

## Project Description

### Who We Are

ACCESS is a private/public partnership formed by Point Blue Conservation Science, Cordell Bank and Greater Farallones National Marine Sanctuaries that supports marine wildlife conservation and healthy marine ecosystems in north-central California

### What We Do

ACCESS members jointly conduct integrated, collaborative, and multi-disciplinary research to monitor distribution and abundance marine wildlife in the context of underlying physical oceanographic processes and inform about wildlife responses to changes in ocean conditions and human threats.

### Where We Work

ACCESS focuses on the oceanic habitats in Federal and State waters within Cordell Bank, Greater Farallones and Monterey Bay National Marine Sanctuaries. National Marine Sanctuaries are considered “sentinel sites” and are ideal places to conduct recurring studies that are critical for tracking ecosystem changes.

### Tracking Ocean Climate

ACCESS produces an annual ‘Ocean Climate Indicators Report’ that provides information about the status and trends of physical and biological climate change indicators in the region. These indicators were selected by a working group of the Greater Farallones National Marine Sanctuary Advisory Council with input from over 50 regional scientists and resource managers after a 2-year collaborative process.

### Solving Ocean Problems

ACCESS recommends solutions to critical ocean problems focusing on the following management issues:

- 1) Saving whales from ship strikes – recommend management approaches to save whales from strikes
- 2) Reducing whale entanglements – identify high risk areas to decrease entanglements in crab fisheries,
- 3) Protecting wildlife hotspots – protect wildlife and decrease conflicts with proposed new human uses,
- 4) Developing ecosystem indicators – track ecosystem responses to climate and inform conservation,
- 5) Tracking ocean acidification – document changes in water chemistry and assess biological responses.

### Training Ocean Stewards

ACCESS train ocean stewards by hosting a NOAA Teacher-at-Sea each year, offering lab internships to recent college graduates interested in pursuing careers in marine science and providing research opportunities to graduate students interested in collaborating on physical/biological oceanography and ecology projects.

# Recent findings

## Saving Whales from Ship Strikes

ACCESS data has been used to identify whale habitat and inform shipping lane changes in 2009-2013. The new lanes decreased spatial overlap between vessels and whale habitat by about 70%, but increased traffic over critical feeding areas. Since then, the National Marine Sanctuaries implemented vessel speed restrictions to decrease deadly strikes within the shipping lanes. Point Blue is currently using ACCESS data to evaluate the efficacy of the vessel speed restriction and to recommend additional management measures that will help save more whales off San Francisco, and impact whale conservation along the US West Coast.



## Protecting Wildlife Hotspots

ACCESS data has been used to identify seabird and whale hotspots to decrease conflicts with existing and proposed new human uses. Seabirds breeding on the Farallon Islands feed over the continental shelf east of the island and along the shelf break west from the island. Seabirds that visit from colonies afar and whales aggregate to feed along the shelf break, particularly in the vicinity of Cordell Bank. Our results show that the most important seabird and whale habitat lies with federally protected waters and outside of California Marine Protected Areas (MPAs) where threats from shipping, oil spills, and offshore energy development remain.



## Tracking Ocean Acidification

ACCESS data has been critical in developing new methods to measure ocean acidification (aragonite saturation) in north-central California. About a third of the global carbon emissions have been absorbed by the ocean, lowering carbonate ion concentrations, and creating a stressful environment for shell-forming organisms. ACCESS data was used to develop a relationship that enables aragonite saturation to be estimated from existing hydrographic measurements, for which greater spatial coverage and longer time series exist in addition to higher spatial and temporal resolution.



**Applied California Current Ecosystem Studies (ACCESS)**

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