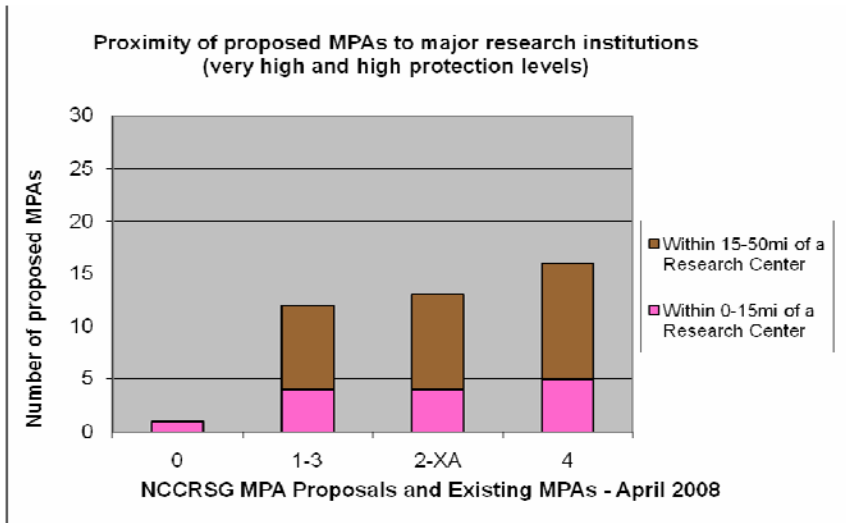


Figure 5: Number of long-term monitoring sites in proposed MPAs

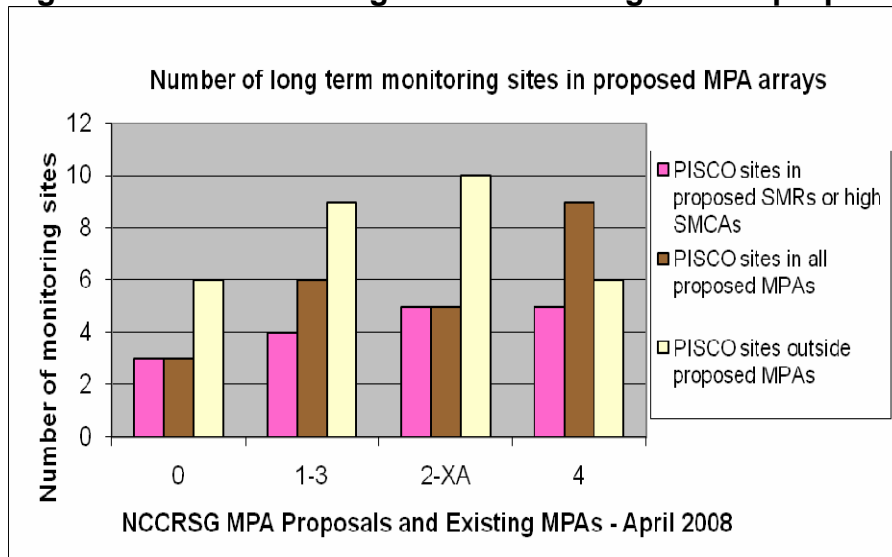
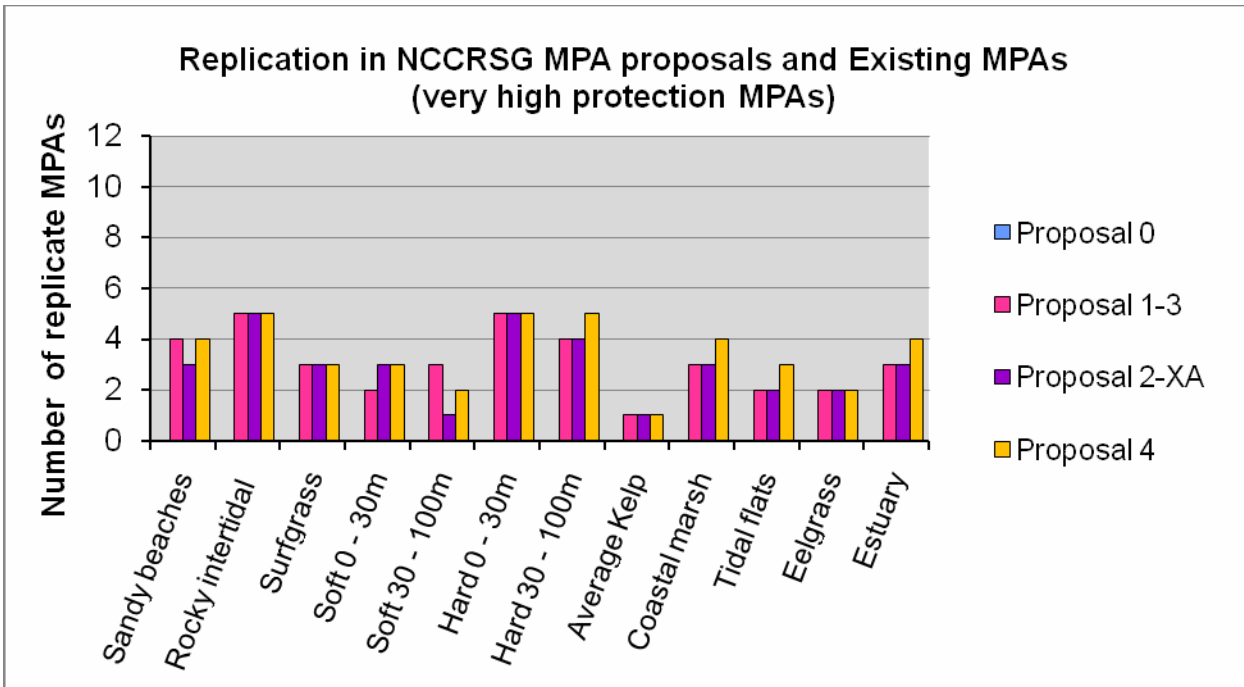
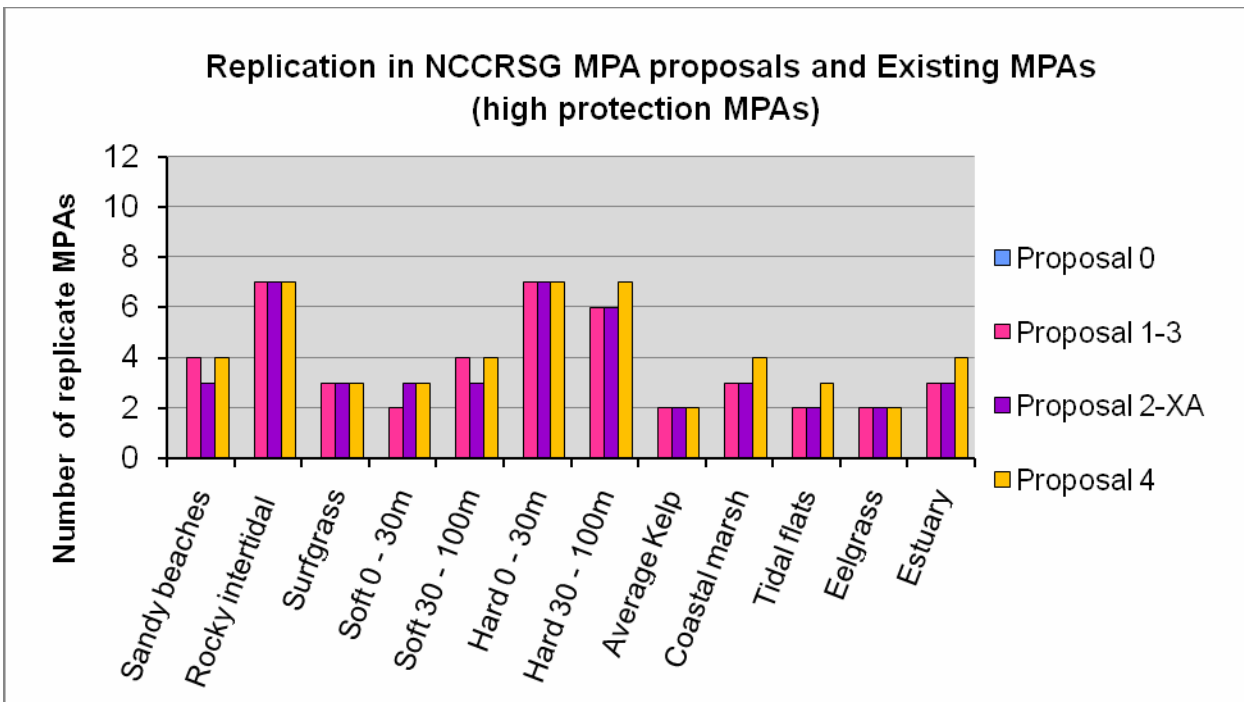


Figure 6: Habitat replication within study region in proposed MPAs

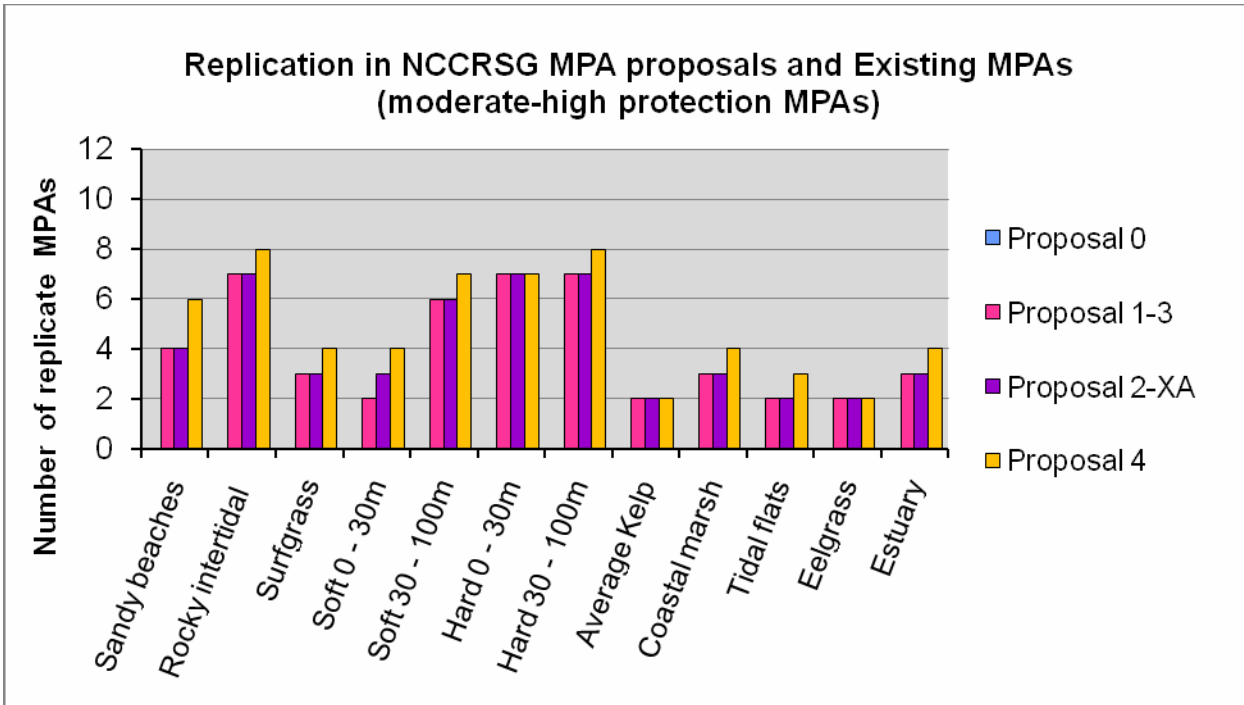
6a) Proposed MPAs with very high protection level



6b) Proposed MPAs with high protection level



6c) Proposed MPAs with moderate-high protection level



6d) All proposed MPAs

