

# Greater Farallones National Marine Sanctuary

## SEAS - Beach Watch

25-Years Monitoring Sanctuary Shoreline and Coastal Habitats

Greater Farallones National Marine Sanctuary (GFNMS) Beach Watch surveyors have monitoring beaches since October 1993. Every two weeks, we monitor 61 beaches along GFNMS and the northern portion of Monterey Bay National Marine Sanctuary through the Sanctuary Ecosystem Assessment Surveys – Beach Watch program (SEAS-Beach Watch). With a professional staff of three full time and five part-time staff, Beach Watch utilizes over 150 citizen-scientists to monitor beaches spanning 210 miles (339 km) of coast from Point Año Nuevo in San Mateo County north to Manchester Beach in Mendocino County. Four volunteers and one staff have been with the program for more than 25 years.

Surveyors collect data on abundance and distribution of coastal birds, mammals, entanglement, human activities, oil pollution, beach profiles, violations, and the status of the mouths of streams and lagoons that cross the beach. Data are publicly available on the Greater Farallones Association (GFA) [website](#). Follow us on [Facebook](#) to see highlighted beaches surveyed through the Beach Watch project.

Beach Watch is an award-winning project of the federal government and Greater Farallones Association, providing information on species that are most vulnerable to oil pollution and serves as a model for other cost-effective, citizen-science programs. Data from Beach Watch have been used to secure restoration dollars in excess of \$52 million.



The SEAS-Beach Watch program, surveys 61 beaches within GFNMS and MBNMS, including beaches within Bolinas Lagoon and Tomales Bay. Click map to enlarge.

### Connecting Science and Outreach at Greater Farallones National Marine Sanctuary

Sanctuary Ecosystem Assessment Surveys (SEAS) – Beach Watch monitoring data are integrated into the sanctuary’s web site, classroom programs and visitor center exhibits.

Future exhibits on climate change will include predicted changes and impacts to the sandy beach ecosystem. Exhibits will depict how delays and changes to the

upwelling patterns and increased storm events in turn change the breeding of forage fish, and correlate with increased frequency and severity of seabird mortality events. Planned visitor centers will use data from the Beach Watch project highlighting where and when visitors can view species of interest through smart phone-applications and tour-by-cell phones. These “apps” will point

visitors to areas of recently sighted rarities and seasonal highlights of the sanctuary.

Follow us on [Facebook](#) to view the beaches of Beach Watch. To celebrate 25-years of Beach Watch surveys along our coast, GFNMS and GFA have selected Beach Watch survey photos, which highlight each beach within our Beach Watch project.



Photo: GFNMS

Volunteers undergo 80 hours of training to collect information about live and dead birds and mammals, oil pollution, erosion and deposition of beaches, and the status of streams and lagoons. Some of our most important work involves the detection of **mortality events**, like the **Cassin's auklet** and common murre mortality events in 2014- 2015.



Photo: GFNMS

Beach Watch has over 150 volunteers, who annually contribute over 11,000 hours of volunteer time performing surveys, entering data, and mentoring new volunteers.



Photo: GFNMS

Endangered and threatened species, like this Guadalupe fur seal, are monitored through Beach Watch surveys. In recent years, Beach Watch has detected unusually high numbers of dead Guadalupe fur seals, 2014-2018.

## 2018 Findings

- A weak La Niña occurred in 2018, resulting in lower than average beached birds and marine mammals. During a La Niña, ocean temperatures are cooler than average and availability of forage/food species typically increase.
- Northern fulmar (*Fulmarus glacialis*) deposition was notably higher, with a peak during March (0.625 birds/km), six times higher than average for March.
- There was an unusual number of fresh tarballs found on numerous beaches during the late and early winter. The State's petroleum chemistry lab tested the samples and found that they were from a natural seep, most likely from southern California.
- For the fourth year in a row, there was a significant increase in the number of dead, young-of-the-year Guadalupe fur seals.

## Addressing Management Issues

- Dead bird and mammal data provide early alerts to mortality events and indices of the health of the shoreline.
- Live bird and mammal data provide information on resources at risk from coastal human activities.
- Oil and tarball data provide information on the location, amount, source and trends of oil pollution.
- Abundance and distribution of beach wrack provide location and seasonal trends of this important shoreline, biogenic (living structural) habitat.

- Beach profiles provide information on the seasonal and tidal range of the openings of lagoons, streams, and long-term trends in beach erosion and deposition patterns.

## Productive Partnerships

- Greater Farallones Association – project management, volunteer supervision, staffing and fundraising for GFNMS programs
- Point Blue Conservation Science – analyses of ecosystem linkages between mortality events and seabird populations
- California Department of Fish and Wildlife (CDFW), Office of Spill Prevention and Response – oil pollution chemistry lab analysis, chain of custody supplies, emergency response, damage assessment and restoration planning
- California Academy of Sciences – training volunteers, field expertise and data quality and verification
- MPA Watch (Marine Protection Areas) – statewide human use activities
- Department of Interior, US Fish and Wildlife Service, the National Park Service, and CDFW – pathology investigations, field expertise, permitting, logistics, emergency response, damage assessment and restoration planning
- California Department of Public Health – monitoring harmful algal blooms and biotoxins
- NOAA Office of Response and Restoration – damage assessment, restoration planning and logistics