

Western Snowy Plover (*Charadrius alexandrinus nivosus*)

NMPIF level: Species Conservation Concern, Level 1 (SC1)

NMPIF assessment score: 17

NM stewardship responsibility: Low

U.S. Shorebird Plan Status: Category 5, Highly Imperiled

New Mexico BCRs: 18, 35, (16)

Primary breeding habitat(s): Emergent Wetlands and Lakes (Alkali Lakes)

Summary of Concern

Snowy Plover is a broadly distributed shorebird with a population that may number as few as 13,000 individuals in the United States. It has suffered significant declines due to breeding disturbance and degradation of nesting habitat.

Associated Species

Killdeer, American Avocet, Black-necked Stilt, Least Tern (BC2)

Distribution

Snowy Plover is a cosmopolitan species with two races in North America. The breeding range of the western race (*C. a. nivosus*) is quite fragmented. It extends across most of the Pacific Coast of North America and along the Gulf Coast. Inland, western Snowy Plovers breed locally in eastern California and Oregon, central Nevada, northwest Utah, southern Arizona, southern New Mexico, west-central Texas, central and southern Kansas, western Oklahoma, central and eastern Colorado. A breeding population may still exist in central Mexico, but the current status there is unknown. The largest population in the United States is at the Great Salt Lake in Utah.

In New Mexico, Snowy Plovers breed regularly at Bitter Lake NWR in Chaves County, and at Holloman Lakes in Otero County. They may breed sporadically elsewhere on alkali playas. Ligon (1961) reported the species as a summer resident in the Estancia Valley and at Bosque del Apache NWR. The breeding population in New Mexico is migratory, although the species sometimes winters in the southern part of the state (Page et al. 1995).

Ecology and Habitat Requirements

In New Mexico and Colorado, Snowy Plovers breed on barren or sparsely vegetated ground, usually on alkali flats where at least minimal surface water is present, or around saline lakes. Nests are usually located within 150 m of water. Nests are often located on a different substrate than that of the surrounding area, on small rises or slopes of less than 3 percent (Page et al. 1995). In New Mexico, nests often are placed in or next to tufts of grass, tumbleweed, iodinebush, or *Salicornia* spp. but also may occur in completely bare areas (G. Warrick, pers. comm.).

Birds arrive in New Mexico by mid-March (occasionally late February) and depart from late July through early October. Most nesting takes place from mid-April through July. Double- and triple-brooding is reported in coastal California, but not for interior populations. Clutch size is typically 3. The diet of Snowy Plovers in New Mexico includes a high percentage of *Bledius* spp. beetles and sandflies (Freehling et al.1999).

Conservation Status

Species Assessment

DISTRIBUTION	4
THREATS	4
GLOBAL POPULATION SIZE	5
LOCAL POPULATION TREND	2
IMPORTANCE OF NEW MEXICO TO BREEDING	2
COMBINED SCORE	17

Western Snowy Plover is a Species Conservation Concern, Level 1 species for New Mexico, with a total assessment score of 17. In the U.S. Shorebird Conservation Plan, it receives a maximum vulnerability score of 5 for its small population size and scores of 4 for its limited non-breeding distribution and for threats during both breeding and non-breeding seasons. Pacific coastal populations of Western Snowy Plover were listed as Threatened by the U.S. Fish and Wildlife Service in 1993; inland populations and those breeding along the Gulf of Mexico are listed under the category Bird of Conservation Concern (U.S. Fish and Wildlife Service 2002).

Population Size

The U.S. Shorebird Conservation Plan estimates a United States population of 13,200 (Brown et al. 2001). Page et al. (1995) estimated a United States population of 21,000. Size of the Snowy Plover population in New Mexico is uncertain, probably in the range of 200-300 breeding pairs. The greatest concentration of breeders in New Mexico occurs at Bitter Lake NWR, with 150+ nesting pairs in some years. However, suitable habitat is decreasing at that location, suggesting that the total New Mexico breeding population might decline.

Population Trend

Regional surveys have reported declines in Snowy Plover numbers across much of the species range in the United States. Inland populations in the Great Basin showed a 20% decline from the late 1970s through the late 1980s (Page et al. 1991). This species is not adequately monitored by BBS.

Threats

Coastal populations have experienced declines due to loss of nesting habitat to beachfront development and due to increasing human disturbance to beach-nesting birds. Breeding habitat along midwestern rivers is degraded by damming, water withdrawal, and vegetation encroachment (Page et al. 1991). The latter is currently occurring at Bitter Lake NWR (G. Warrick, pers. comm.). In the interior, breeding habitat is also being reduced due to flooding of alkali lake habitats, or to drying up of shallow playas by water withdrawals, resulting in vegetation encroachment (Page et al. 1995). Snowy Plovers typically experience a high rate of nest failure due to predation (up to 36% of nests, Smith and Johnson 2004). Predation rates may increase with increasing nest density (Page et al. 1995, Smith and Johnson 2004).

Management Issues and Recommendations

Management for Snowy Plovers in New Mexico should concentrate on maintaining suitable habitat and favorable conditions for known breeding populations in the southeast quadrant of the state. Regulation of water levels at or near nesting areas may be of greatest importance, including preserving water at playas and managing water at alkali lakes to discourage invasive wetland plants. Fencing in areas with coyotes or other mammalian predators is recommended. Productivity of nesting Snowy Plovers in New Mexico should be studied and sources of nest failure identified.

NMPIF Recommendations

- Reduce flooding on alkali flats from March through June where water levels can be controlled, and draw down water to create suitable habitat where possible. Maintain high winter water levels in lakes, allowing water to draw down before spring.
- Maintain the integrity of alkali flats even when no water is present.
- Eliminate illegal dumping and legal potash dumping on alkali flats.
- Exclude people, dogs, and ATVs from nesting areas.
- Study options for managing predation on Snowy Plover nests and chicks. Seek to keep predation rate under 30% (G. Warrick, personal communication).

Species Conservation Objectives

U.S. Shorebird Conservation Plan Objectives

- Maintain current estimated population of 13,200 birds.

NMPIF Objectives

- Develop and carry out a monitoring program to adequately assess status and trends of Snowy Plover populations in New Mexico.
- Maintain current populations and habitat at Bitter Lakes NWR, Holloman AFB, and the Laguna Grande area.
- Encourage populations at other alkali lake areas, possibly the Laguna del Perro area, Grulla NWR, Dry Lake, and other suitable saline lakes and reservoirs in eastern New Mexico.
- Maintain 250-300 breeding pairs in the state.

Sources of Information

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Smith, J., and K. Johnson. 2004. Wetland bird nesting at Lake Holloman Wetland Complex Area, 2003. NHNM Publication No. 04-GTR-61. Natural Heritage New Mexico, Albuquerque, NM.

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