



California Marine Life Protection Act Initiative

c/o California Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

To: MLPA South Coast Regional Stakeholder Group
From: MLPA Initiative Staff
Subject: Evaluation of existing MPAs, draft South Coast Regional Stakeholder Group MPA arrays, and draft external MPA proposals relative to MLPA Goal 3
Date: April 8, 2009

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 staff evaluated existing MPAs (Proposal 0), draft South Coast Regional Stakeholder Group (SCRSG) marine protected area (MPA) arrays, and draft external MPA proposals for their fulfillment of MLPA's Goal 3. In total, 10 draft arrays and proposals were evaluated.

Access is a key issue for recreational, education and study opportunities; the evaluation focuses on proximity of MPAs to access points, boat and kayak launches sites, state parks adjacent to the ocean, and marine research institutions. The number of long-term monitoring sites inside MPAs and the replication of habitats within MPAs as a measure of study opportunities were also tabulated.

In general, the draft SCRSG MPA arrays and draft external MPA proposals provide better recreational, educational and study opportunities than Proposal 0. The following is a summary (excluding Proposal 0) of the seven parameters included in the Goal 3 analysis:

1. *Coastal 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 draft arrays and the draft external proposals ranged from 122 (Draft External Proposal A) to 206 (Draft MPA Array Lapis B).
2. *Boat and kayak launch sites within or near proposed MPAs.* Launch sites located within MPA boundaries or within 2 miles of MPAs were counted. The total number of launch sites captured within Round 1 proposals ranged from 37 (Draft External Proposal A) to 67 (Draft External Proposal C). The number of launch sites found within SCRSG draft arrays were in the upper mid range with each proposal having at least 49 sites.

3. *Ports and harbors within given distances of proposed MPAs.* Draft arrays and draft external proposals had 10 (Opal B) to 13 (Lapis B and Opal A) ports and harbors within 5 miles of proposed MPAs.
4. *Terrestrial California State Parks located adjacent to proposed MPAs.* Draft arrays and draft external proposals had 5 (Draft External Proposal A) to 18 (Lapis B) state parks that were adjacent to proposed onshore MPAs.
5. *Major marine research and educational institutions within given distances of proposed MPAs.* Draft arrays and the draft external proposals had 29 (Draft External Proposal B) to 42 (Opal A) institutions within 15 miles of proposed MPAs of all protection levels.
6. *Long-term marine research monitoring sites located within proposed MPAs.* The number of established, long-term monitoring sites located within the boundaries of proposed MPAs was counted. Draft arrays and draft external proposals had 127 (Draft External Proposal A) to 309 (Draft External Proposal C) monitoring sites within proposed MPAs of all levels of protection.
7. *Replication of habitats within the study region.* Replication provided by the draft arrays and proposals ranged from 1 - 25 replicates across proposed MPAs of all protection levels, excluding tidal flats and eelgrass.

Three additional evaluations (not outlined in this document) that take Goal 3 of the MLPA into consideration are:

- The California Department of Fish and Game's feasibility analysis
- The California State Parks evaluation
- The Ecotrust evaluation of potential impacts to areas of importance to recreational fishing modes

Methodology

MLPA Initiative staff used simple metrics and the best readily-available data within geographic information systems (GIS) to evaluate the extent to which draft MPA arrays and proposals address Goal 3 of the MLPA. This evaluation compared draft MPA arrays and proposals relative to one another and to the existing MPAs, including:

- Proposal 0 (existing MPAs),
- Six draft SCRSG MPA arrays (Lapis A, Lapis B, Opal A, Opal B, Topaz A, and Topaz B)
- Three draft external MPA proposals (external proposals A, B, and C)

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

- *Number of coastal access points within and near proposed MPAs.* In total, there are 404 access points that are mapped in or adjacent to the south coast study region. Existing data on access points come from the California Coastal Access Guide. For this parameter, it was evaluated to determine the number of access points located inside MPA boundaries or within 2 miles for proposed MPAs with: a) very high level of

protection (LOP), b) high and moderate high LOP, and c) all levels of protection. Only shoreline MPAs are considered in the evaluation of access. Access points that are within the border of a MPA and within 2 miles of another MPA are only counted once.

- *Number of boat and kayak launch sites within or near proposed MPAs.* There are 116 sites that are mapped in the study region and they include: boat ramps, kayak launch sites, and boat launch sites. Launch sites were counted if located inside MPA boundaries, within 2 miles, or within 2-5 miles of proposed MPAs. This parameter was also evaluated for proposed MPAs with: a) very high level of protection (LOP), b) high and moderate high LOP, and c) all levels of protection. The distance of 5 miles reflects potential use of MPAs by users with small water craft.
- *Number of ports and harbors within given distances of proposed MPAs.* Eighteen ports and harbors exist in the study region. Each proposed MPA was evaluated to determine the number of ports and harbors: within 0-5 miles, 5-15 miles, or 15-50 miles. Proposed MPAs were separated out by those with: a) very high level of protection (LOP), b) high and moderate high LOP, and c) all levels of protection.
- *Number of terrestrial California State Parks located adjacent to proposed nearshore MPAs.* There are thirty-two state parks located on the coast adjacent to the Pacific Ocean in the south coast study region. The information is provided by California State Parks with individual park information from the various districts in the region. State parks were counted if they intersected (adjacent to) nearshore MPAs and their associated boundaries. This parameter was evaluated for proposed MPAs with: a) very high level of protection (LOP), b) high and moderate high LOP, and c) moderate LOP or lower.

Evaluation of educational and study opportunities focused on:

- *Number of major marine research and educational institutions within given distances of proposed MPAs.* The evaluation is limited to the major research and educational institutions in the region, with 49 in total. These institutions include: aquariums, research and educational institutes, education only institutes, and research only institutes. For this parameter, it is determined how many institutes are within 15 miles or within 15-50 miles of proposed MPAs by the following level of protections: a) very high, b) high and moderate high, and c) all levels of protection.
- *Number of long-term marine research monitoring sites located within proposed MPAs.* This parameter considers the key, long-term monitoring sites in the study region and includes nearly 1,400 sites. This parameter is evaluated for the number of monitoring sites located within proposed MPAs with: a) very high level of protection, b) high and moderate high LOP, and c) all levels of protection.
- *Number of habitat replicates, for each habitat, within the study region.* There are fifteen habitats under consideration: sandy beaches, rocky shores, surfgrass, kelp, hard substrate (0-30 m), hard substrate (30-100 m), hard substrate (100-3000 m), soft substrate (0-30 m), soft substrate (30-100 m), soft substrate (100-200 m), soft substrate (200-3000 m), soft (all depths), estuary, coastal marsh and eelgrass. A habitat is considered to be present within a MPA if at least a critical amount of that habitat is

present, based on the MLPA Master Plan Science Advisory Team (SAT) evaluation methods. The number of habitat replicates is counted within a MPA proposal. Habitat replication will be considered for proposed MPAs at a) Moderate-high LOP or higher, and b) all levels of protection.

Evaluation Results

Recreational Opportunities

Access to MPAs is important for both consumptive and non-consumptive users of the marine environment (Figure 1). Therefore, one parameter in the Goal 3 analysis determined how many access points were captured within or near (2 miles) draft MPA arrays and draft external proposals. Access points in very high protection MPAs that limit take of marine resources may result in fewer consumptive recreational opportunities. Taking this into account, the number of access points within MPAs at a high level of protection (LOP) or lower was also assessed.

In total, there are 404 coastal access points within the study region. Draft MPA Array Lapis B (206 access points) and Draft External Proposal C (203 access points) had the greatest overall accessibility when considering MPAs of all protection levels; yet for both proposals, most of the access points fall within MPAs at a very high level of protection. Draft MPA Array Opal A (105 access points), Draft MPA Array Lapis A (87 access points), and Draft External Proposal B (83 access points) had the greatest number of access points within or near MPAs at a high LOP or lower. Draft External Proposal A provided the least access with 122 access points within or near proposed MPAs of all levels of protection. Draft MPA Array Topaz A had the fewest access points (20 access points) within MPAs with a high LOP or lower.

Another parameter to assess recreational opportunities is access from boat and kayak launch sites. The 6 draft arrays and 3 draft external proposals provided slightly varying overall access from boat and kayak launch sites within or near (2 miles) proposed MPAs (Figure 2). In total, there are 116 kayak and boat launch sites within the study region. Considering MPAs at all levels of protection, External Proposal C provides the greatest access with 67 launch sites within or near proposed MPAs, while External Proposal A provided the least access with only 37 sites. The proposals that provide the greatest access change once very high level of protection MPAs are removed from the summary. Draft MPA Array Opal A (31 sites), Draft MPA Array Topaz B (27 sites), and External Proposal B (24 sites) provide the greatest access from kayak launch sites within or near proposed MPAs. Conversely with very high MPAs removed, Draft MPA Array Topaz A (8 sites) and Draft External Proposal C (12 sites) provide the least access.

The third parameter is to determine the number of ports and harbors within given distances of proposed MPAs. There are 18 ports and harbors in the study region, which were included in this analysis. The evaluation found that draft arrays and external proposals captured most of the ports and harbors within 5 miles of proposed MPAs and nearly all ports and harbors were captured within 5-15 miles of proposed MPAs (see Figure 3). Across the arrays and proposals,

between 10 (Opal B) and 13 (Lapis B and Opal A) ports and harbors were located within 5 miles of proposed MPAs of all levels of protection. Each draft MPA array and proposal captured all 18 ports and harbors within 15 to 50 miles of MPAs at levels of protection. Considering MPAs with a high level of protection or lower, the number of ports and harbors within 5 miles of proposed MPAs dropped from that when very high MPAs were considered. External Proposal C did not include any ports and harbors within 5 miles of proposed MPAs. While Topaz B had the greatest number of ports and harbors and included 8 within 5 miles of MPAs with a high LOP or lower.

The final recreational parameter counts the number of state parks that are adjacent to onshore MPAs (see Figure 4). In total there are 32 coastal state parks considered. The number of state parks adjacent to proposed onshore MPAs ranged from 5 state parks (External Proposal A) to 18 state parks (Lapis B). Opal B, Lapis B and External Proposal C had the most state parks adjacent to state marine reserves (very high LOP) with between 9 – 11 state parks; this finding is important as state marine reserves will restrict consumptive recreational activities within state waters. Topaz B had the most state parks (2) adjacent to high or moderate-high MPAs. While Lapis B had a number of state parks adjacent to very high MPAs, it also had the most state parks (11) adjacent MPAs with moderate or lower LOPs.

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; therefore, these parameters were used to evaluate such opportunities (Figures 5 and 6). In addition, 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 7).

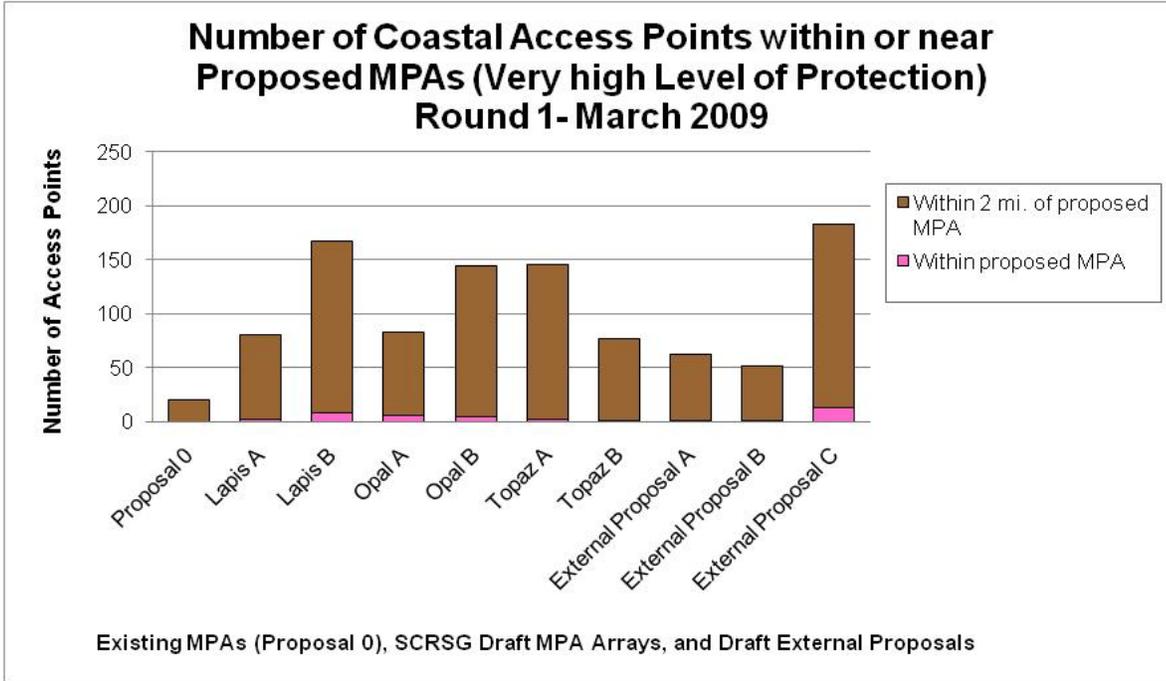
In total, 49 major research and educational institutions were included in this evaluation; this sample population does not represent all the institutions in the study region, but instead represents important institutions to provide a relative comparison. Draft MPA Array Opal A had the greatest number of institutions near (as defined as within 15 miles) proposed MPAs, with 42 institutions. Draft External Proposal B had the fewest institutions (29) near proposed MPAs at all levels of protection. The draft arrays and proposals capture all the major research and educational institutions within 15 to 50 miles of proposed MPAs at levels of protection. Considering institutions near very high protection MPAs, External Proposal C has greatest number (41 institutions) and Draft MPA Array Topaz B had the least (24 institutions). Draft MPA Array Opal A had the most institutions (17) near proposed MPAs of high or lower LOPs.

There are 1,394 long-term monitoring sites in the study region. Draft External Proposal C included the most monitoring sites (309 sites) within MPAs of all protection levels; 257 of these sites were within MPAs of very high protection level. Draft External Proposal A had the fewest monitoring sites (127 sites) within MPAs of all protection levels; ninety-one of these sites were within MPAs of very high protection level (see Figure 6).

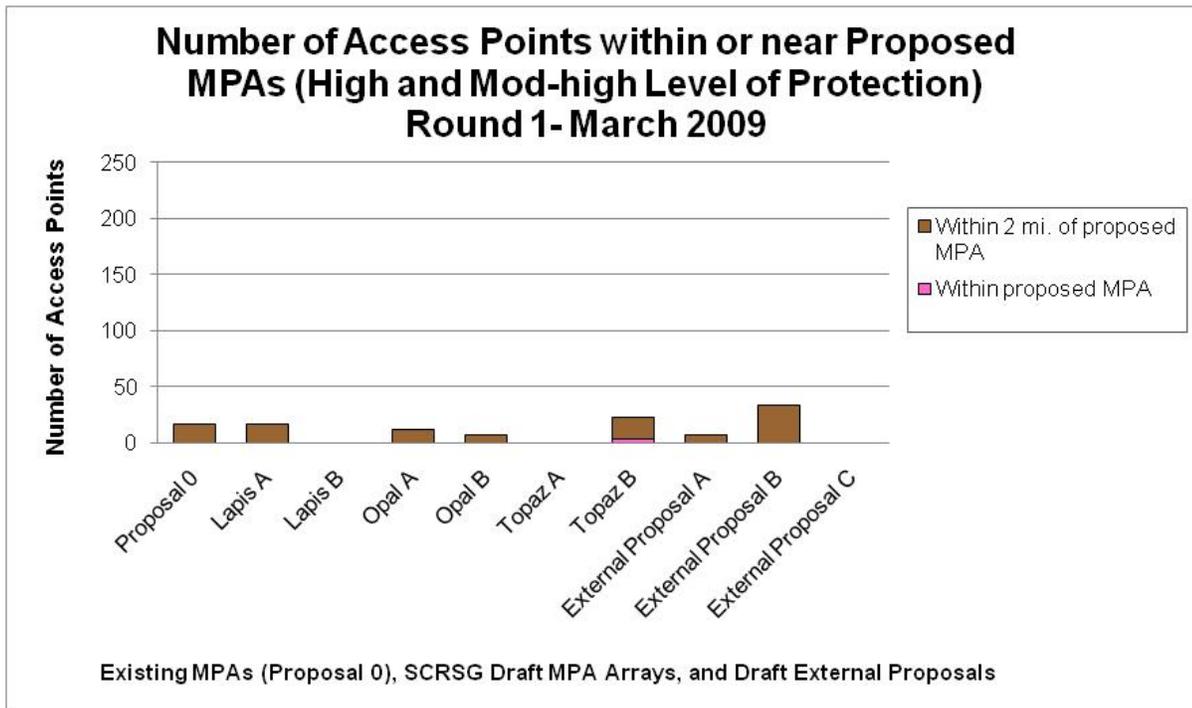
The SCRSG draft arrays and draft external proposals provided varying replication across habitats; although most meet replication guidelines (see Figure 7). Some habitat may not meet guidelines due to patchy data or poor representation, such as surfgrass. The greatest habitat replication for MPAs at all protection levels occurred for rocky shores habitat (7-25 replicates) and soft bottom at all depths (10-19 replicates).

Figure 1: Coastal access points within and near proposed MPAs

1a) Very high Level of Protection MPAs



1b) High and Moderate-high Level of Protection MPAs



1c) All MPAs: At all Levels of Protection

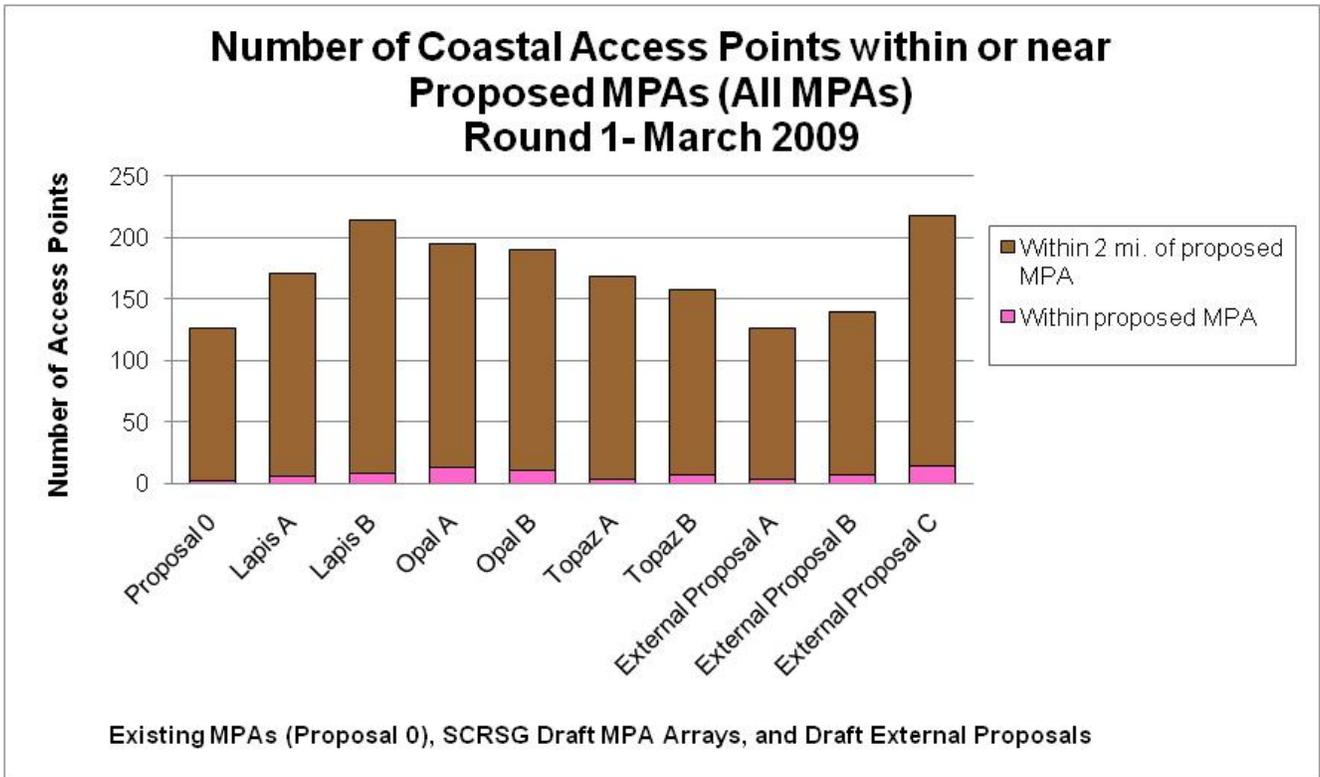
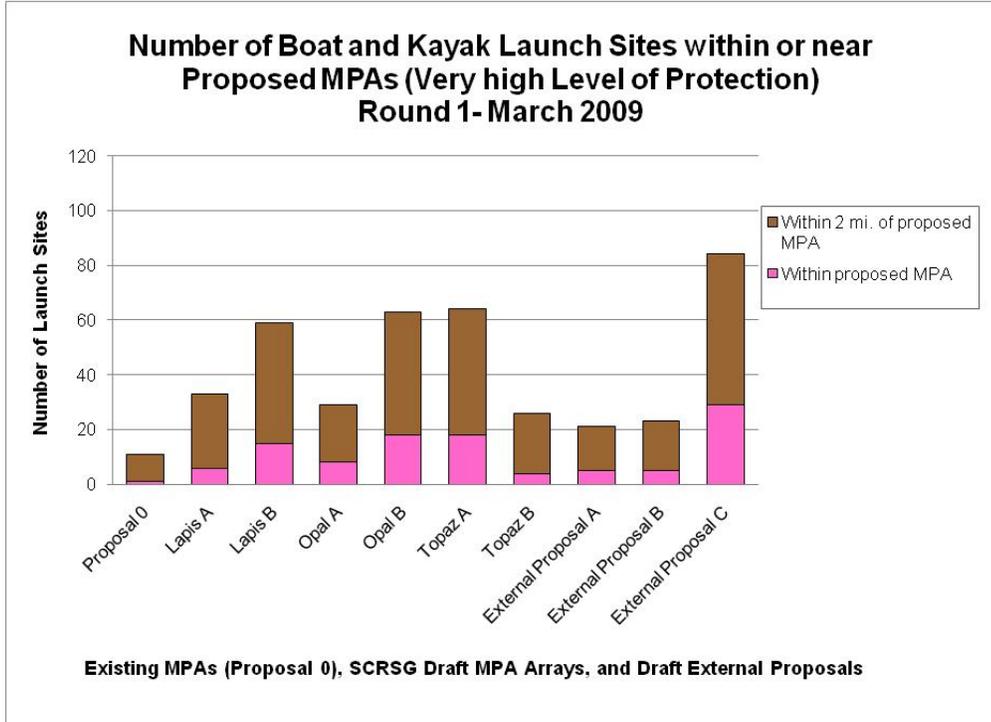
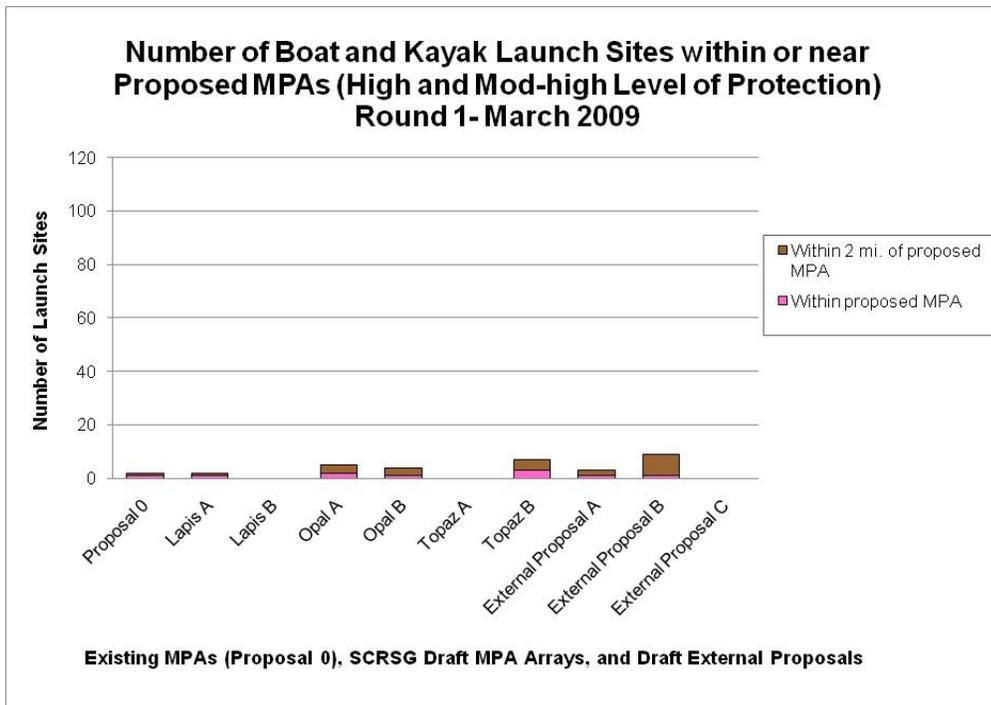


Figure 2: Boat and kayak launch sites within or near proposed MPAs.

2a) Very high Level of Protection MPAs



2b) High and Moderate-high Level of Protection MPAs



2c) All MPAs: At all Levels of Protection

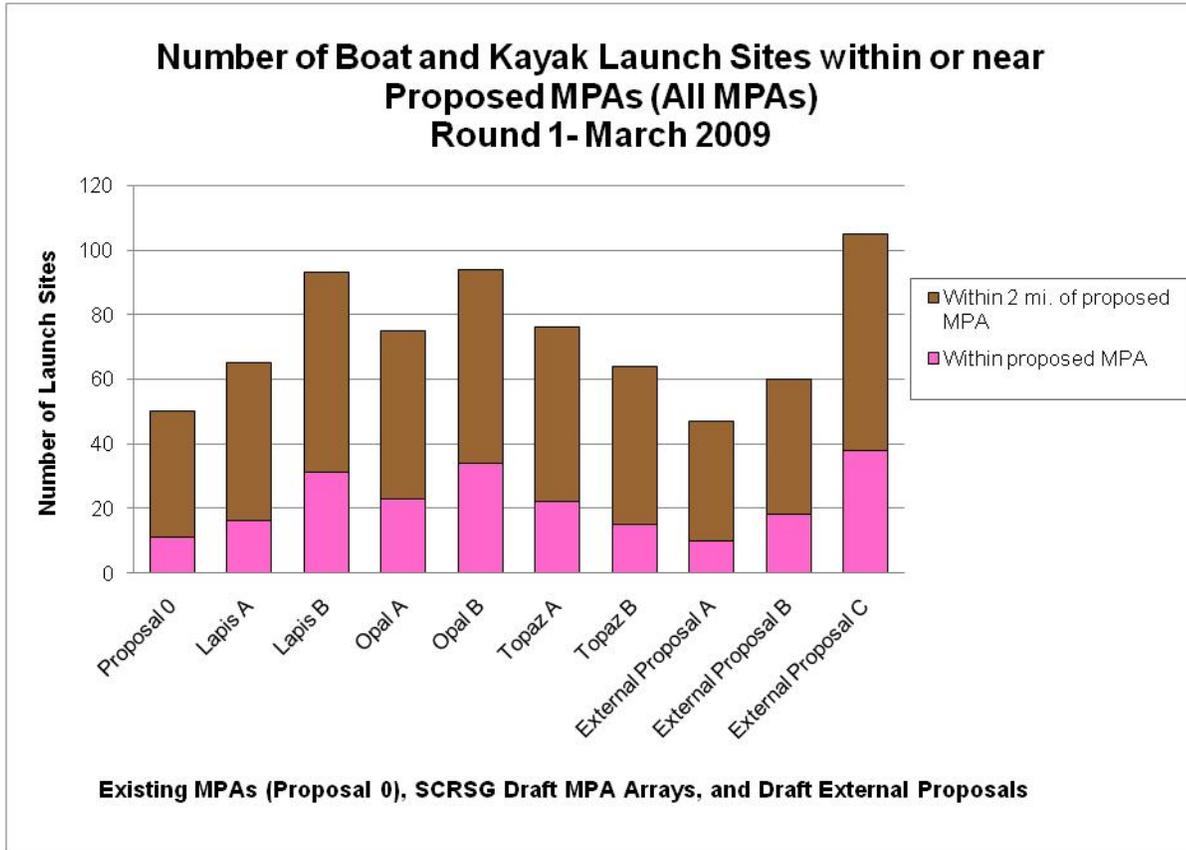
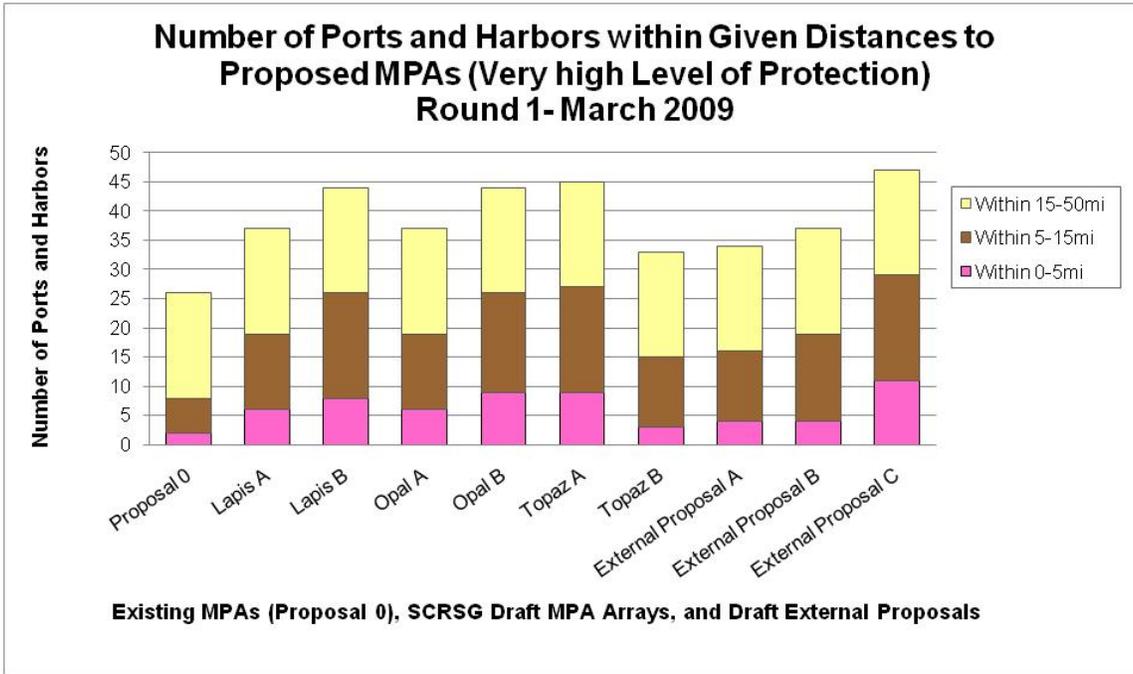
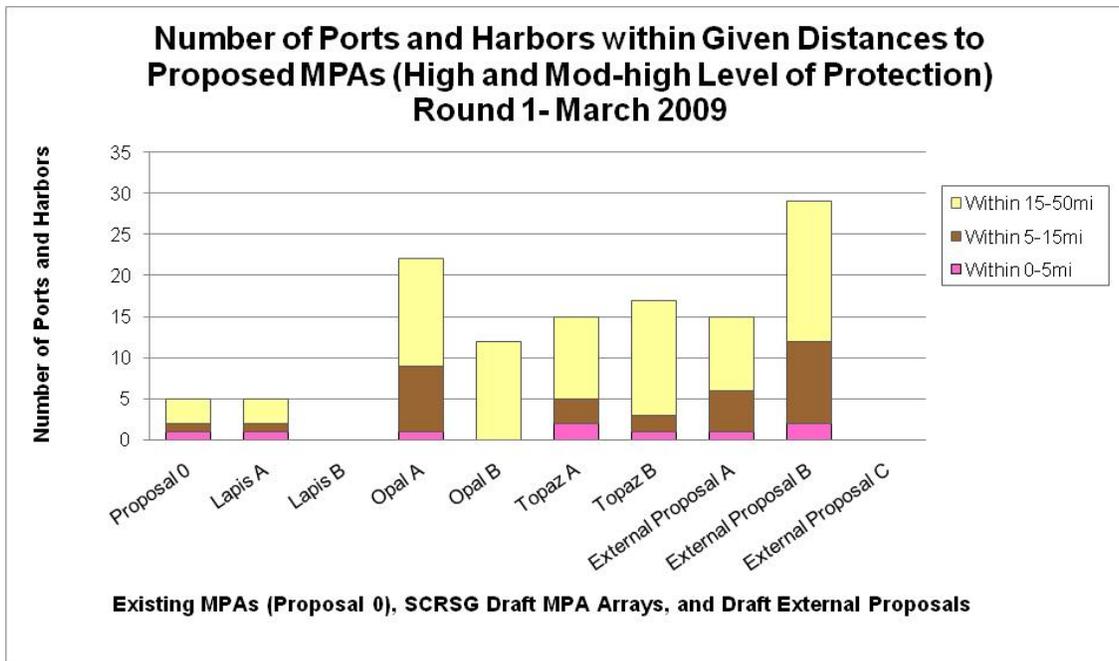


Figure 3: Ports and harbors within given distances of proposed MPAs.

3a) Very high Level of Protection MPAs



3b) High and Moderate-high Level of Protection MPAs



3c) All MPAs: At all Levels of Protection

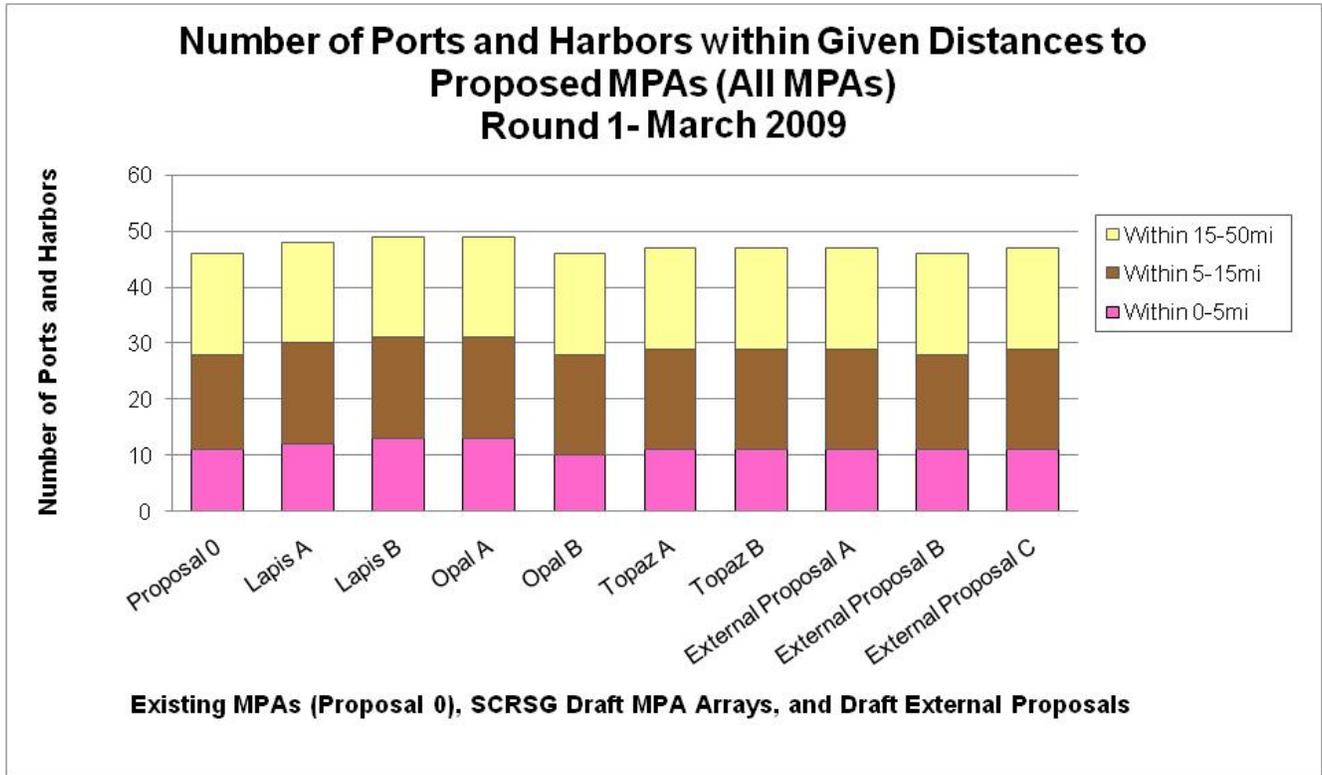


Figure 4: California State Parks located adjacent to MPA boundaries.

4a) All MPAs: At all Levels of Protection

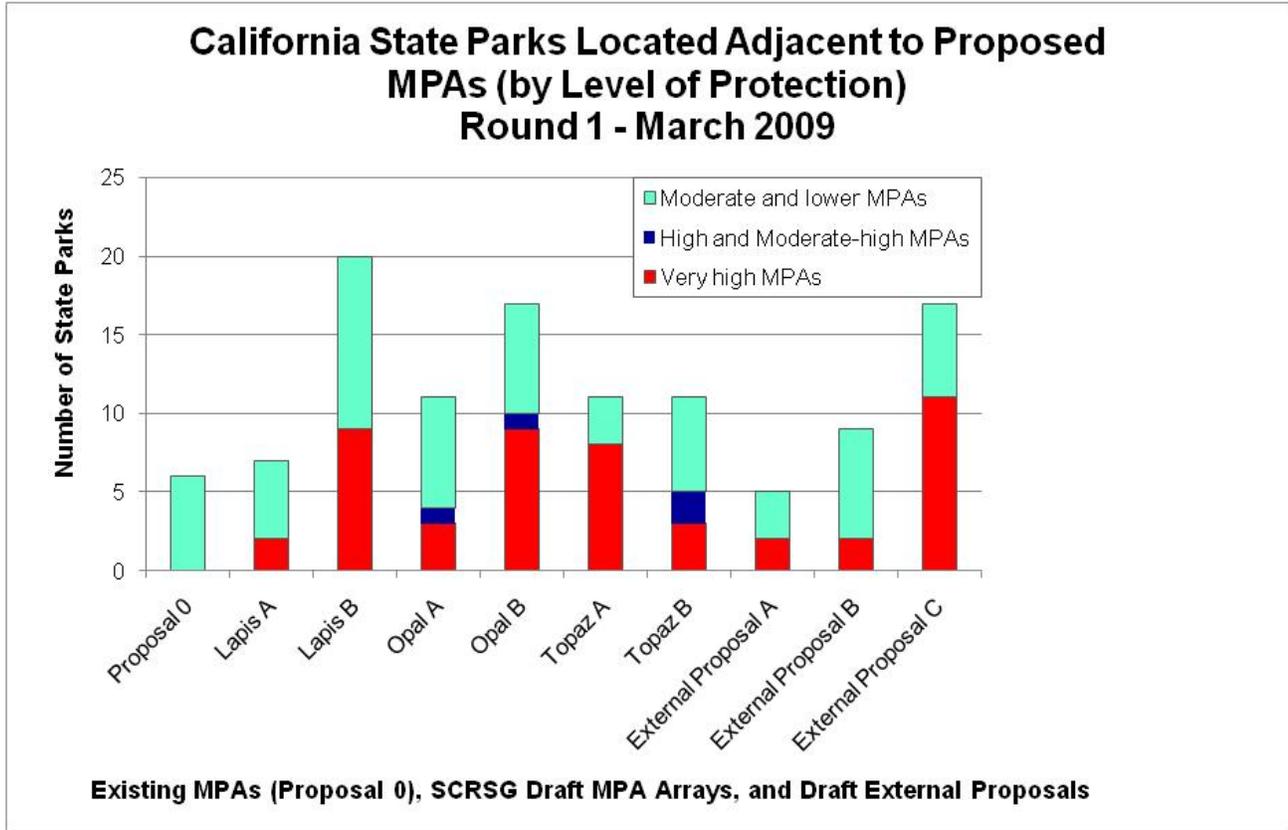
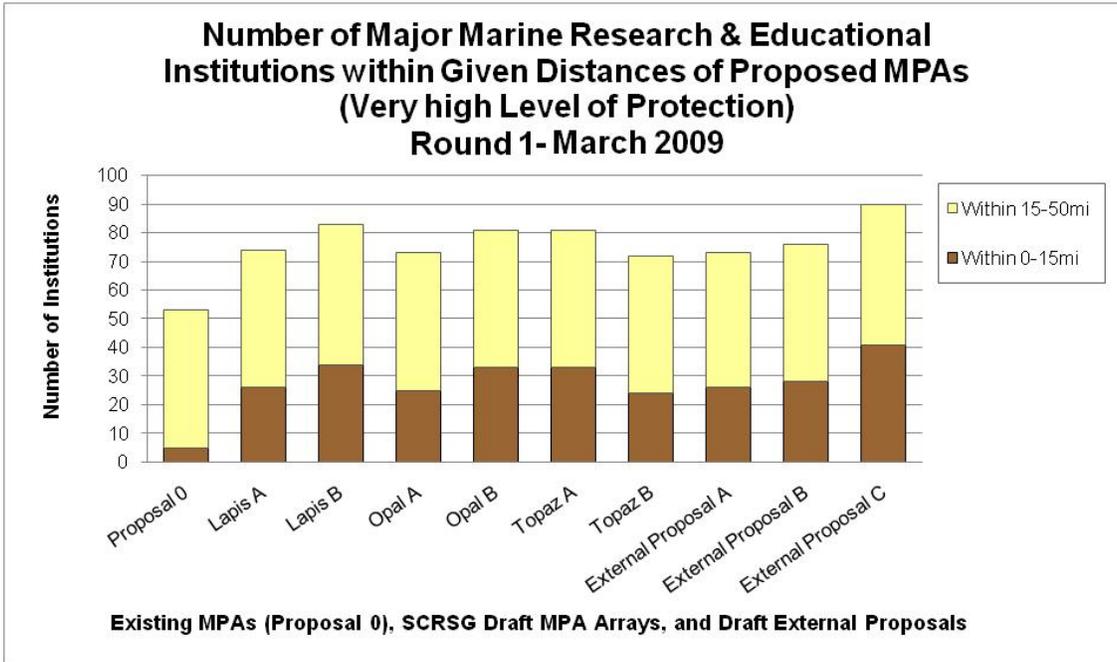
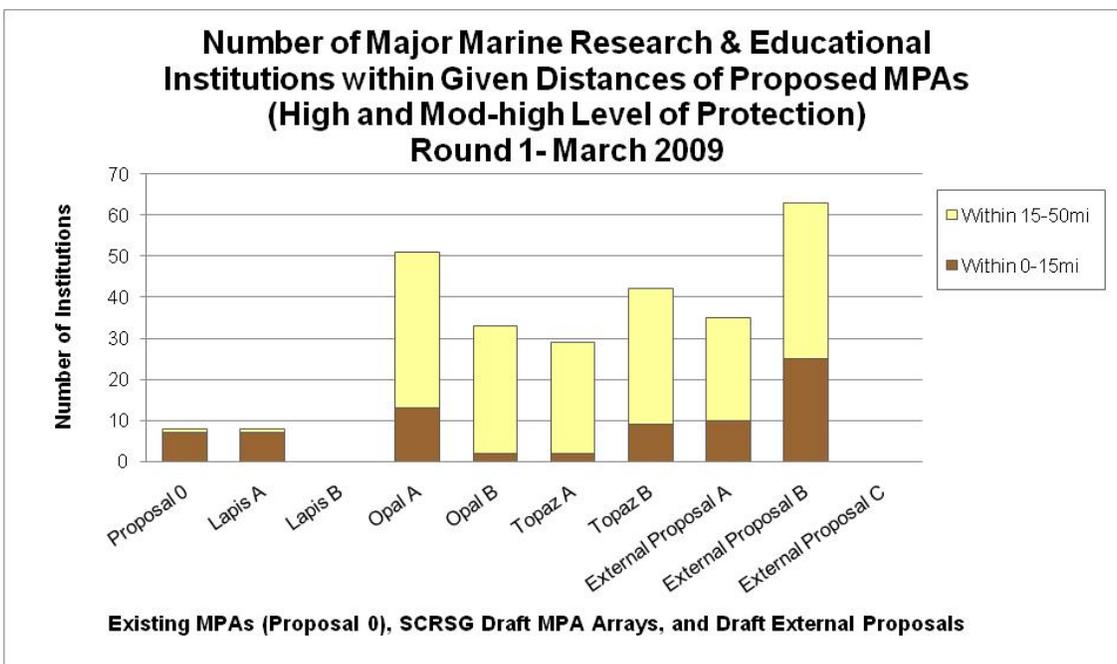


Figure 5: Major marine research and educational institutions within given distances of proposed MPAs.

5a) Very high Level of Protection MPAs



5b) High and Moderate-high Level of Protection MPAs



5c) All MPAs: At all Levels of Protection

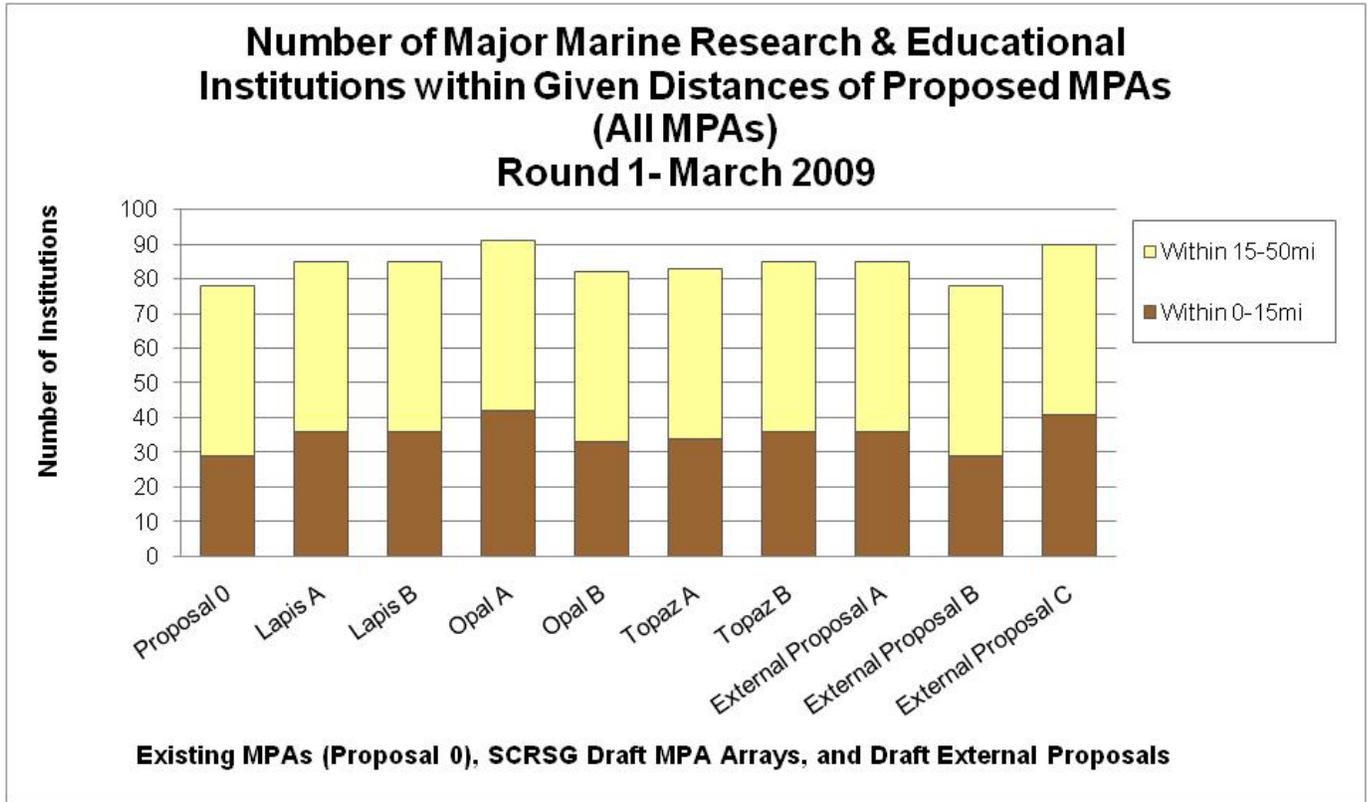


Figure 6: Long-term marine research monitoring sites located within proposed MPAs.

6a) All MPAs: At all Levels of Protection

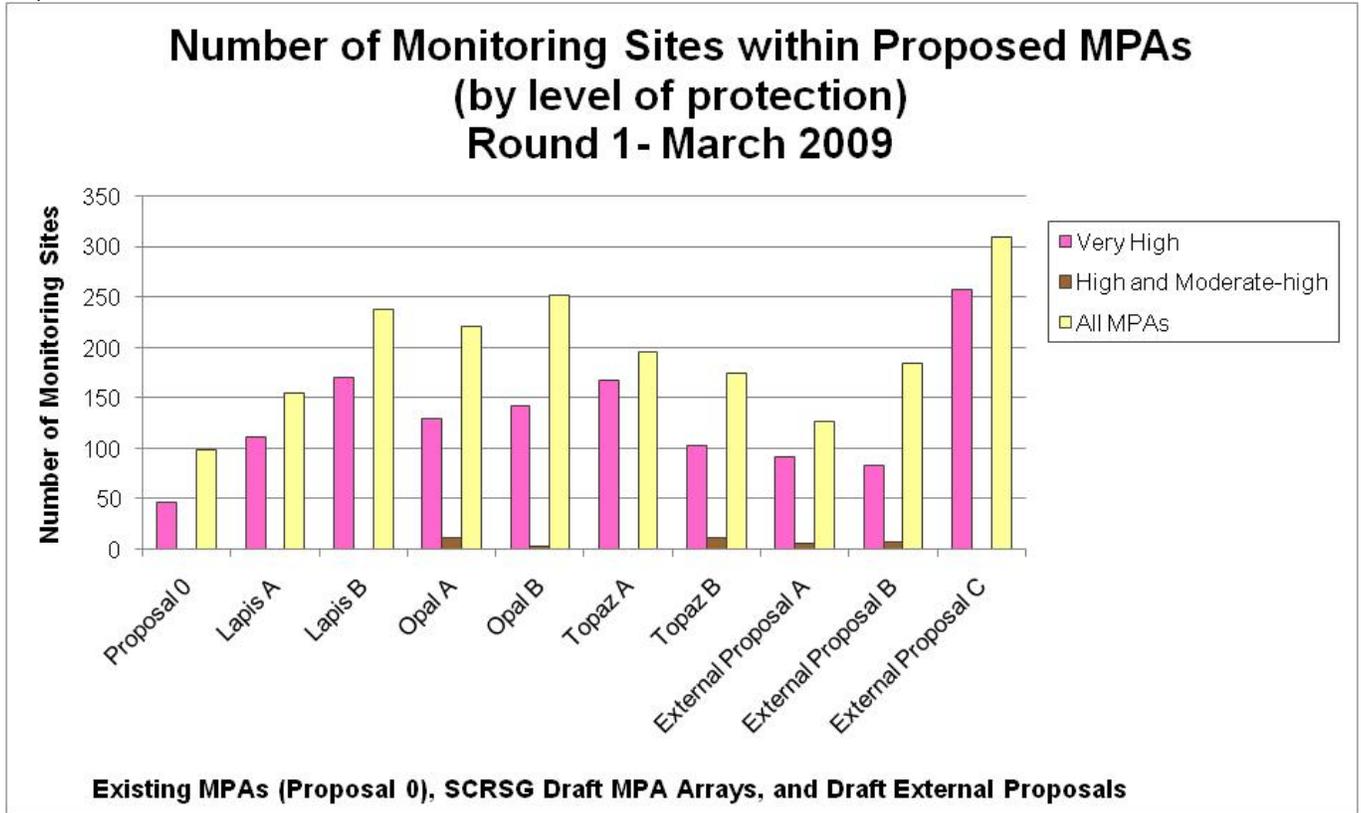
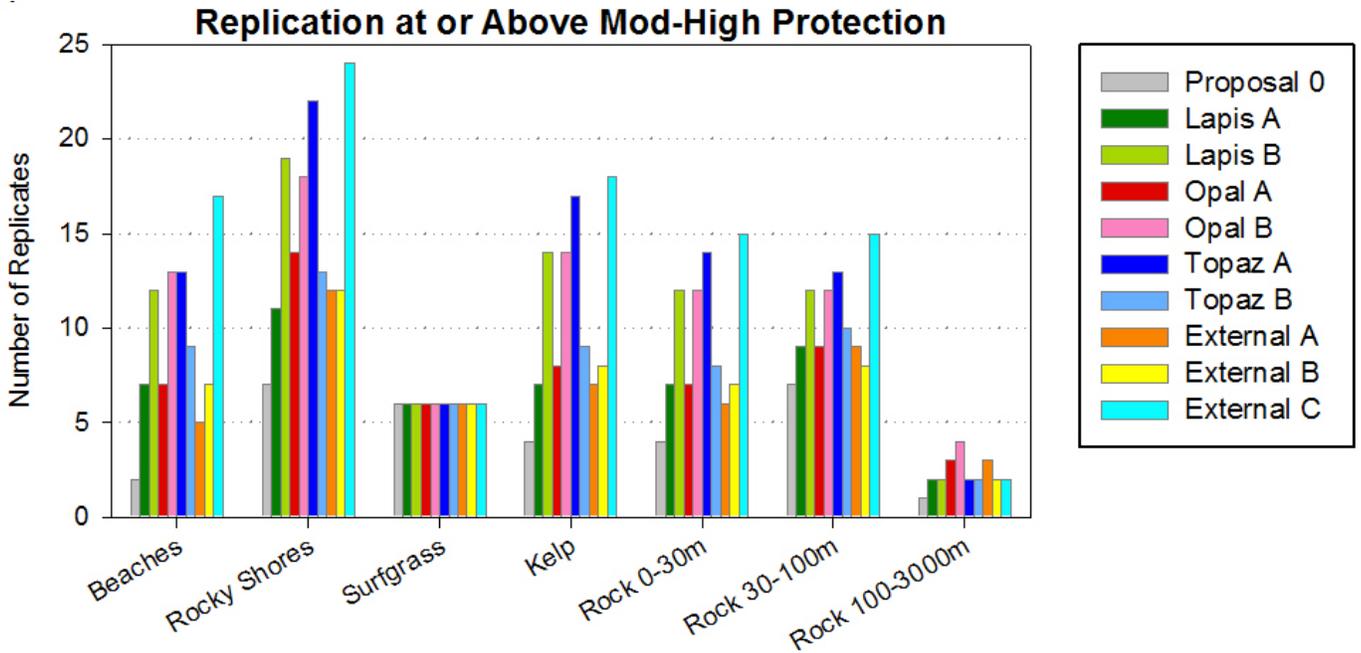
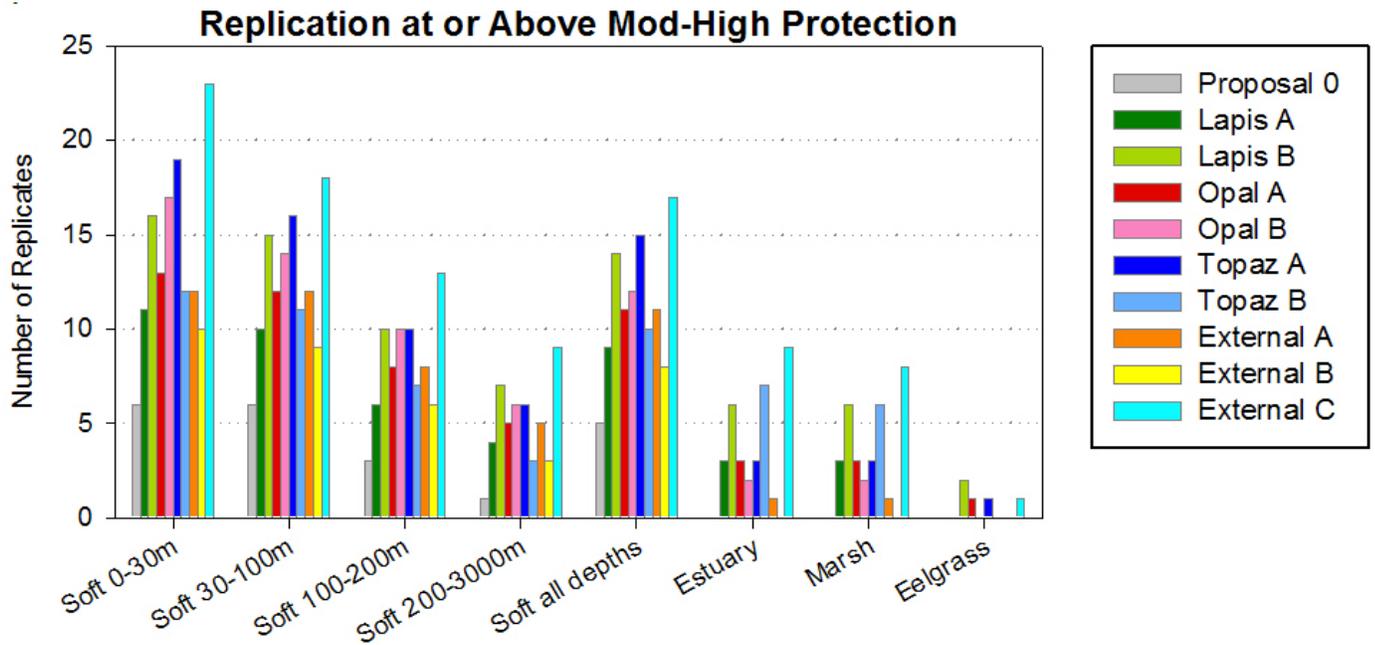


Figure 7: Habitat replication within study region in proposed MPAs

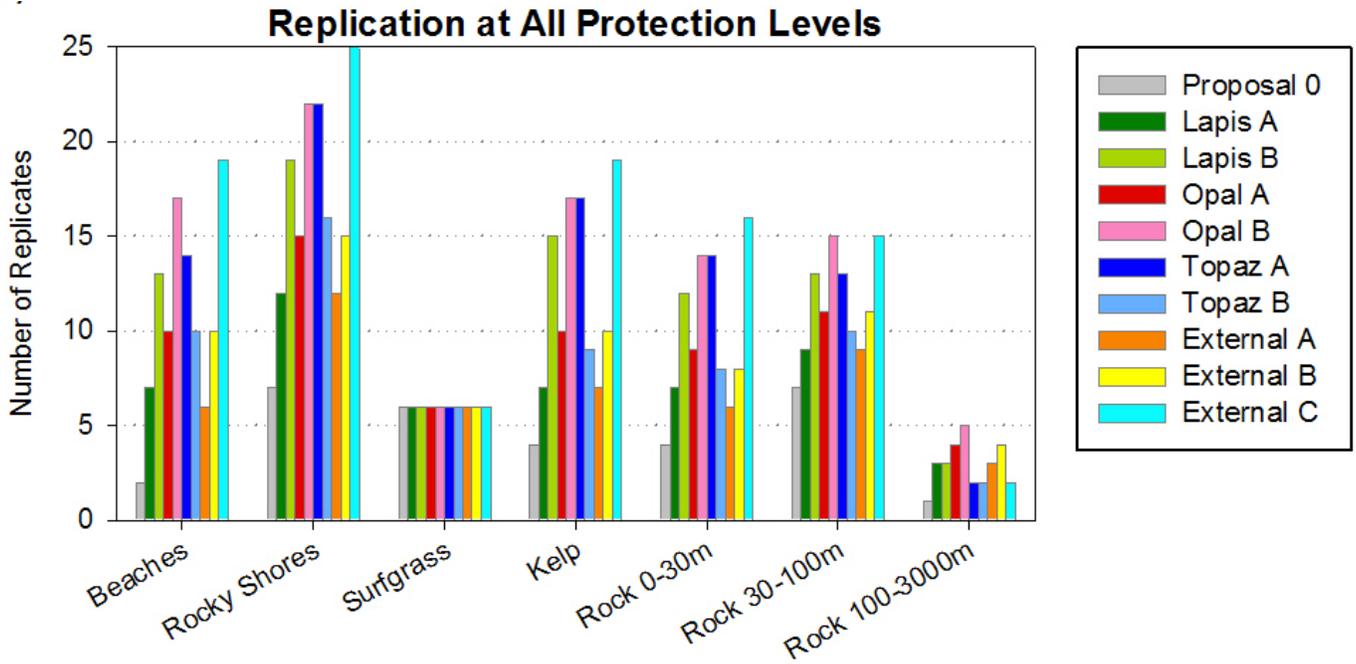
7a) Moderate-high or above Level of Protection MPAs



7b) Moderate-high or above Level of Protection MPAs



7c) All MPAs: At all Levels of Protection



7d) All MPAs: At all Levels of Protection

