

# **I. Introduction**

On January 11, 2000, President Clinton established by proclamation the California Coastal National Monument (CCNM). The proclamation identified the Bureau of Land Management (BLM) as the managing agency. The CCNM includes all unappropriated or unreserved lands and interests in lands owned or controlled by the United States in the form of islands, rocks, exposed reefs, and pinnacles above the mean high tide within 12 nautical miles of the shoreline of the State of California. The proclamation specifically identifies the pelagic, nearshore, and terrestrial bird species associated with the CCNM, as well as the importance of this nearshore ocean zone for pinnipeds, general biodiversity, and other species and resources of scientific interest.

In anticipation of the development of a management plan for the CCNM, the BLM recognized the need to identify key biological resources, their distribution throughout the CCNM, and their relative importance to the species themselves and to ecosystem viability. With this information available early in the planning process, issues related to the management of these species can serve as both sideboards within which other uses can be directed, and as opportunities for ensuring species viability and increasing public awareness of these resources.

This document focuses on the breeding marine birds and mammals of the CCNM. A literature search was conducted to provide a summary of existing information regarding the distribution and status of these species in the CCNM. The information is presented in three sections, the first being a summary of major issues regarding management of these species. The second is an account of each species considered, including pertinent biological data that would be of assistance to land managers. The third segment is a brief geographic discussion focusing on management issues relative to their location in the state. An appendix includes tabulated information suitable for inclusion in a GIS layer. This appendix contains the geographic information gleaned from the literature and in communication with active researchers in California.

## **The Offshore Rocks**

The proclamation establishing the CCNM described the included islands as “all unappropriated or unreserved lands and interests in land owned or controlled by the United States in the form of islands, rocks, exposed reefs, and pinnacles above mean high tide within 12 nautical miles of the shoreline of the State of California.” In the geographic extent of the monument, there are 12,767 offshore rocks or islands recognized. Of these, 11,507 of them fall under the jurisdiction of the BLM and therefore the CCNM. Only 70 of these rocks are larger than 1 acre and of these only 11 are greater than 5 acres in size.

### *Description of habitat*

These offshore rocks within the CCNM are distributed along the entire length of California. They are typically small in size, close to the mainland and of low elevation. Many are composed of exposed rock, washed by active seas. A small but important minority is large enough to have soil and low vegetation. The largest of these rocks are just greater than 10 acres. These largest rocks host a small complement of plants and often breeding seabirds. Even some of the smaller rocks have seabird nesting sites, as isolated pairs of Pelagic Cormorants, Pigeon Guillemots and Black Oystercatchers will use such suitable sites. Many of the rocks that are overwashed during high tide and heavy sea events are important feeding sites for Black Oystercatchers and a suite of wintering and migrating shorebirds such as Black Turnstones, Surfbirds, Wandering Tattlers, Whimbrels and Rock Sandpipers.

## General Management Considerations

While most of these rocks are difficult to access and rarely are visited by people, a few are located close enough to coastal human activities to have been affected by these activities. Some are located in places that make them hazards to boat traffic, and so have had navigational aids established on them. The following summary is intended to aid managers in assessing the human impacts on offshore rocks. It is necessarily general in discussion, but can be applied in specific cases as local knowledge makes it appropriate.

The most obvious impacts on the wildlife using these offshore rocks is the result of direct disturbance from human activities. Disturbance can result from a number of unrelated activities, but generally involves people approaching nesting birds or roosting marine mammals close enough to cause detrimental changes in their behaviors, including flight and abandonment of nests or young. Generally these disturbances have more impact during the bird nesting season and the pinniped pupping season. An estimate of critical seasons for the species treated in this document is presented in Table 1.

Table 1.

### Appropriate seasonal restrictions for nesting seabirds and pupping pinnipeds in California

Bird Species	Egg dates	Chick dates
Leach's Storm-Petrel	10 May – 15 Sept.	2 July – 25 Nov.
Ashy Storm-Petrel	1 May – 1 Oct.	20 June – 15 Jan.
Black Storm-Petrel	20 May – 7 Aug.	7 July – 15 Nov.
Fork-tailed Storm-Petrel	18 March – 21 April	21 June – 15 Aug.
Brown Pelican	N/A	N/A
Double-crested Cormorant	20 April – 20 Aug.	20 May – 30 Aug.
Pelagic Cormorant	28 April – 30 Aug.	10 June – 25 Oct.
Brandt's Cormorant	10 April – 30 July	5 May – 15 Sept.
Snowy Egret	20 May – 5 July	20 April – 1 Aug.
Black-crowned Night-Heron	N/A	N/A
Peregrine Falcon	N/A	N/A
Black Oystercatcher	15 April – 21 Aug.	7 May – 31 Oct.
Western Gull	22 April – 7 July	10 May – 27 Aug.
Common Murre	26 April - 9 June	22 May – 10 August
Pigeon Guillemot	28 April – 3 Aug.	2 June – 30 Aug.
Xantus's Murrelet	20 Feb. – 10 June	25 May – 30 July
Cassin's Auklet	15 March – 29 July	10 May – 20 Sept.
Rhinoceros Auklet	15 April – ?	? – 21 Aug.
Tufted Puffin	N/A	N/A
Pinniped Species	Pupping dates	
Northern Fur Seal	20 May – 30 June	
Steller's Sea Lion	15 May – 15 July	
California Sea Lion	20 May- July 31, most born late June	
Harbor Seal	March - August	
Northern Elephant Seal	15 December – 15 January	
Sea Otter	All year; most born January - March	

### Fishing

Many of California's offshore rocks situated near harbors for launching and mooring boats are popular fishing destinations. While the activity of fishing does not necessarily cause disturbance, the proximity of a boat--with its attendant noise and movement--can cause stress to nesting and roosting birds and marine mammals. Especially vulnerable are nesting Brandt's and Pelagic Cormorants,

Common Murres and Steller's Sea Lions. The Pelagic Cormorant nests on cliffs inaccessible to terrestrial predators, which in many cases are next to relatively deep water suitable for small boat traffic and fishing. The other species are colonial nesters that are particularly susceptible to nest predation by Western Gulls and Common Ravens. When these species are frightened from nests, the eggs and young chicks are left exposed and unprotected. One or two ill-timed disturbances can cause almost complete breeding failure of a colony. Nesting sites of the Pelagic Cormorant are distributed the entire length of the state. The most susceptible areas for Brandt's Cormorants and Common Murres are in the northern half of the state. Large breeding colonies exist on a number of the offshore rocks near the towns of Mendocino (Mendocino County) and Trinidad (Humboldt County). Steller's Sea Lions still presumably breed on a number of these offshore rocks north of Cape Mendocino. Waters surrounding these larger rocks are known to be productive fishing sites.

A specialized form of 'fishing' popular along the coast from Marin through Mendocino counties is sport diving for abalone. Waters surrounding these offshore rocks are particularly popular sites for this activity. At some locations, such as Van Damme State Beach in Mendocino County, many abalone divers use kayaks or inflatable boats launched from the beach to gain access to the waters around offshore rocks. While most of the activities associated with abalone diving are not particularly prone to disturb birds, marine mammals, especially Harbor Seals, may be disturbed by boaters approaching too closely. On some occasions, "ab" divers will access these offshore rocks, potentially causing disturbance to nesting Pelagic Cormorants, Pigeon Guillemots or Black Oystercatchers. If these divers stay on the rocks for more than a few minutes, oystercatcher eggs and small chicks can be lost to Western Gull predation.

Another legal consumptive activity falling under the category of fishing is mussel collecting. While most mussel collectors confine their activities to mainland shorelines, those who use boats for abalone diving occasionally disembark upon offshore rocks in search of mussel beds. This type of disturbance is likely to disturb Black Oystercatchers if they are nesting nearby, and can cause loss of eggs and/or small chicks to gulls.

### *Recreational Kayaking and Scuba Diving*

Recreational boating using various styles of kayaks has become common at many locations along the California coast. Some of the popular launching sites in Northern California are located near sensitive offshore rocks, such as at Van Damme State Beach in Mendocino County. While most of the activities associated with kayaking are not considered a disturbance to seabirds, roosting or pupping Harbor Seals are prone to disturbance by boaters approaching too closely. Scuba divers, like abalone divers, are not usually a cause of disturbance to birds and marine mammals. Kayakers or scuba divers who leave their boats or the water and walk on smaller accessible rocks can potentially disturb nesting Black Oystercatchers, Pelagic Cormorants or Pigeon Guillemots. It must be noted that any person going ashore for any reason on a rock with nesting seabirds, especially murres and cormorants, can cause significant harm.

### *Seaweed collecting*

A small industry exists for harvesting seaweeds as a specialty food. Seaweed collectors who go ashore on rocks that have nesting seabirds can cause the type of disturbances described above.

### *Management recommendations to reduce direct human disturbances*

Most of the direct human disturbance can be managed effectively by education, and by the implementation of seasonal restrictions. Near important seabird nesting sites and at access points, appropriate signs and educational materials should be available to the recreating public. Seasonal restrictions to close approach can be designed to keep people from disturbing seabirds.

## **Invasive Species**

### Plants

A comprehensive plant survey has not been performed on these offshore rocks. The status of rare plants on these rocks is therefore not well understood. On the other hand, it is apparent that many coastal sites in California have been impacted by the introduction of invasive plants, such as Ice Plant (*Carpobrotus chilenses* and *C. edulis*) and Pampas Grass (*Cortaderia jubata*), both of which are known to occur on rocks close to the mainland. The status of these invasives – and their potential affect on nesting seabirds – is unknown. A number of our smaller seabirds, e.g. Leach's and Fork-tailed Storm Petrels and Cassin's Auklets, burrow in the soil of these rocks to hide their eggs from Western Gulls and Common Ravens. Some of these invasive plant species could change the distribution and abundance of soil on these islands, resulting in changes in nest availability to these birds.

### Canada Geese

The large Canada Goose (*Branta canadensis moffiti*) was introduced to the Humboldt Bay region in the late 1980s. This introduced population strongly established itself, and has expanded in numbers and range. Canada Geese are now common residents of coastal sites in Mendocino, Humboldt and Del Norte counties. These geese are known to nest on a number of the offshore rocks. Impacts from grazing geese (see below under Aleutian Canada Goose) can be detrimental to island vegetation, to the extent that erosion can become a problem. In addition, these geese are aggressive towards other birds and can displace native seabirds. The potential long term effects on the larger offshore rocks deserves monitoring.

### Mammals

Small and medium-sized mammals are well known as predators on seabirds. On larger islands, the House Mouse (*Mus musculus*), Black Rat (*Rattus rattus*) and Norway Rat (*R. norvegicus*) can be major predators on eggs and young chicks. The present status of these rodents on the offshore rocks treated here is unknown. During extreme low tides, native mustelids such as Striped Skunk (*Mephitis mephitis*) Mink (*Mustela vison*) and River Otter (*Enhydra lutra*) may visit rocks situated within the intertidal zone. Generally speaking, seabirds do not coexist with resident or regularly-visiting mammalian predators.

### Interaction with other native species

Increasing populations of native birds and mammals can have a negative effect on other nesting seabirds. An increase in Double-crested Cormorant populations has been implicated in the decline of storm-petrels nesting on Little River Rock, Humboldt County (Harris 1996). Increasing numbers of Brown Pelicans in California could have a similar impact, as they annually gather in large flocks on offshore rocks to loaf and preen. Trampling of soil, with consequent reduction in depth and reduced burrow habitability, is perceived as a possible problem.

### Management recommendations to reduce impact from invasive species.

The highest priority for reducing impact from invasive species is to determine which species is found where. Broad management activities are not likely to be effective in removing invasive species. Focused, specific control measures will be determined by the species of concern and local conditions. Careful surveys should be instigated on major seabird sites, or sites known to host rare species or species with limited distribution to assess the presence of invasive species and their potential effect on the seabirds.

### Oil spills

While the impact of oil spills are beyond the scope of this work, the results of surveys indicating where and when seabirds and marine mammals are distributed in California will be valuable in planning response to future spills. As survey work progresses during future management efforts, communication with spill response agencies can be potentially important.

### Data gaps

The main identified data gap for the offshore rocks is that no systematic surveys have been done since the 1980's. Some of the larger seabirds, e.g. Common Murre (Manuwal et al, 2001) have been surveyed from the air, many small breeding populations of seabirds have not been visited since the monumental work of SOWLS et al. (1980). The status of most of the seabird colonies on the offshore rocks in the CCNM is close to unknown. This is even more true for the smallest colonies that might host nocturnal visiting seabirds. More importantly, since techniques for surveying for nocturnal species have been recently developed (such as using radar to look for birds visiting colonies), species of Storm-petrels and small auks are likely to have new nesting sites discovered with future surveys.

### **Explanation of Database**

The appendix contains the geographic information compiled from published literature, gray literature and unpublished information from active researchers in California. This information is organized into two separate databases. The Seabirds database consists primarily of known breeding bird colonies. The marine mammal database contains pinniped rookery and haul-out sites. Map datum information is not included as it was not provided by our sources.

We viewed this data in Arcview with the California Coast and Off Shore Rocks GIS files provided by the BLM. We determined that many data points can be confidently matched to the appropriate off shore rock/s. This will allow managers to examine seabird and marine mammal usage of specific off shore rocks and assign the appropriate unique identification number of individual rocks to corresponding data points. To assess the effectiveness of these databases we began this process for the seabird data. In some cases the names and coordinates of seabird and offshore rock databases matched perfectly. In other instances, coordinates did not match exactly but off shore rock identification numbers were confidently assigned for one of two reasons: 1) The name of the rock in the Seabird database matched the name of a near by off shore rock, or 2) The Catalog of California Seabird Colonies provides detailed maps for each location. Visual comparisons of maps and the GIS file allowed us to confidently assign correct off shore rock unique identification number to data points.

The Pinniped database contains some data acquired from unpublished Humboldt State University Master theses. The coordinate information from these theses is generally imprecise; therefore columns are included containing the original co-ordinates format as they were not converted to decimal degree. Regardless, the locations and naming convention of off shore rocks is consistent throughout all theses, therefore unique identifiers can be assigned accordingly by consulting modern maps. In both databases, some data points occur either in between clusters of off shore rocks or are not near any rocks. This is likely due to the variety of methods used to collect data and past inaccuracy of GPS systems. In these cases we recommend avoiding guess work by not assigning off shore rock unique identification numbers to data points.