

Using Seabirds Feeding to Inform National Marine Sanctuary Management

Jaime Jahncke
jjahncke@pointblue.org

Understanding seabird habitat preferences is critical to their long term conservation. To this end, Point Blue and partners investigated seabird foraging habitat selection within the Gulf of the Farallones and Cordell Bank National Marine Sanctuaries.

We studied the five most abundant seabirds nesting on the Farallon Islands: western gull (*Larus occidentalis*), common murre (*Uria aalge*), Cassin's auklet (*Ptychorampus aleuticus*), rhinoceros auklet (*Cerorhinca monocerata*) and Brandt's cormorant (*Phalacrocorax penicillatus*).

Using seabird abundance information collected by the Applied California Current Ecosystem Studies Program (ACCESS, www.accessoceans.org) from 2004–2011, we determined the relationship between the numbers of seabirds feeding in a given location and several ocean variables, such as sea surface temperature, distance to geographic features, and the state of the Southern Oscillation Index. We also evaluated seasonal, yearly and species-specific variability in foraging behavior.

We found that the waters near Cordell Bank and the continental shelf east of the Farallon Islands are important feeding areas for all species studied.

Given the potential impacts of current human activities on seabird feeding areas, we explored three possible scenarios where 10, 30 and 50 percent of important seabird feeding areas would be conserved, regardless of current protection status. We then compared and contrasted results in relation to existing marine protected areas (MPAs) and the future alternative energy footprint identified by the California Ocean Uses Atlas.

We demonstrated that the majority of important seabird feeding areas lie outside of State Marine Protected Areas (MPAs) and face threats from shipping, oil spills, and offshore energy development.

Our analysis highlights the need for innovative marine conservation planning efforts and provides a foundation on which to build more comprehensive zoning and management for California's National Marine Sanctuaries.

Main Points

For all five seabirds we studied, important feeding areas were near Cordell Bank and around the Farallon Islands.

Important feeding habitat lie outside state MPAs and are threatened by human activities.

Foraging areas around the Farallon Islands are high priorities for conservation.

Feeding areas overlapped with the potential footprint for wind energy development off San Francisco as identified by the California Ocean Uses Atlas.

McGowan J, Hines E, Elliott M, Howar J, Dransfield A, et al. (2013) Using Seabird Habitat Modeling to Inform Marine Spatial Planning in Central California's National Marine Sanctuaries. PLoS ONE 8(8): e71406. doi:10.1371/journal.pone.0071406

visit www.pointblue.org/publication-briefs