

Marine Life Protection Act Initiative



Draft Evaluation of Ecological Contributions of Pending Military Closures

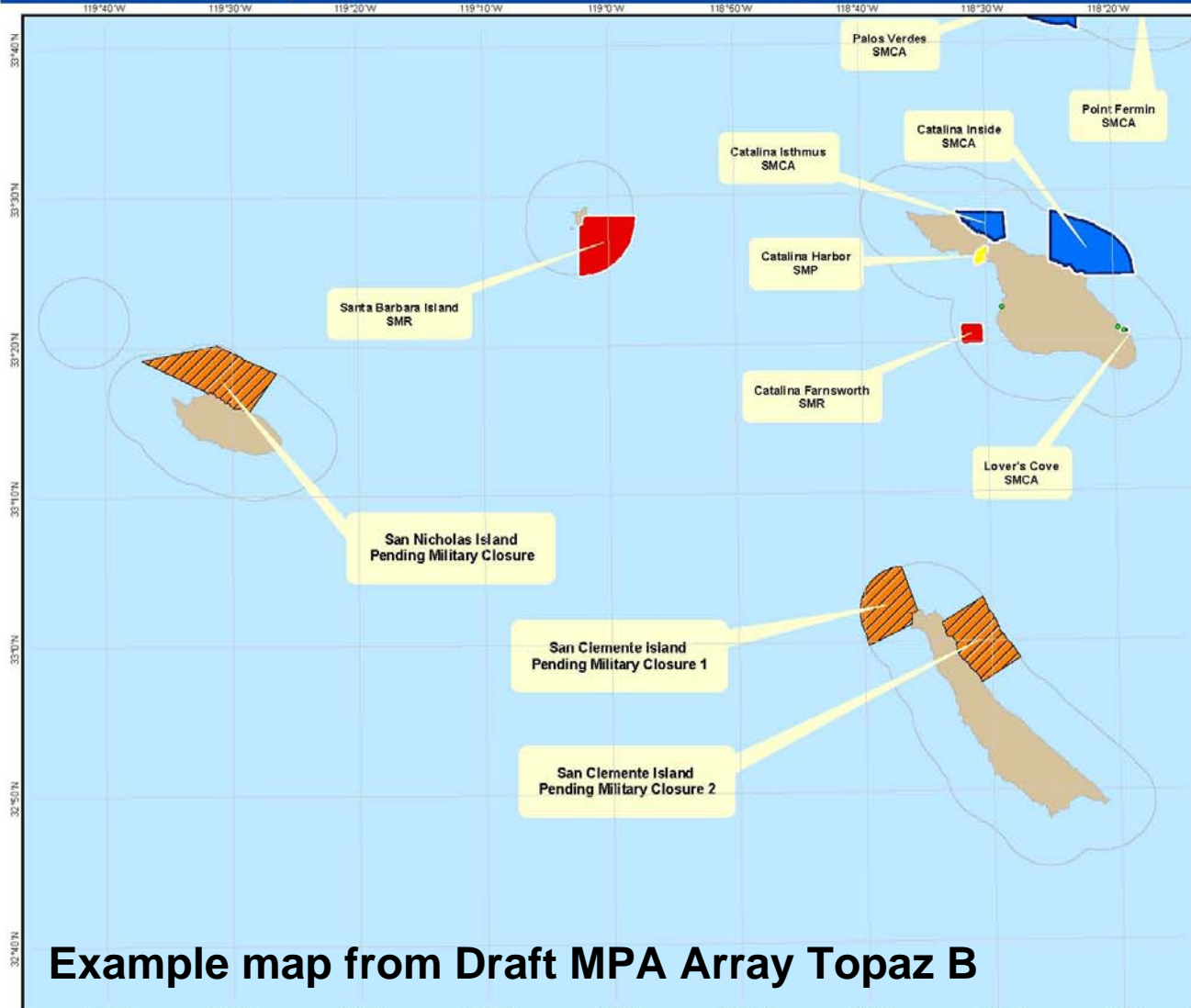
**DRAFT Presentation for the MLPA Blue Ribbon Task Force
Presented to the MLPA Master Plan Science Advisory Team
May 15, 2009 • Conference Call**

Dr. Satie Airamé, MLPA Initiative

Pending Military Closures

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

**Pending military
closures are
included in:**

- Lapis A
- Opal A
- Topaz B
- External B

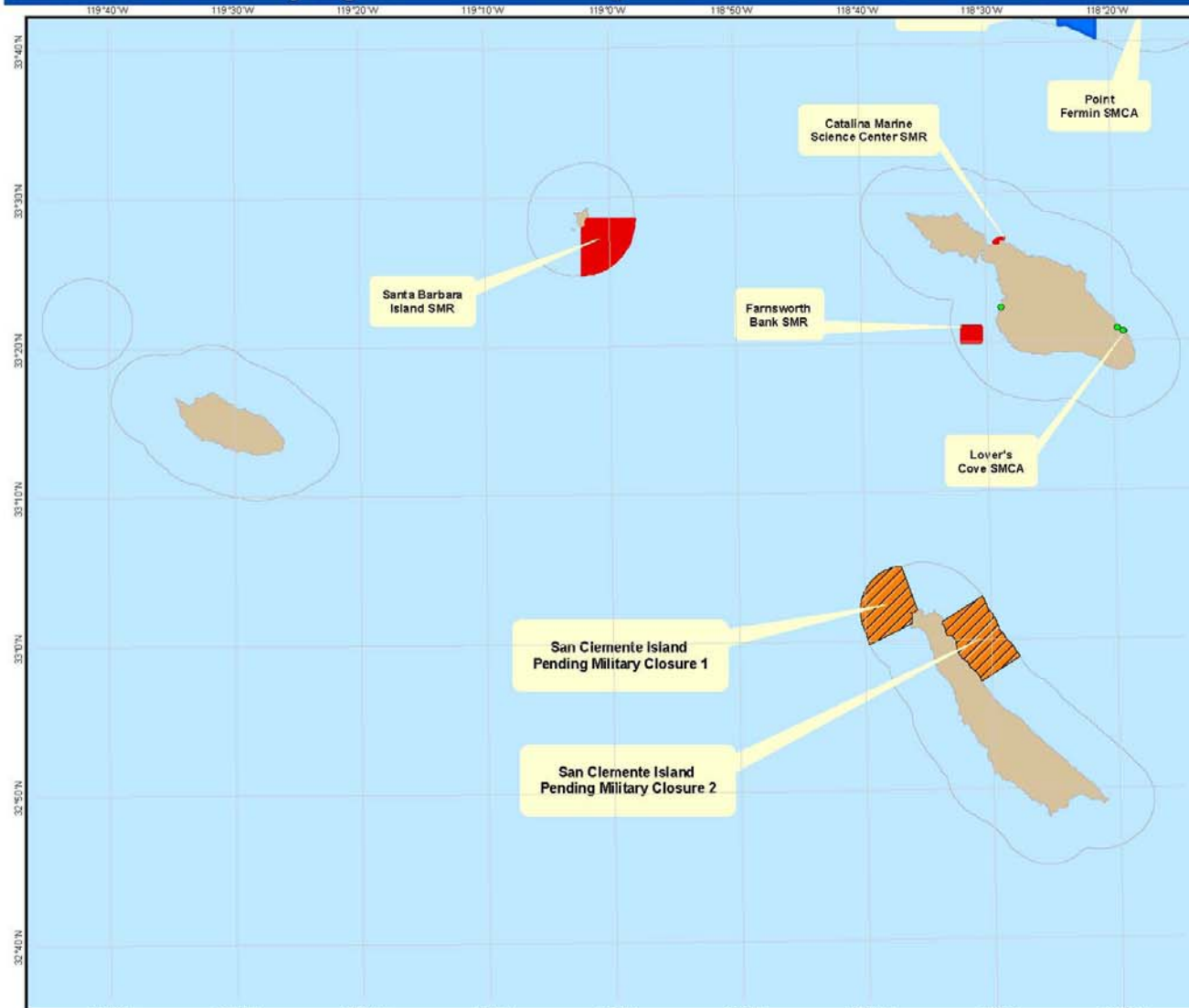
This map represents a draft marine protected area (MPA) array generated by a cross-interest work group within the MLPA South Coast Regional Stakeholder Group. This draft MPA array is under review; it is NOT a recommendation to the California Fish and Game Commission.

Example map from Draft MPA Array Topaz B

Draft External MPA Proposal A

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Subregion 7 - Santa Catalina and Santa Barbara Islands



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California Marine Life
Protection Act (MLPA) Initiative

Round 1
Draft External Proposal A

Legend

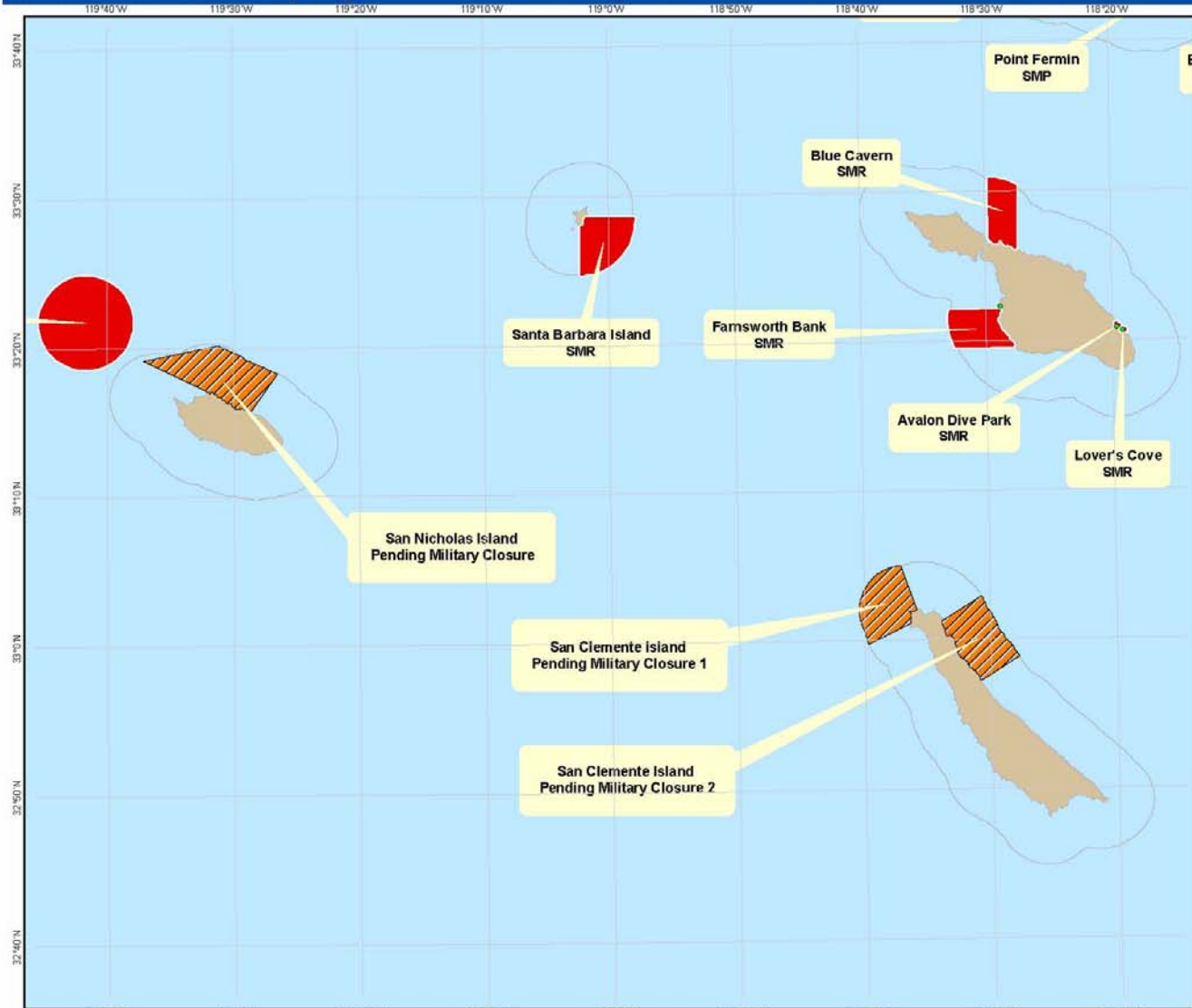
- Proposed State Marine Conservation Area (SMCA)
- Proposed State Marine Park (SMP)
- Proposed State Marine Reserve (SMR = No Take)
- Pending Military Closures
- South Coast Study Region Boundary
- Coastal Access

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Draft MPA Array Lapis B

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California Marine Life
 Protection Act (MLPA) Initiative

Round 1
 Lapis B Draft MPA Array

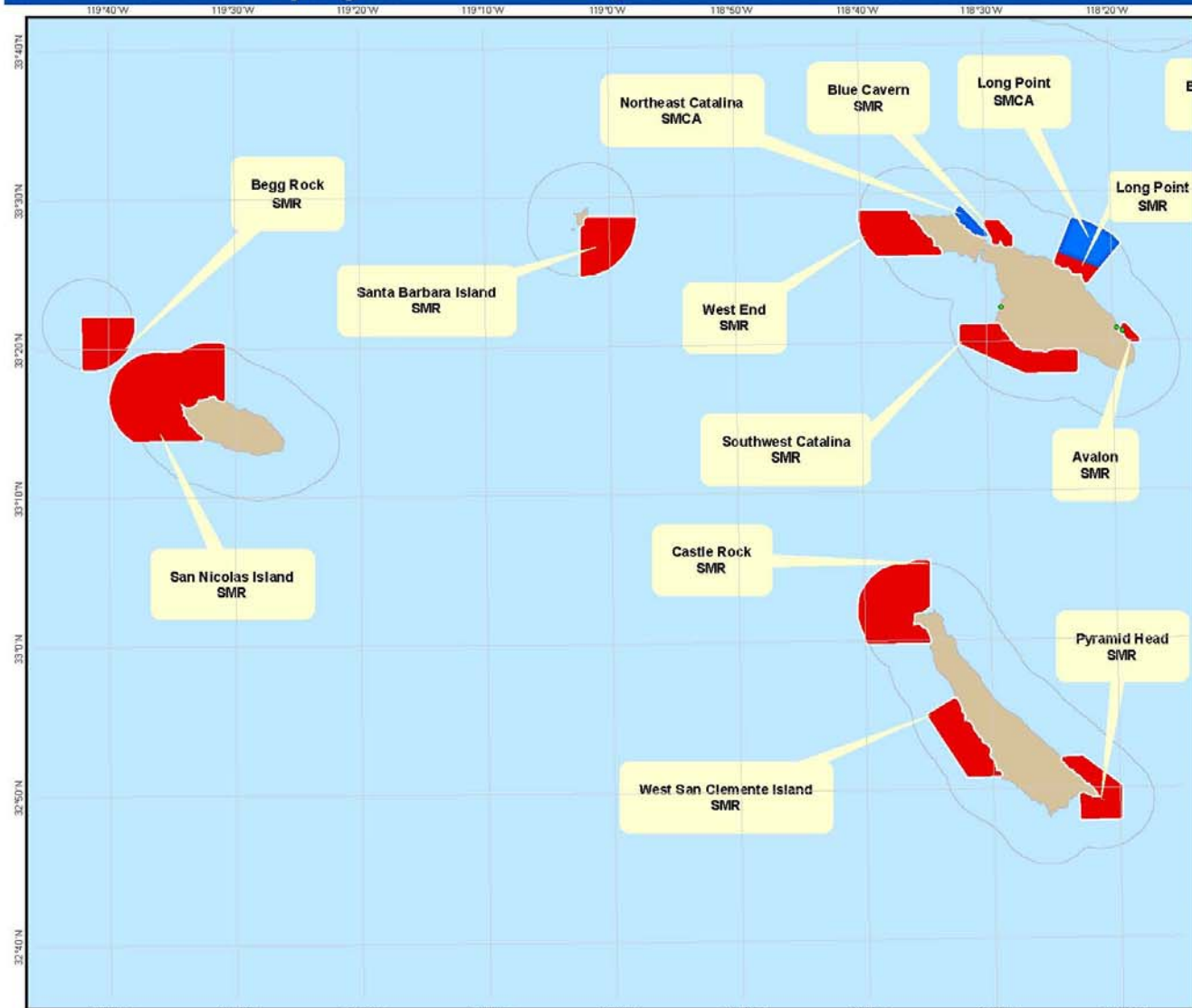
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Draft MPA Array Topaz A

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California Marine Life
Protection Act (MLPA) Initiative

Round 1
Topaz A Draft MPA Array

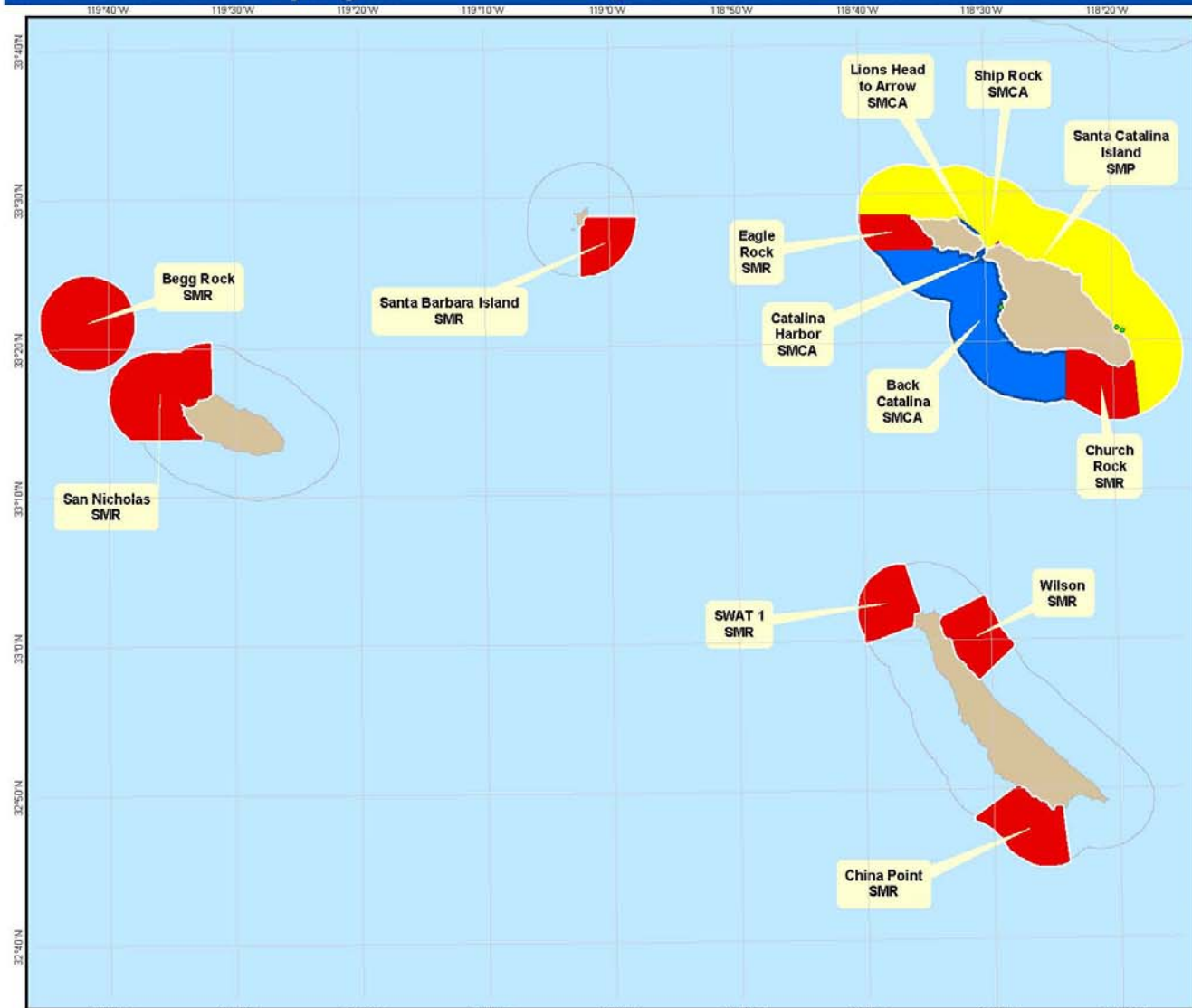
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Draft MPA Array Opal B

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California Marine Life Protection Act (MLPA) Initiative

Round 1
Opal B Draft MPA Array

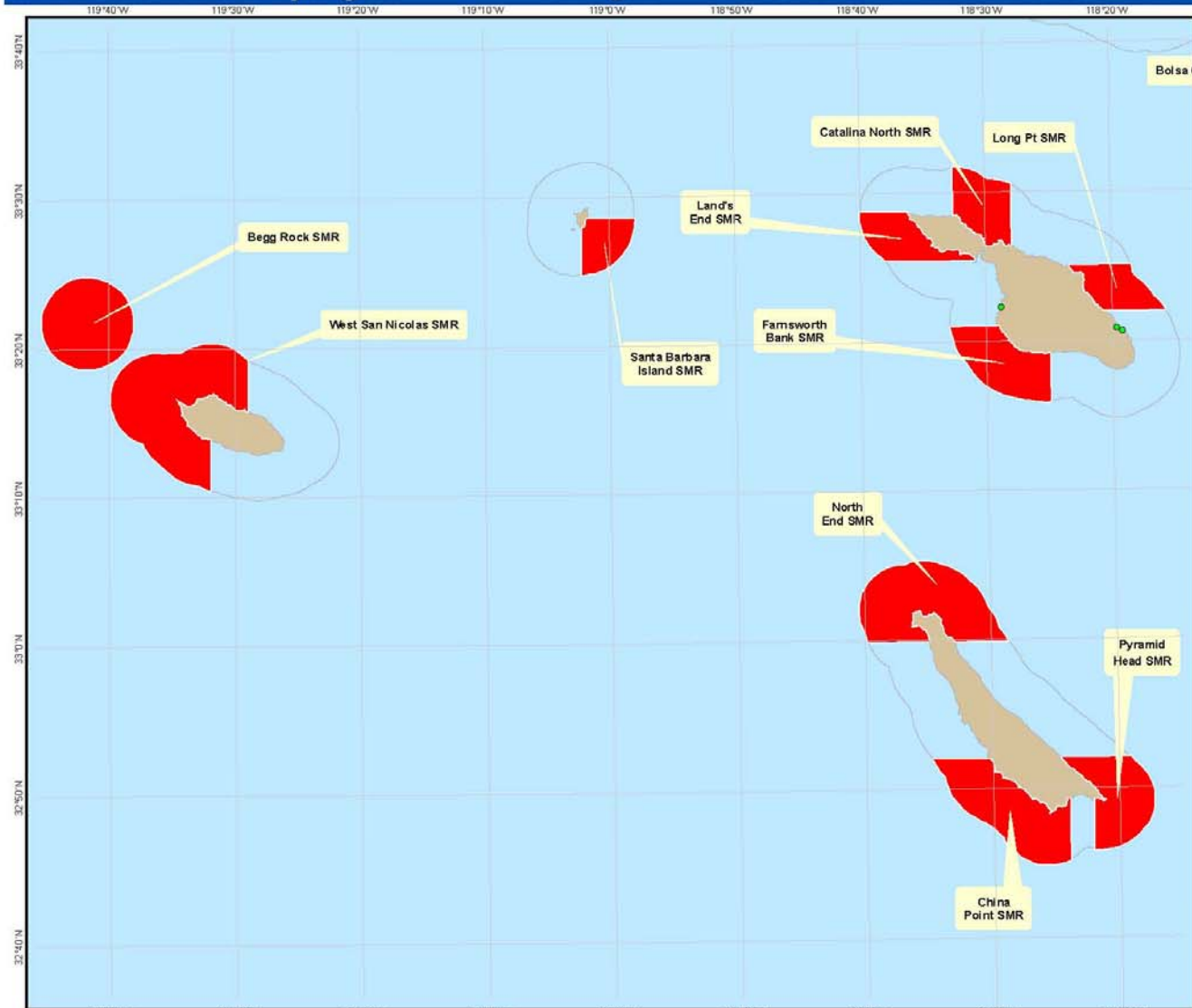
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Draft External MPA Proposal C

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California Marine Life Protection Act (MLPA) Initiative

Round 1

Draft External Proposal C

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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 sorenseni*)**



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

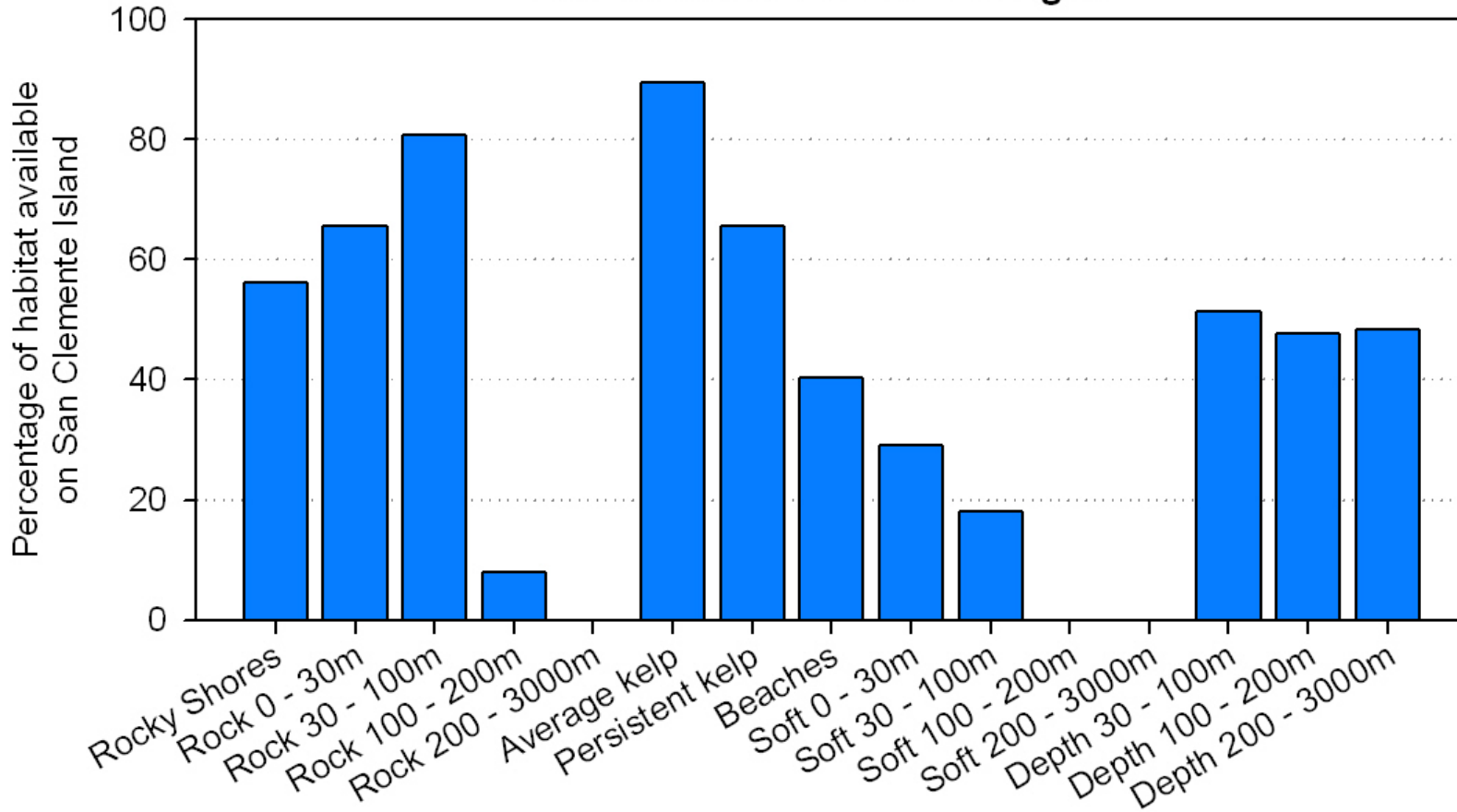
Size Evaluation Results

MPA/Closure Name	Proposed By	Area (sq miles)
San Nicolas Island Pending Military Closure	LA, LB, OA, TB, Ext B	25.2
State waters around Begg Rock	LB, OB, Ext C	38.0
Begg Rock SMR	TA	11.5
San Clemente Pending Military Closure 1 (Area G, SWAT I)	LA, LB, OA, TB, Ext A, Ext B	17.4
San Clemente Pending Military Closure 2 (Wilson Cove)	LA, LB, OA, TB, Ext A, Ext B	19.2
Wilson SMR	OB	17.1
China Point SMR	OB	23.3
China Point SMR	Ext C	41.7
San Nicolas SMR	OB, TA	40.1
West San Nicolas SMR	Ext C	66.2
North End SMR	Ext C	47.7
Pyramid Head SMR	TA	9.1
Pyramid Head SMR	Ext C	28.8
Castle Rock SMR	TA	25.6
West San Clemente SMR	TA	12.3

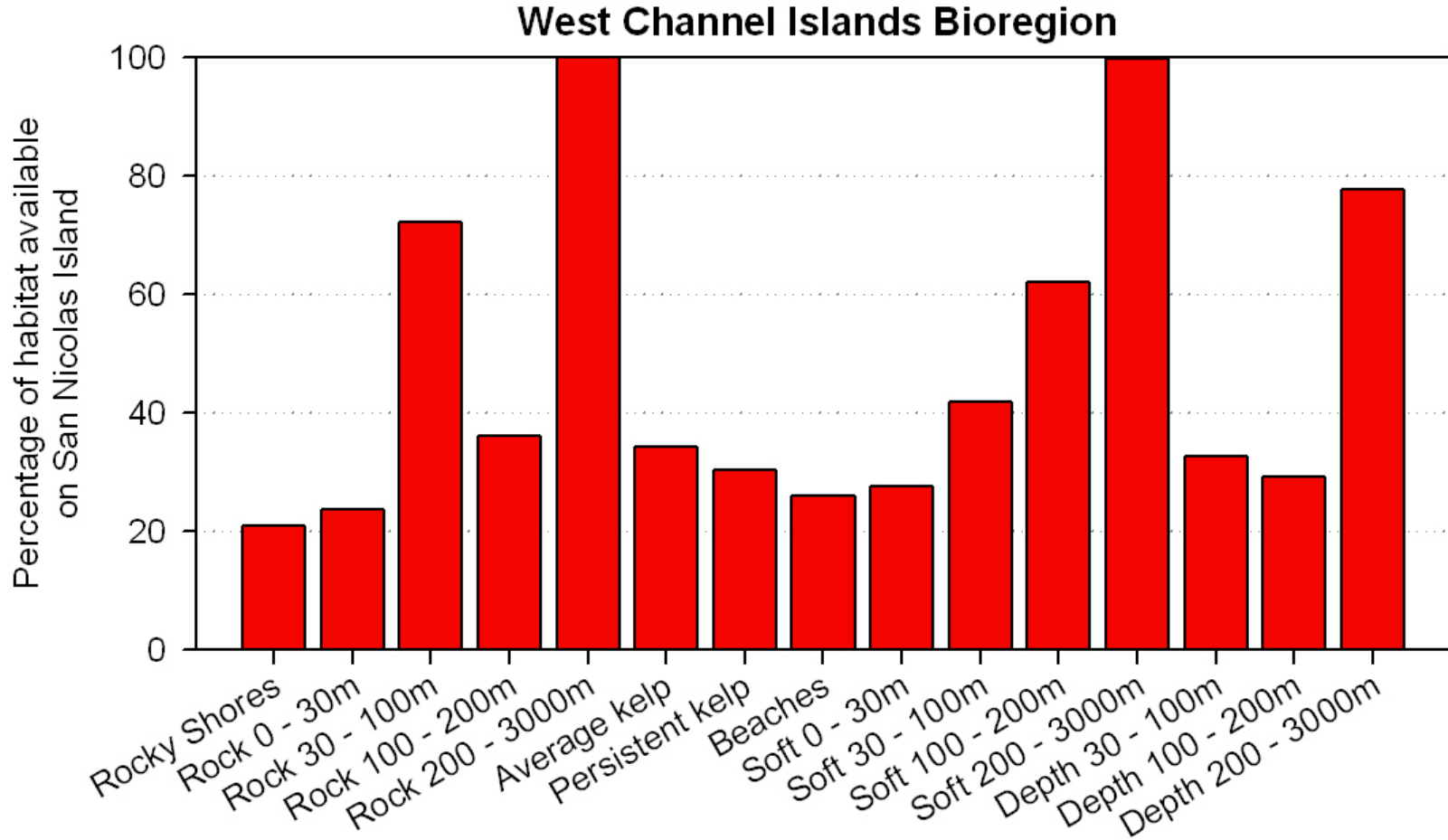
Habitats at San Clemente Island



East Channel Islands Bioregion

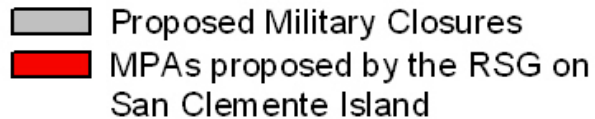


Habitats at San Nicolas Island and Begg Rock



Evaluation of MPAs at San Clemente

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

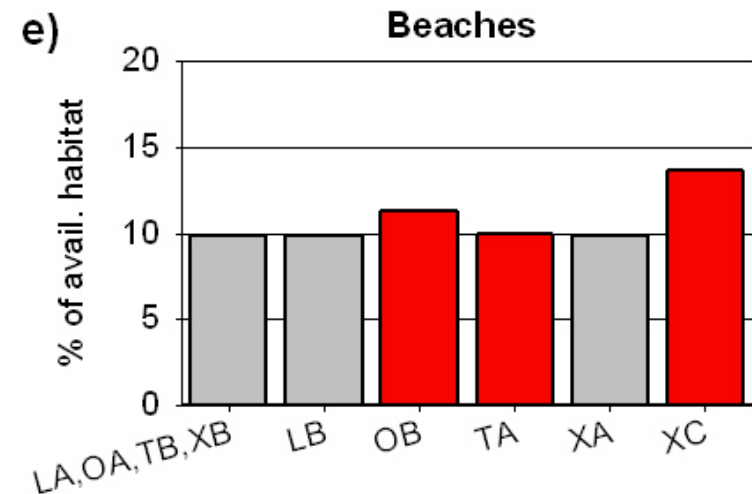
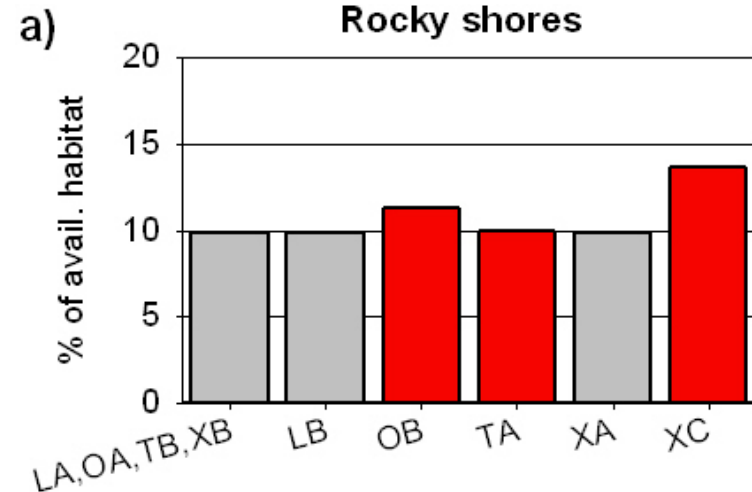
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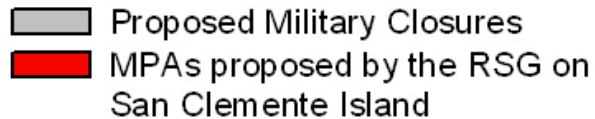
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*Includes pending military closures



Evaluation of MPAs at San Clemente

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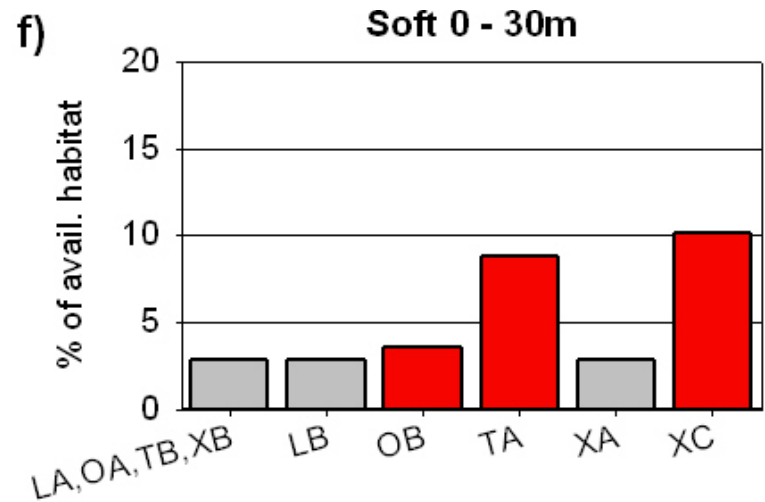
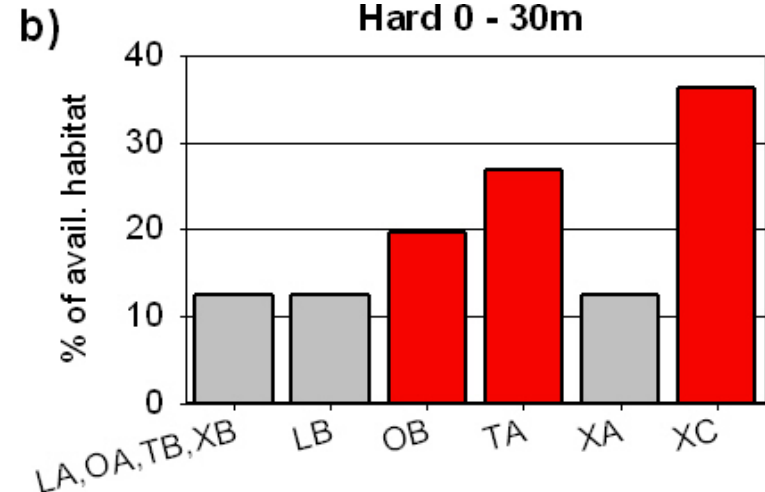
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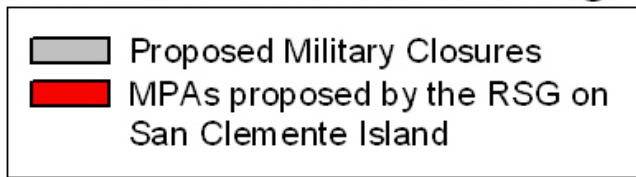
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Evaluation of MPAs at San Clemente



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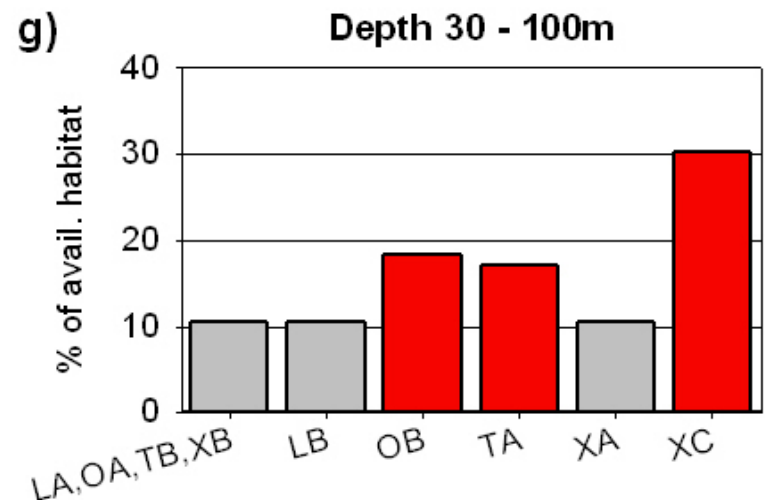
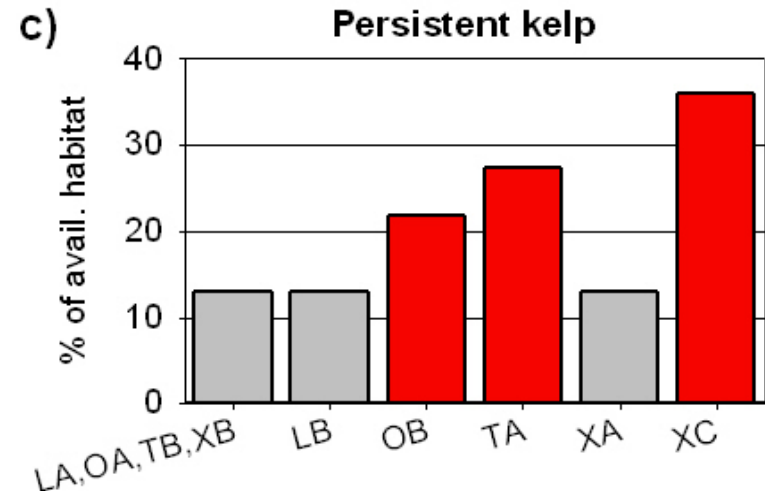
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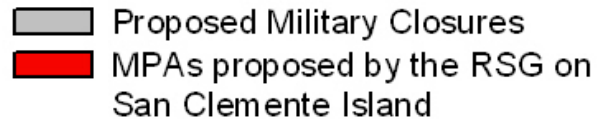
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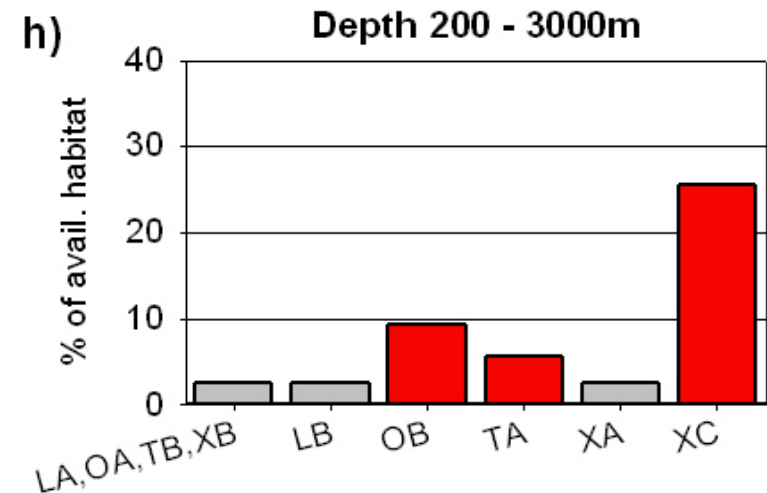
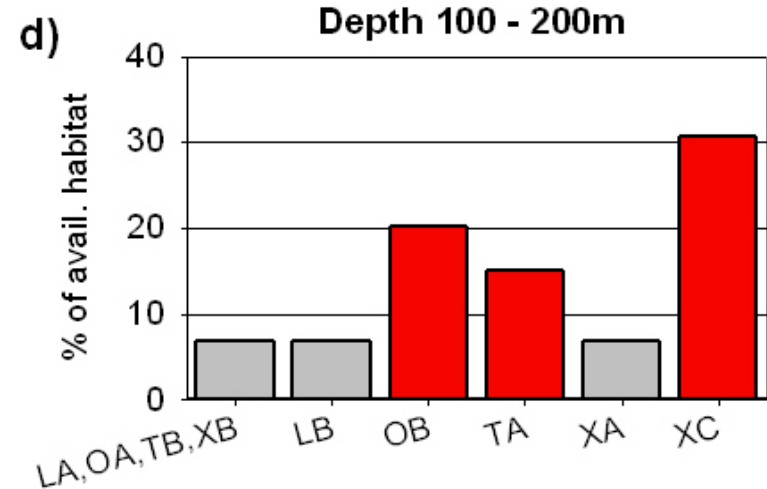
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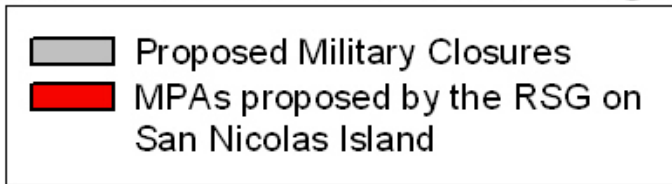
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MPA Evaluation: San Nicolas and Begg Rock

West Channel Islands Bioregion



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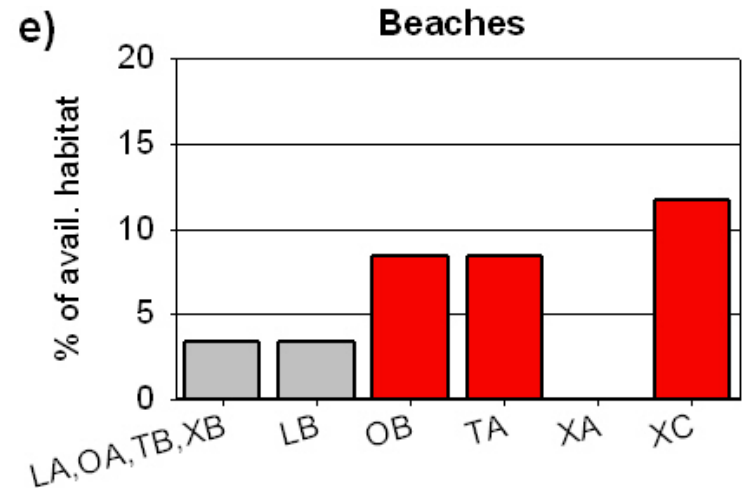
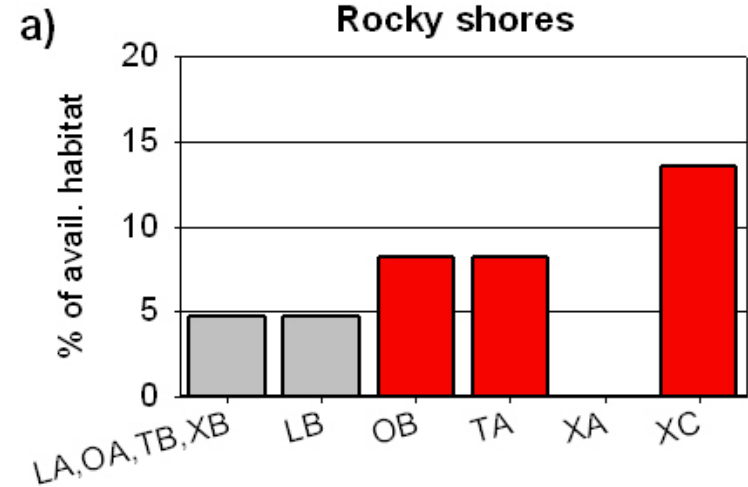
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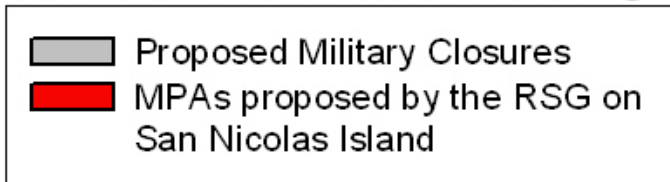
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MPA Evaluation: San Nicolas and Begg Rock

West Channel Islands Bioregion



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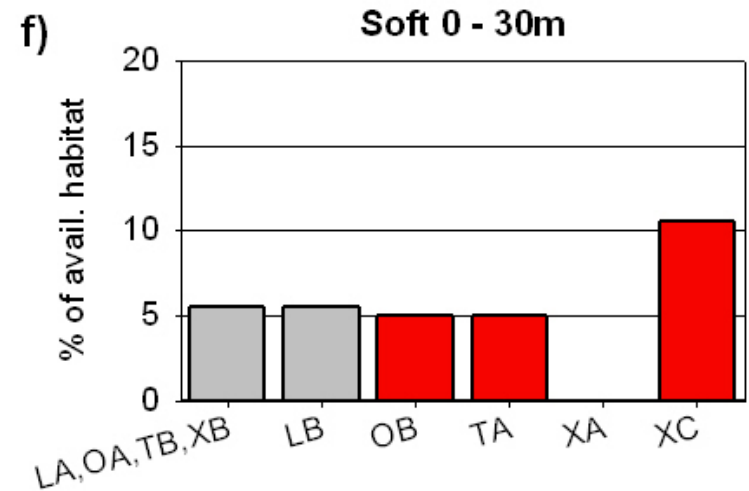
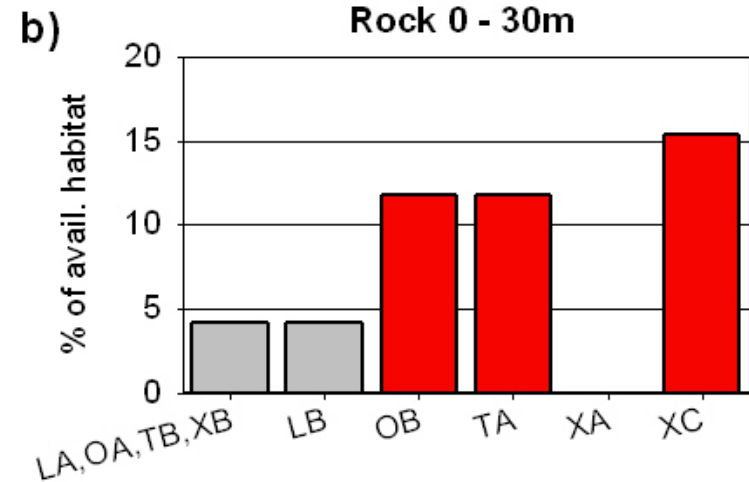
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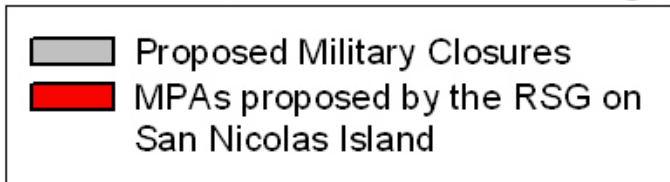
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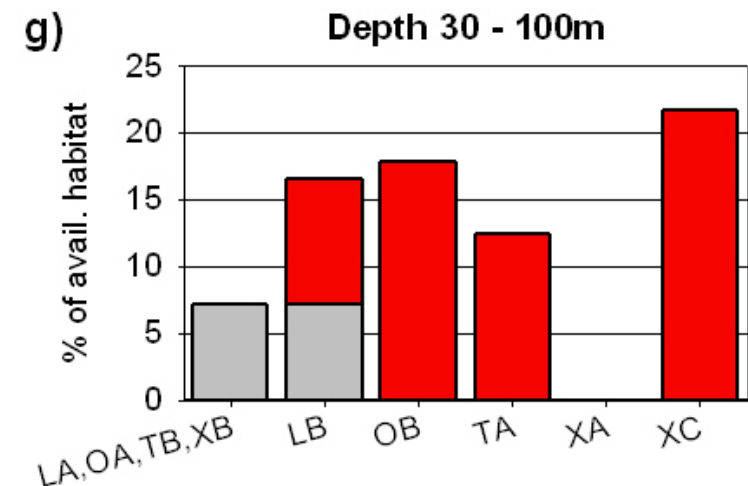
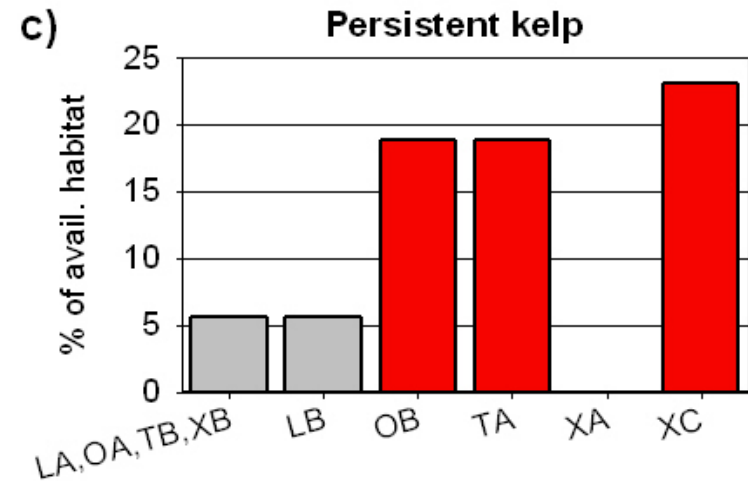
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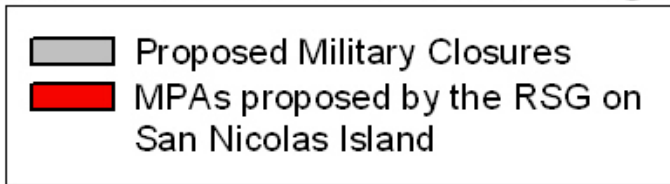
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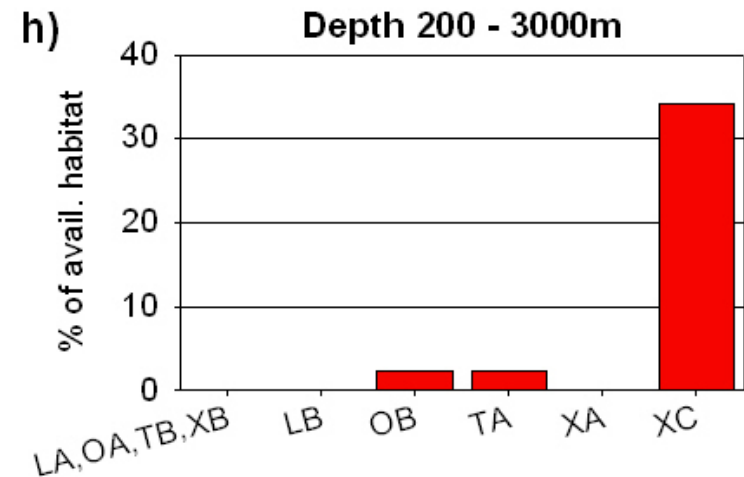
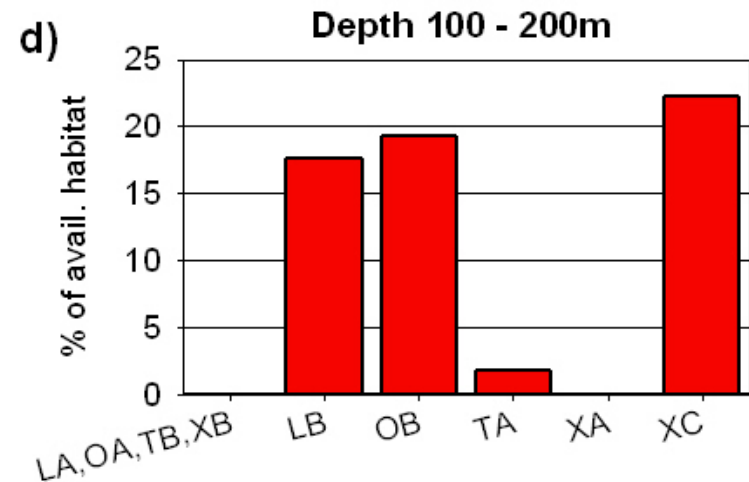
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Habitat Replication by Bioregion

	West Channel Islands Bioregion			East Channel Islands Bioregion	
	Northern Channel Islands MPAs	San Nicolas Island Pending Military Closure	State Waters around Begg Rock	San Clemente Island Pending Military Closure 1 (SWAT I)	San Clemente Island Pending Military Closure 2 (Wilson Cove)
Beaches	2	1	0	0	1
Rocky Shores	3	1	0	1	1
Surfgrass	3	0	0	0	0
Kelp (linear)	3	1	0	1	1
Hard 0 - 30m proxy	3	1	0	1	1
Hard 30 - 100m	3	1	1	1	0
Hard 100 - 3000m	1	0	0	0	0
Soft 0 - 30m proxy	3	1	0	0	1
Soft 30 - 100m	3	1	1	0	0
Soft 100 - 200m	2	0	1	0	0
Soft 200 - 3000m	0	0	0	0	0
Soft 0 - 3000m	3	1	1	1	1
Depth zone 30 - 100m	4	1	1	1	0
Depth zone 100 - 200m	3	0	1	1	1
Depth zone 200 - 3000m	1	0	0	1	1
Estuary	0	0	0	0	0
Coastal Marsh (area)	0	0	0	0	0
Eelgrass	0	0	0	0	0
Tidal Flats	0	0	0	0	0



San Nicolas Island Pending Military Closure

- 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 1

- 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



San Clemente Island Pending Military Closure 2

- 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