SEABIRDS AND MARINE MAMMALS OF THE NORTH/CENTRAL COAST AREA OF CALIFORNIA

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A Biogeographic Assessment off North/Central California
To Support the Joint Management Plan Review for Cordell Bank, Gulf of Farallones, and Monterey Bay National Marine Sanctuaries by providing a suite of analytical products (maps, reports, tables) that identifies, characterizes and prioritizes the biological resources of the study area off central California. These products were developed primarily for sanctuary and resource management staff and councils, but can also be used for research, education and outreach.


SEABIRDS

- 13 breeding species
- ~ 340,000 breeding birds
- ~ 50 migrant / wintering species

- Ashy Storm-Petrel
- Leach’s Storm-Petrel
- Double-crested Cormorant
- Brandt’s Cormorant
- Pelagic Cormorant
- Black Oystercatcher
- Western Gull
- Common Murre
- Pigeon Guillemot
- Marbled Murrelet
- Cassin’s Auklet
- Rhinoceros Auklet
- Tufted Puffin
- Loons
- Grebes
- Albatrosses, shearwaters, storm-petrels
- Brant, Scoters
- Phalaropes
- Gulls, terns
- Alcids
### Marine Mammals and Turtles

- 6 species of pinnipeds
- 33+ species of cetacean
- 2 fissiped (otters)
- 5 species of sea turtles

#### Dominant Mammals and Sea Turtles

##### Cetacean

<table>
<thead>
<tr>
<th>Species</th>
<th>Status</th>
<th>Foraging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gray whale</td>
<td>FD</td>
<td>Inshore</td>
</tr>
<tr>
<td>Humpback</td>
<td>FE</td>
<td>Off/inshore</td>
</tr>
<tr>
<td>Blue</td>
<td>FE</td>
<td>Offshore</td>
</tr>
<tr>
<td>Harbor porpoise</td>
<td></td>
<td>Inshore</td>
</tr>
<tr>
<td>Dall’s porpoise</td>
<td></td>
<td>Offshore</td>
</tr>
<tr>
<td>Pacific white-sided dolphin</td>
<td></td>
<td>Offshore</td>
</tr>
</tbody>
</table>

##### Sea turtles

- Leatherback: FE Off/inshore

*FE – Federally endangered; FD – Federally delisted*

#### Dominant Mammals (cont’d.)

##### Pinnipeds

<table>
<thead>
<tr>
<th>Species</th>
<th>Status</th>
<th>Foraging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steller sea lion</td>
<td>FT</td>
<td>Offshore</td>
</tr>
<tr>
<td>California sea lion</td>
<td></td>
<td>Off/inshore</td>
</tr>
<tr>
<td>Northern fur seal</td>
<td>Depleted</td>
<td>Offshore</td>
</tr>
<tr>
<td>Northern elephant seal</td>
<td></td>
<td>Offshore</td>
</tr>
<tr>
<td>Harbor seal</td>
<td></td>
<td>Inshore</td>
</tr>
</tbody>
</table>

##### Fissiped

- Southern sea otter: FE Inshore

*FT – Federally threatened; FE – Federally endangered*
Seabirds and Marine Mammals

- Upper trophic level predators
- Feed on fish, squid, krill
  - Key in on abundant prey
- Major feeding, breeding areas similar
- Need undisturbed coastal habitats for breeding, resting, feeding

Primary Prey
- Northern anchovy
- Rockfish (esp. short-belly and yellowtail)
- Pacific Sardine
- Pacific Herring
- Pacific whiting
- Smelt
- Pacific Tomcod
- Sculpins
- Surfperch
- Market squid
- Krill

THREATS
- Human disturbance (esp. breeding, resting sites):
  - Boats
  - Shoreline recreation / harvest
  - Short-term (loss of young) and long-term effects (abandonment of site)
- Fisheries bycatch (e.g., gill-nets, long-lines, live-fish)
- Prey reductions / changes (human & non-human)
  - e.g., loss of young rockfish
Major Seabird Breeding Colonies:
- Farallon Islands
- Devil's Slide
- Point Reyes
- "Drakes Bay" area
- Bird Rock (Tomales Pt.)
- Bodega Rock
- Russian River area
- Gualala Point
- Fish Rocks

Major Pinniped Rookeries & Haul-out Sites
- Farallon Islands
- Point Reyes
- Bolinas Lagoon
- Drakes Bay sites
- Bird Rock (Tomales Pt.)
- Tomales Bay
- Bodega Rock
- Russian River area
- Fish Rocks

FARALLON ISLANDS
- Largest seabird colony in lower 48 states
- 12 nesting species
- ~300,000 breeding birds
- Largest colony in world for 3 species
- Major pinniped haul-out, breeding site
- 5 species
- Only breeding site in Northern California for Northern fur seal
- Threatened Steller Sea Lion
Point Reyes and Drakes Bay Area

Seabirds:
• 9 nesting species
• ~70,000 breeding birds

Marine mammals:
• Major pinniped haul-outs, breeding sites
• 4 species pinnipeds
• Threatened Steller Sea Lion haul-out
• Major point along gray whale route
WATERFOWL
- ~ 25 species
- Coastal estuaries important wintering habitats.
- 20,000 - 30,000 birds
- Bolinas Lagoon to Bodega Bay
- Food: Mollusks, worms, other inverts, small fish
- Brant - Eelgrass specialists (Tomales, Drakes, Bodega Bays)

--MUDDY” SHOREBIRDS
- ~ 20 species
- Coastal estuaries important migration / wintering habitats.
- Bolinas Lagoon to Bodega Bay
- Food: Bivalves, polychaete, worms, insect larvae, ghost shrimp, other inverts.
- Feed at low tide, rest at high tide
- Need undisturbed foraging and roosting areas

“ROCKY” SHOREBIRDS
- 5 species
  - Black Oystercatcher
  - Surfbird
  - Black Turnstone
  - Ruddy Turnstone
  - Wandering Tattler
- Feed on mollusks
- Feed at low tide, rest at high tide
- Important areas: Intertidal reefs (e.g., Fitzgerald, Duxbury)
- Need undisturbed areas to feed, roost
**Common Murre, *Uria aalge***

- Most abundant breeding species (ca. 300,000 breeding birds)
- Breed at small number of colonies.
- Forage widely over shelf and shelf break
- Feed primarily on small schooling fish and invertebrates:
  - Rockfish, *Sebastes* spp., esp. *S. jordani* and *S. flavidus*
  - Northern anchovy, *Engraulis mordax*
  - Pacific sanddab, *Citharichthys sordidus*
  - Nightsmelt, *Sprinchus starki*
  - Pacific herring, *Clupea harengus*
  - Lingcod, *Ophiodon elongatus*
  - Shiner surfperch, *Cymatogaster aggregata*
  - Salmonids
  - Pacific whiting, *Merluccius productus*
  - Pacific sardine, *Sardinops sagax*
  - Market Squid, *Loligo opalescens*
  - Krill, *Thysanoessa spinifera*

**Important colonies:**
- Farallon Islands
- Pt. Reyes
- Devil’s Slide
- Drakes Bay area

**Pelagic Cormorant & Pigeon Guillemot**

- Widespread breeders in small colonies (~ 4,000 breeding birds)
- Forage in coastal waters: rocky reefs.
- Feed on small fish, some inverts.
  - Pelagic Cormorant
    - Rockfish, *Sebastes* spp.
    - Sculpins, *Cottidae*
    - Mysid shrimp, *Spirontocaris* sp.
  - Pigeon Guillemot
    - Rockfish, *Sebastes* spp.
    - Sculpins, *Cottidae*
    - Octopus, *Octopus rufescens*
    - Sanddab, *Citharichthys* sp.
    - Gunnels, *Pholidae*
    - Cusk eel

- “Boom and bust” breeders:
  - When preferred prey abundant, productivity high
  - When preferred prey absent, productivity very low

- Indications that populations have declined over last two decades, probably because of poor rockfish productivity.
**Harbor Seal, Phoca vitulina**

- Mainly occur in nearshore habitats
- Breed at several colonies: Marin Co. has most in state (20%).
- Mainly occur in nearshore habitats
- Feed primarily on schooling fish and invertebrates:
  - Rockfish, Sebastes spp., esp. S. jordani and S. flavidus
  - Northern anchovy, Engraulis mordax
  - Pacific sanddab, Citharichthys sordidus
  - Nightsmelt, Sprinchus starksi
  - Pacific herring, Clupea harengus
  - Shinier surfperch, Cymatogaster aggregata
  - Salmonids
  - Pacific whiting, Merluccius productus
  - Pacific sardine, Sardinops sagax
  - Market Squid, Loligo opalescens
  - Halibut
  - Flounder

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**Harbor Seal rookeries**

- Important rookeries:
  - Cowell Ranch
  - Double Point
  - Drakes Estero
  - Point Reyes Headlands
  - Bird Rock (Tomales Pt.)
  - Tomales Bay
  - Russian River mouth

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**Conclusions**

Regionally (globally) important breeding/foraging area

Gulf of the Farallones is one of the largest concentration/diversity of marine birds/mammals in California.

Farallon Islands is the largest seabird breeding colony in the lower 48 states and breeding area for 5 pinniped species.

Point Reyes, Drakes Bay colonies, and Russian River area: most significant mainland sites

Estuaries host large numbers of shorebirds/waterfowl