Draft Evaluation of Ecological Contributions of Pending Military Closures

DRAFT Presentation for the MLPA Blue Ribbon Task Force
Presented to the MLPA Master Plan Science Advisory Team
May 15, 2009 • Conference Call

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Pending military closures are included in:
- Lapis A
- Opal A
- Topaz B
- External B
Draft MPA Array Lapis B

MLPA South Coast Study Region: Subregion 7 - Santa Catalina and Santa Barbara Islands

For more detailed maps please visit: www.marinemap.org/marinemap

California Marine Life Protection Act (MLPA) Initiative

Round 1
Lapis B Draft MPA Array

Legend
- Proposed State Marine Conservation Area (SMCA)
- Proposed State Marine Park (SMP)
- Proposed State Marine Reserve (SMR = No Take)
- Pending Military Closures
- South Coast Study Region Boundary
- Coastal Access

This map represents a draft marine protected area (MPA) array generated by a science-interest work group within the MLPA South Coast Regional Stakeholder Group. This draft MPA array is under review; it is NOT a recommendation to the California Fish and Game Commission.
MLPA South Coast Study Region: Subregion 7 - Santa Catalina and Santa Barbara Islands

California Marine Life Protection Act (MLPA) Initiative
Round 1
Opal B Draft MPA Array

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Ecology of Military Islands

- San Clemente and San Nicolas islands are the most isolated and remote islands in the Southern California Bight
- Less accessible to various interest groups
  - Larger kelp bass, sheephead and lobsters
  - Abundant giant seabass
- Less likely to be affected by mainland pollution
- Least impacted by invasive species
  - E.g., Sargassum filicinum
Ecology of Military Islands

• More rocky reef habitat and kelp beds
  – Less pollution and sedimentation, and presence of large predators contribute to abundant kelp

• Significantly deeper kelp habitat
  – Due to water clarity

• Unusually large stands of surfgrass

• Largest populations of purple hydrocoral
  – Excluding Farnsworth Bank (Santa Catalina)

• Critical and substantial marine mammal haulouts and bird roosting areas
Ecological Features of San Clemente

• **Northern range extensions of Panamic species**
  – Panamic arrow crab (*Stenorhynchus debilis*)
  – Warty sea slug (*Pleurobranchus areolatus*)
  – Arbacia sea urchin (*Arbacia incisa*)
  – Guadalupe cardinalfish (*Apogon guadalupensis*)
  – Pink cardinalfish (*A. pacificus*)
  – Swallow damselfish (*Azurina hirundo*)
  – Purple brotula (*Oligopus diagrammus*)

• **Only rock-based morph of elk kelp** (*Pelagophycus porra*) **at the islands**

• **Remnant population of endangered white abalone** (*Haliotis sorensenii*)
Marine Birds/Mammals at San Clemente

• San Clemente Island
  – Supports majority of marine birds and mammals in bioregion
  – Supports all California sea lion and Northern elephant seal rookeries in bioregion

• Proposed Military Closures at San Clemente Island
  • Include sites used by 26% of Pacific harbor seals on the island (0.4% of study region population)
  • Include known Northern elephant seal rookery and haulout used by 2% of island population (0.8% of study region population)
Ecological Features of San Nicolas

• Significantly deeper eelgrass habitat
  – Due to water clarity

• Largest remaining remnant populations of endangered black abalone

• Presence of large predators enhances ecosystem function
  – Larger predatory fish (e.g. kelp bass, sheephead, giant seabass) and invertebrates (e.g., lobster)
  – Resident southern sea otter population
Marine Birds/Mammals at San Clemente

• **San Nicolas Island**
  – Supports large proportion of marine birds and mammals in West Channel Islands Bioregion
  – Supports large proportion of California sea lion and Northern elephant seal in study region
  – Supports only resident breeding population of the southern sea otter in the study region

• **Proposed Military Closures at San Nicolas Island**
  – Includes a haulout used by 6% of California sea lions on the island (0.4% of study region population)
Ecological Features of Begg Rock

• Emergent sheer pinnacle reef 10 miles west of San Nicolas

• Unique invertebrate assemblage, including:
  – Purple hydrocoral
  – Shallow aggregations of *Metridium* and other anemones
<table>
<thead>
<tr>
<th>MPA/Closure Name</th>
<th>Proposed By</th>
<th>Area (sq miles)</th>
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</thead>
<tbody>
<tr>
<td>San Nicolas Island Pending Military Closure</td>
<td>LA, LB, OA, TB, Ext B</td>
<td>25.2</td>
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<tr>
<td>State waters around Begg Rock</td>
<td>LB, OB, Ext C</td>
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<tr>
<td>Begg Rock SMR</td>
<td>TA</td>
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<tr>
<td>San Clemente Pending Military Closure 1 (Area G, SWAT I)</td>
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<tr>
<td>Wilson SMR</td>
<td>OB</td>
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<td>China Point SMR</td>
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<td>23.3</td>
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<td>China Point SMR</td>
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<td>San Nicolas SMR</td>
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<td>West San Nicolas SMR</td>
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<td>North End SMR</td>
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<td>Pyramid Head SMR</td>
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<td>Pyramid Head SMR</td>
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<td>Castle Rock SMR</td>
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<td>West San Clemente SMR</td>
<td>TA</td>
<td>12.3</td>
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Habitats at San Clemente Island

East Channel Islands Bioregion

Percentage of habitat available on San Clemente Island

- Rocky Shores
- Rock 0 - 30m
- Rock 100 - 200m
- Average kelp
- Persistent kelp
- Beaches
- Soft 0 - 30m
- Soft 100 - 200m
- Soft 200 - 3000m
- Depth 30 - 100m
- Depth 100 - 200m
- Depth 200 - 3000m
East Channel Islands Bioregion

Draft MPA Arrays and Draft External MPA Proposals

*LA = Lapis A
*OA = Opal A
*TB = Topaz B
*XB = External B
LB = Lapis B
OB = Opal B
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*Includes pending military closures
Evaluation of MPAs at San Clemente

East Channel Islands Bioregion

- Proposed Military Closures
- MPAs proposed by the RSG on San Clemente Island

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Graphs:
- b) Hard 0 - 30m
- f) Soft 0 - 30m
Evaluation of MPAs at San Clemente

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**Evaluation of MPAs at San Clemente**

**East Channel Islands Bioregion**

| Proposed Military Closures | MPAs proposed by the RSG on San Clemente Island |

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**Graphs**

- **d)** Depth 100 - 200m
- **h)** Depth 200 - 3000m
MPA Evaluation: San Nicolas and Begg Rock

West Channel Islands Bioregion

| Proposed Military Closures | MPAs proposed by the RSG on San Nicolas Island |

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West Channel Islands Bioregion

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### Habitat Replication by Bioregion

<table>
<thead>
<tr>
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<th>West Channel Islands Bioregion</th>
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<tr>
<td></td>
<td>Northern Channel Islands MPAs</td>
<td>San Nicolas Island Pending Military Closure</td>
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<tr>
<td>Beaches</td>
<td>2</td>
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<tr>
<td>Rocky Shores</td>
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<td>Surfggrass</td>
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<tr>
<td>Kelp (linear)</td>
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<tr>
<td>Hard 0 - 30m proxy</td>
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<tr>
<td>Hard 30 - 100m</td>
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<tr>
<td>Hard 100 - 3000m</td>
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</tr>
<tr>
<td>Soft 0 - 30m proxy</td>
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<td>Depth zone 100 - 200m</td>
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<tr>
<td>Depth zone 200 - 3000m</td>
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<tr>
<td>Tidal Flats</td>
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</tbody>
</table>
• Located in West Channel Islands Bioregion

• Includes:
  – Some kelp (*Macrocystis pyrifera*)
  – Low relief habitats
  – Abundant purple urchins
  – One subtidal monitoring site and one biodiversity monitoring site

• Does not include:
  – Large persistent kelp beds (to the northwest)
  – Resident breeding southern sea otter (*Enhydra lutris nereis*) population (to the northwest)
San Clemente Island Pending Military Closure

• Located in East Channel Islands Bioregion

• Includes:
  – Castle Rock and 9-Fathom Bank
  – Submerged rocky pinnacles
  – Abundant giant kelp (*Macrocystis pyrifera*), deeper than other areas due to water clarity
  – Large populations of purple coral (*Stylaster*)
  – Rare rock morph of elk kelp (*Pelagophycus porra*)

• Does not include:
  – Moon (or Seal) Rock (to the east), which supports a marine mammal haulout and seabird colony
  – Sandy beach habitat at West Cove (to the south)
  – Open coast habitat along west side of San Clemente
• Located in East Channel Islands Bioregion
• Includes:
  – Narrow rocky shore with intermittent surfgrass beds and a few patches of eelgrass
  – Narrow band of kelp parallel to the shoreline
  – Seafloor drops rapidly to deeper sand
• Does not include:
  – Extensive eelgrass beds between White Rock and Purse Seine Rock (to the south)
  – Deep water corals (*Stylaster*), which are abundant on the west side of San Clemente and Santa Catalina islands