Marine Birds and Mammals Evaluation for the North Central Coast Regional Stakeholder Group Marine Protected Area Proposals

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Benefits of MPAs

MLPA Goals

1.) ***To protect the natural diversity and abundance of marine life, and the structure, function, and integrity of marine ecosystems.***

2.) ***To help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted.***

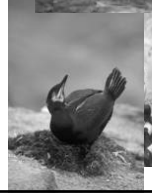
3.) ***To improve recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbances, and to manage these uses in a manner consistent with protecting biodiversity.***

Benefits of MPAs

- **Marine birds and mammals require undisturbed coastal habitats for breeding, resting, feeding**
- **MPAs likely will lead to reduced vessel activity and disturbance to colonies, roosts, haul-outs**
- **Increase forage for upper level predators**
- **Reduce bycatch in some fisheries (current and future)**
- **In some cases, special closures may be helpful to reduce disturbance**

Methods – Breeding Colonies

- **Abundance, diversity, and % of subregional populations within SMRs and some SMCAs:**
  - **Pinnipeds**
    - **Elephant seals**
    - **Harbor seals**
    - **Steller sea lions**
    - **Northern fur seals**
  - **Seabirds**
    - **Brandt's Cormorant**
    - **Pelagic Cormorant**
    - **Double-crested Cormorant**
    - **Common Murre**
    - **Pigeon Guillemot**
    - **All Species**



Methods – Pinniped Haul Outs

- **Identify number of pinnipeds at haul outs included in MPAs in proposals**
  - Species diversity
  - Size of haul out sites for 4 pinniped species
  - % of subregional numbers

Methods – Seabird Roosts

- **Broad-scale data available only for major roosts of Brown Pelican**
- **Roost categories: >100, >500, >1000 birds**
- **Identified numbers of major roosts included in MPAs in proposals**

Methods – Foraging Areas

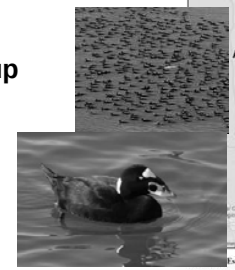
Species most likely to benefit have limited foraging ranges and feed on prey that are most likely to benefit

- Brandt's Cormorant
- Pelagic Cormorant
- Pigeon Guillemot
- Harbor seal

- **Buffered colonies 3 mi alongshore and 1 mi offshore**
- **Overlaid colony foraging ranges and proposed MPAs**
- **Calculated weighted value of foraging area captured**

Methods – Winter Waterfowl

- **Coastal estuaries: wintering waterfowl**
- **Evaluated four species and all species (% of regional pop.) :**
  - **Brant**
  - **Greater Scaup**
  - **Surf Scoter**
  - **Bufflehead**



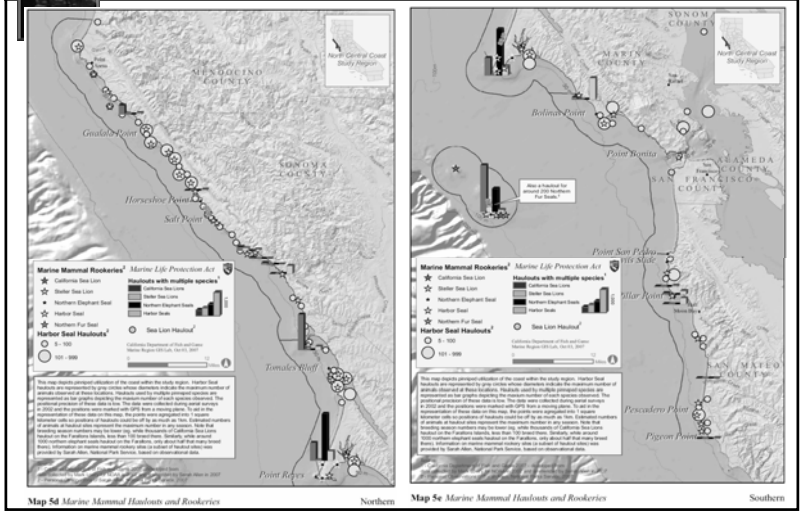
Evaluation Results: Marine Mammals

In North Central Coast:

5 Species of pinnipeds

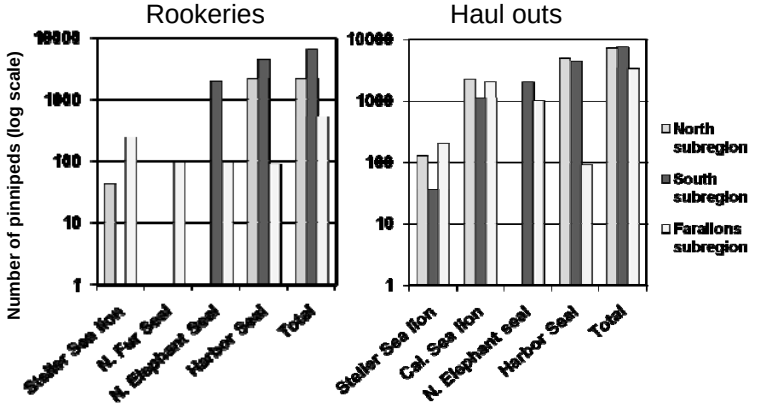
- **31 Colonies**
- **76 Haul out sites**
- ➢ **9,300 breeding**
- ➢ **17,900 resting/molting**

Marine Mammal Haul Outs and Rookeries



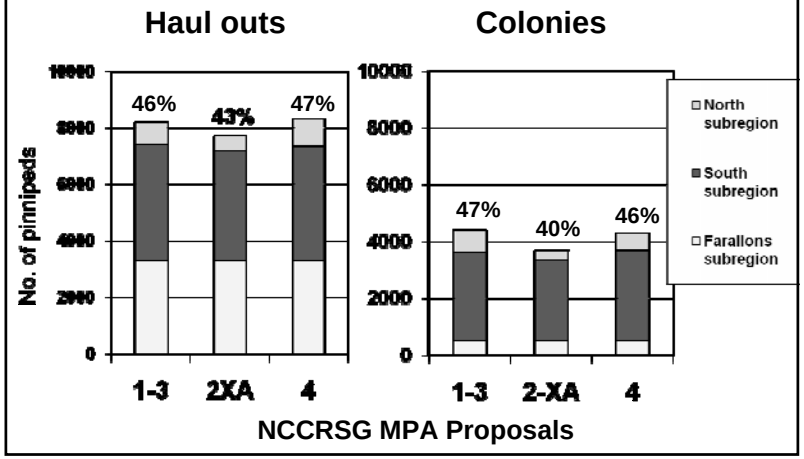
Mammals in Rookeries and Haul Outs by Subregion

4 species of pinnipeds breed and/or haul out in study region, but vary by subregion

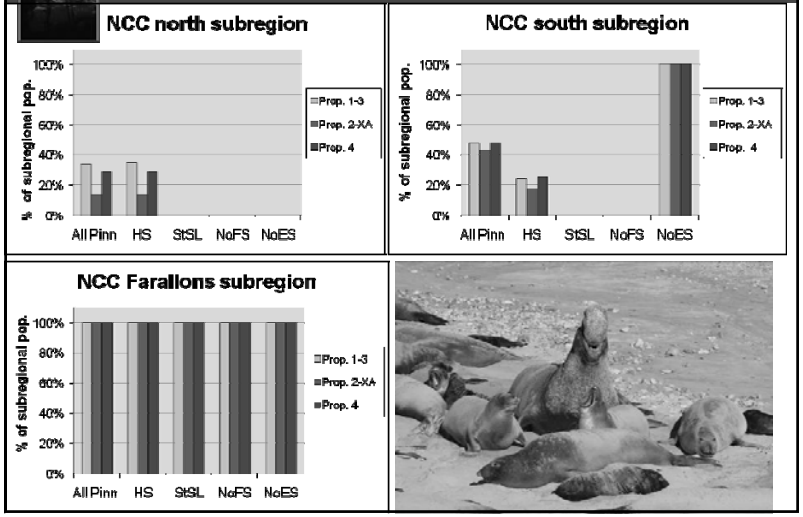


No. of Mammals at Haul Outs and Rookeries

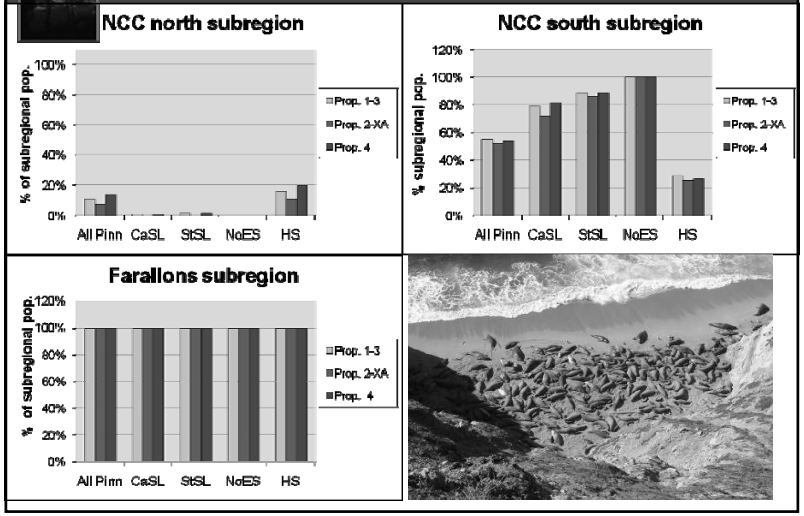
% = % of mammals in study region included within MPA proposals



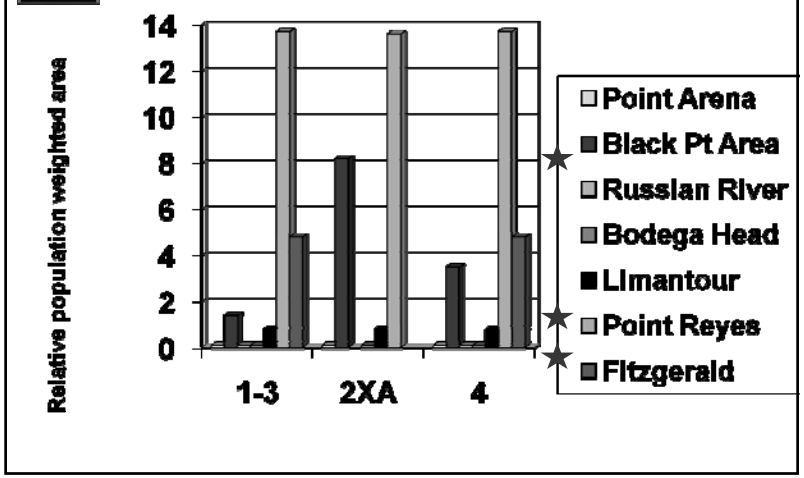
Breeding Pinnipeds in Proposed MPAs



Pinnipeds in Haul Outs in Proposed MPAs



Foraging Area for Harbor Seals



Marine Mammals in Special Closures

Special Closure	Proposal 1-3	Proposal 2-XA	Proposal 4
North subregion			
South subregion			
Point Reyes Rookery	1000 ft 4 species		1000 ft 4 species
Stormy Stack	300 ft 1 species	300 ft 1 species	300 ft 1 species
Pescadero	300 ft 1 species		
Farallon Is subregion			
North Farallon Island Rookery	300 & 1000 ft 2 species	300 ft 2 species	300 & 1000 ft 2 species
South Farallon Island Rookery	300 ft 5 species	300 ft 5 species	300 ft 5 species

Summary for Marine Mammals

Areas of similarity amongst the proposals

- North & South Farallon Islands for breeding and haul out sites
- Point Reyes Headland SMR for breeding and haul out sites
- Limantour Estero SMR for breeding and haul out sites
- All covered 43-48% of rookeries in south region

Areas of difference

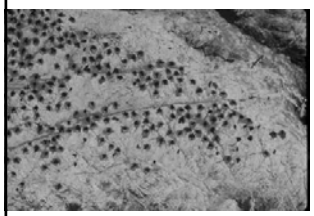
Proposal 2-XA included 14% of rookeries in north region versus 34% - 29% for proposals 1-3 and 4

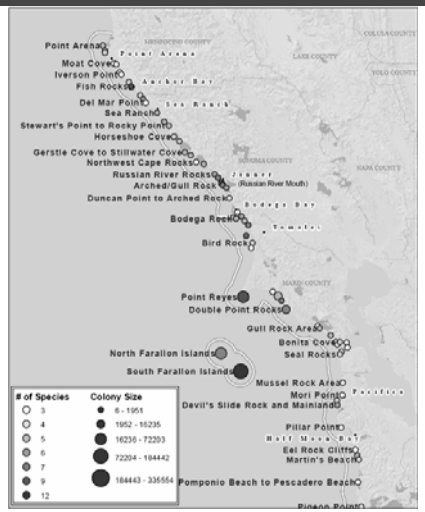
Other observations

- No proposals included the Steller sea lion rookery at Fort Ross
- Special closures only benefited Farallon Islands & Point Reyes
- Half of marine mammal hot spots fall within SMRs or SMCAs
- Harbor seal foraging area only significant for Point Reyes and Fitzgerald for all proposals

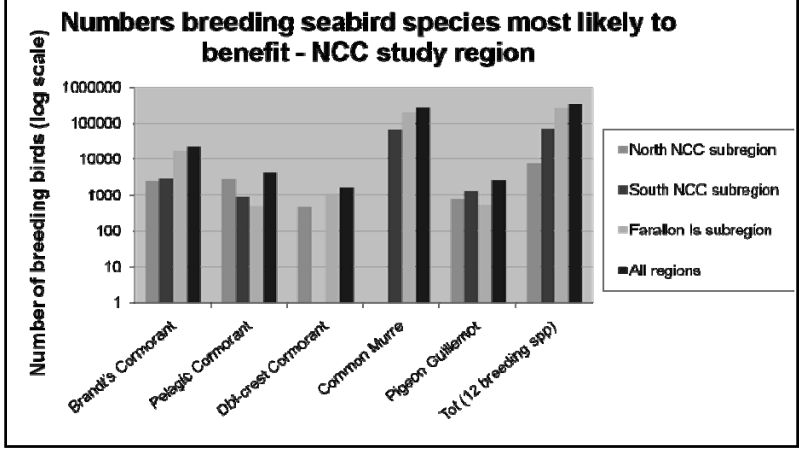
All Seabird Colonies in NCCSR

- **66 colonies**
- **12 species**
- **> 335,000 birds**

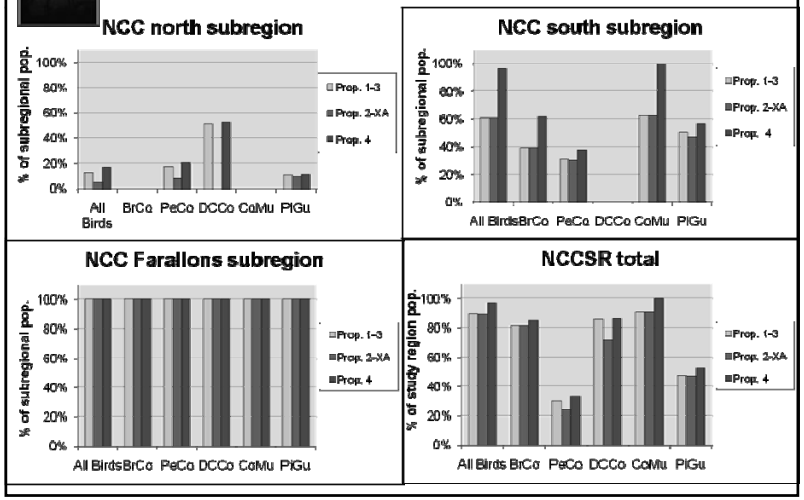




No. Breeding Seabirds NCC Study Region



Breeding Seabirds in Proposed MPAs

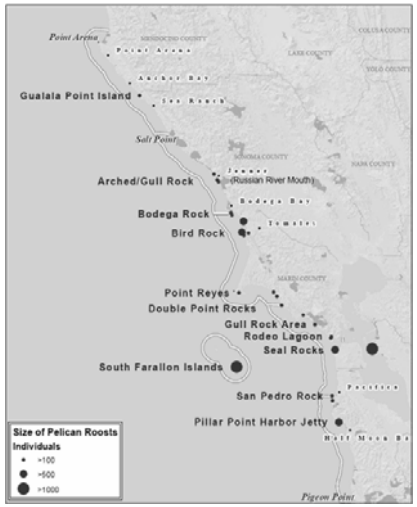


Major Brown Pelican Roosts

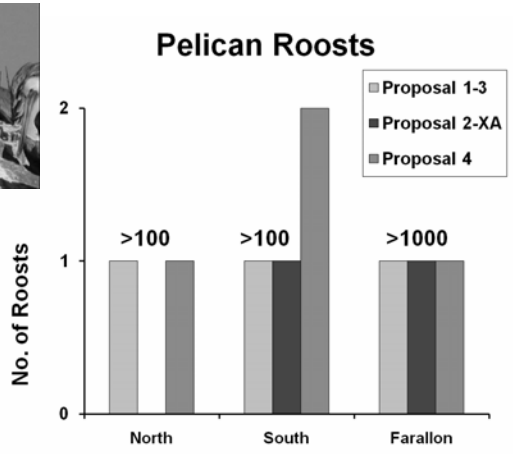
23 roosts

Pelican hot spots

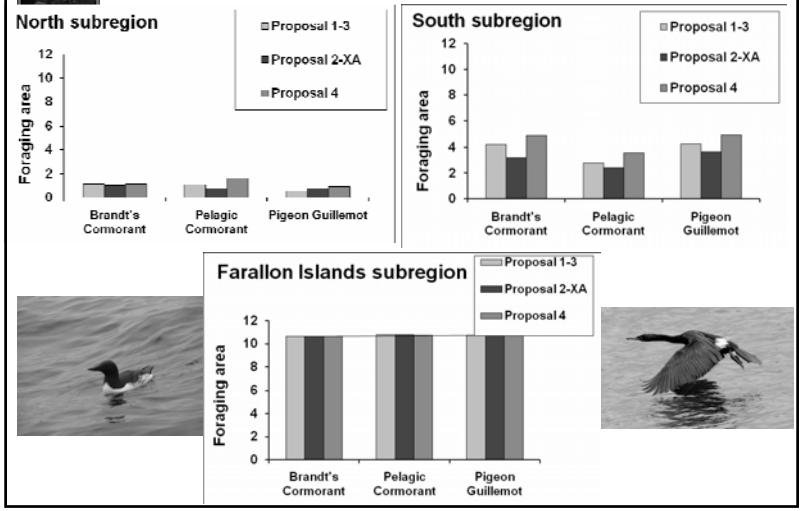
- South Farallon Islands
- Devil's Slide / San Pedro Rock
- Seal Rocks
- "Drakes Bay" area
- Point Reyes
- Bird Rock (off Tomales Point)
- Dillon Beach Rocks
- Bodega Rock / harbor
- Russian River area
- Gualala Point Island



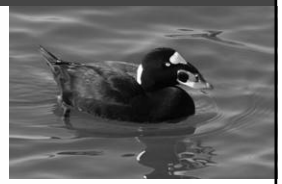
Major Brown Pelican Roosts by Subregion

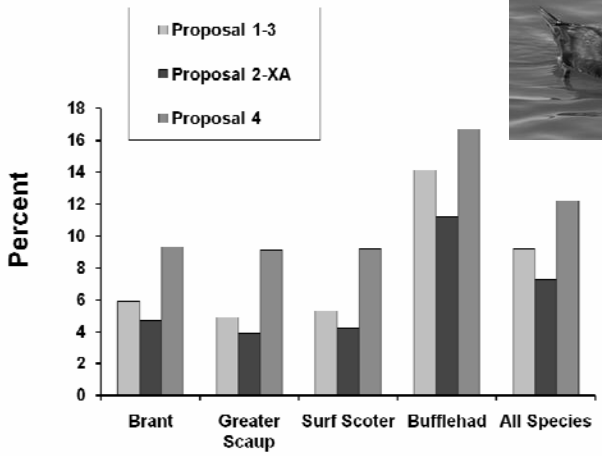


Seabird Foraging Areas in NCC Study Region



Wintering Waterfowl in NCC Study Region



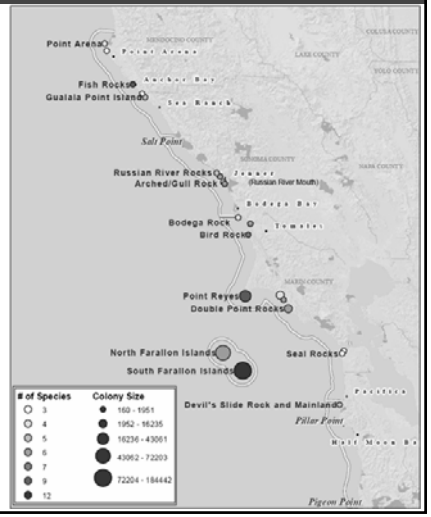


Top 20 Seabird Colonies in NCCSR

- **99% of regional population**

Hot spots:

- **Farallon Islands**
- **Devil's Slide**
- **Point Reyes**
- **"Drakes Bay" colonies**
- **Bird Rock (off Tomales Point)**
- **Bodega Rock**
- **Russian River area**
- **Gualala Point Island**
- **Fish Rocks**



Proposed Special Closures

Site Name	1-3	2-XA	4
Arched Rock			300'
Gull Rock			300'
Point Reyes	1000' (part)		1000' (part)
Point Resistance	500'	300'	
Stormy Stack (Double Point)	300'	300'	300'
Devil's Slide Rock	1000'	300'	1000'
Pescadero	300'		
North Farallon Islands	1000' (part) 300' (part)	300'	1000' (part) 300' (part)
South Farallon Islands	300' (part)	300' (part)	300' (part)

= Little benefit to seabirds.

Summary for Marine Birds

- **Breeding colonies**
  - North subregion: Relatively little coverage (4 > 1-3 > 2-XA).
  - South subregion: Greater coverage (4 > 1-3 > 2-XA).
  - Farallon Islands subregion: Greatest coverage (all =)
- **Seabird roosts:** Few roosts covered.
- **Seabird foraging areas:** Same as breeding colonies.
- **Waterfowl**
  -- (4 > 1-3 > 2-XA).
  -- Lack of coverage in Tomales Bay = largest concentrations
- **Special closures:** Largest colonies in NCCSR covered between all proposals. North subregion under-represented.