



Western Snowy Plover Monitoring at Ocean Beach and Crissy Field

Importance: *The western snowy plover is a threatened species under the Endangered Species Act that is sensitive to disturbance at overwintering sites on Ocean Beach and Crissy Field.*



Western snowy plovers find food in debris near the high tide line

The sparrow-sized western snowy plover (*Charadrius alexandrinus nivosus*) inhabits coastal areas from Washington State to Baja California. Between July and May, snowy plovers overwinter on wide, sandy beaches to build energy reserves for migration and breeding. In the Golden Gate National Recreation Area (GGNRA) this includes the Snowy Plover Protection Area (SPPA) at Ocean Beach and the Wildlife Protection Area at Crissy Field (WPA). While overwintering, plovers spend their time resting and feeding on invertebrates such as flies, beetles, sand hoppers, clams, crabs, and amphipods that they find in debris near the high tide line.

Habitat loss and degradation due to development, beach recreation, and encroachment by non-native vegetation have contributed to a decline in the western snowy plover population. At GGNRA, use of these popular beaches by patrol vehicles,

equestrians, dogs, joggers, and kite flyers can disturb plovers, cause them to expend excessive energy fleeing, and make them more visible to avian predators. Despite the high levels of disturbance, snowy plovers return to the GGNRA every year, possibly because the beaches provide high quality prey or offer some of the only suitable habitat left in the region.

Monitoring Program: *The National Park Service (NPS) monitors snowy plovers at Ocean Beach and Crissy Field to determine changes in abundance and distribution, and to understand threats to plovers from recreational and maintenance activities.*

Since 1994, NPS staff and volunteers have been monitoring overwintering snowy plovers at the Ocean Beach SPPA. Time, weather, tide, and plover number, location, and behavior are recorded during two weekly surveys. Sources of disturbance including equestrians, vehicles, aircraft, kites, raptors, people, and dogs are also noted. NPS began monitoring shorebirds in the Crissy Field WPA in 2000, and snowy plovers specifically in 2004.

To protect overwintering plovers, a seasonal leash requirement was instituted for the Ocean Beach SPPA, and dogs were entirely prohibited within the Crissy Field WPA, from 1997 until 2004. As a result of a lawsuit (*U.S. v. Barley*) unleashed dogs were allowed back into these areas in December 2005. An analysis of monitoring data from this program resulted in a leash requirement for the 2006-2008 overwintering seasons. On-going monitoring will help evaluate the effectiveness of this requirement. Additionally, NPS erected new signage and instituted a snowy plover docent program in February 2008 to help educate beach users about plovers and the leash requirement.



Western snowy plovers overwintering on Ocean Beach blend well into their surroundings

Status and Trends: *Between 1994 and 2006, the number of plovers at Ocean Beach varied but generally increased. Disturbance by unleashed dogs also increased.*

Between 1994 and 2006, an average of 27 snowy plovers were observed overwintering at the Ocean Beach SPPA. The average maximum number of plovers during this time was 44 (Figure 1). From a peak maximum count of 85 individuals in 1994, plover numbers appeared to decline until 1999, and then increase again until 2003. The population seems to have since leveled off, but is still below what it was in 1994. It is not clear what causes these population fluctuations, but factors may include changes in climate and environmental conditions, varying levels of breeding success, or the availability of suitable habitat at broader regional scales.

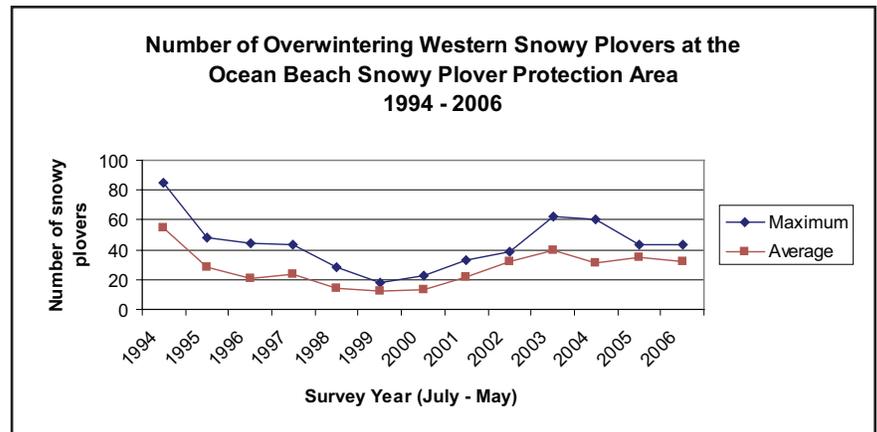


Figure 1. Plover population levels have been below the maximum values observed in 1994, although the declining trend seen in the 1990s improved from 2000 to 2006. The causes of these population fluctuations are unknown.

Snowy plovers started overwintering at the Crissy Field WPA in January 2005. Since then, between two and six plovers have used the WPA during the overwintering season. Two color-banded plovers—a 2004 fledgling from Pismo Beach, and a 2003 fledgling from the Monterey Bay Aquarium—were observed in the WPA during the 2004, 2005 and 2006 survey years, indicating a preference by these plovers to return to overwinter in this area.

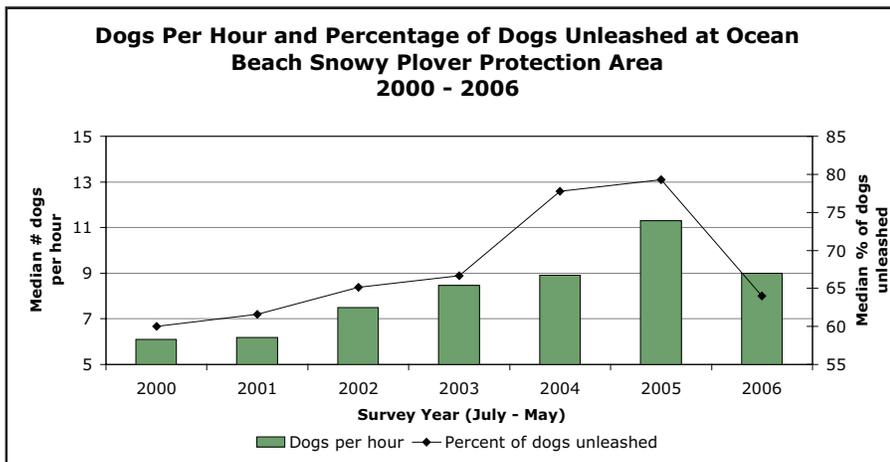


Figure 2. Both the number of dogs per hour and the median percentage of unleashed dogs increased from 2000 through 2005. After the seasonal leash requirement was enacted in 2006 both these measures decreased.

Both the number of dogs observed per hour and the percentage of unleashed dogs increased from 2000 through 2005 at the Ocean Beach SPPA (Figure 2). During this time, the average number of dogs per hour increased from just below seven to over 13, and the percentage of unleashed dogs increased from about 60% to nearly 80%.

After the seasonal leash requirement was put in place in November 2006, the median number of dogs per hour decreased as did the percentage of unleashed dogs. For the entire 2006 season, the median percentage of off-leash dogs was 64%. Results of

monitoring from the Crissy Field WPA also indicated an upward trend in dog use after the 2005 Barley rulings, and increases in the number of off-leash dogs and chasing events of snowy plovers and other shorebirds.

Analyses of plover monitoring data have shown that while the leash requirement reduced the number of off-leash dogs, there are still too many unleashed dogs in these areas to adequately protect the western snowy plover. An increased effort to enforce the leash requirement might help, but should be accompanied by efforts like the snowy plover docent program that increase public awareness about how to protect plovers.

Additional Resources:

NPS. 2006 (and 2007 addendum). Status Report: Western Snowy Plovers and Recent Changes in Human and Dog Use within the Snowy Plover Management Area at Ocean Beach and the Wildlife Protection Area at Crissy Field. Golden Gate National Recreation Area.

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