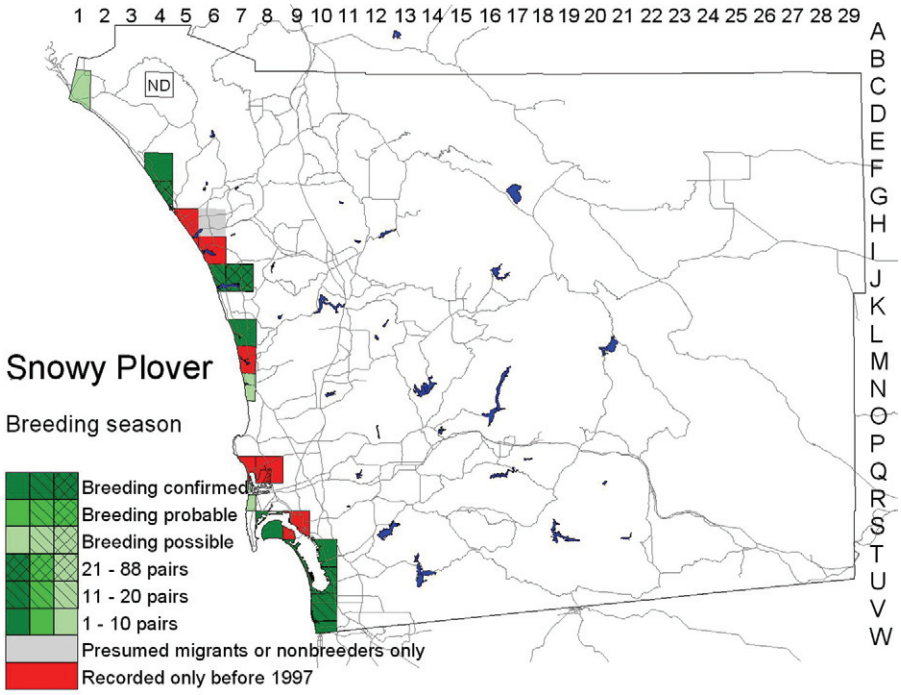
Snowy Plover *Charadrius alexandrinus*

Nesting on beaches, dunes, and salt flats, the Snowy Plover is among San Diego County's scarcest and most threatened breeding birds. In 1993 the U.S. Fish and Wildlife Service listed it as threatened along the entire Pacific coast. Thorough surveys from 1995 to 1998 put the county's breeding population between 240 and 325 individuals, most concentrated in two areas, Camp Pendleton and the Silver Strand (Powell et al. 2002). Surveys from 1978 to 1998 suggest the decline of this once common bird has continued. When not breeding the Snowy Plover is more widespread along the county's coast but it is not much more numerous, in spite of considerable migration. Human disturbance of the remaining habitat and a high level of predation mean that intensive management is needed to sustain the population.

Photo by Anthony Mercieca

Breeding distribution: Powell et al. (2002) surveyed San Diego County's coastline intensively from 1994 to 1998 and provided an exhaustive view of the Snowy Plover's distribution. Their detailed table enumerated nests rather than birds per site; because of multiple clutches per year, this figure is greater than the number of nesting pairs by 35%. Tracking of banded birds showed that, within a single breeding season, some individuals shift from site to site, although most remain at one site.

These variables considered, about half the population breeds in Camp Pendleton, with six to eight nests per year at the mouths of Aliso and French creeks (F4) and 67 to 88 at the Santa Margarita River mouth (G4). The high count of individual plovers was 120 at the latter site 11 June 1997 (B. L. Peterson). At Batiquitos Lagoon (J6/J7), the plovers nest at both the east and west ends on sandy fills installed to provide nesting habitat for the Least Tern,



as part of a lagoon-enhancement project. The number of nests at Batiquitos Lagoon 1995–98 varied from 15 to 40. At San Elijo Lagoon (L7), as a result of variable water levels, the plover nests only intermittently, with five nests in 1994, none for the next four years, and one in 1999 (R. T. Patton). Mariner's Point in Mission Bay (R7) hosted one unsuccessful pair in 1995 and none since.

The Silver Strand (T9) is the plover's other main breeding site in San Diego County, with 17 to 38 nests in the Naval Amphibious Base (both bay and ocean shores) and 4 to 10 at Silver Strand State Beach. Zero to two nests per year were found at the Naval Radio Station at the south end of the strand (U10/V10). Four Snowy Plovers at North Island (S8) 26 May 2000 included a fledgling (R. T. Patton). Within San Diego Bay, Powell et al. (2002) found 2 to 13 nests per year at the D Street fill in the Sweetwater River estuary (T10) and zero to four at the salt works (U10/V10). One pair nested at the D Street fill in 1999, another at the Chula Vista Wildlife Reserve in 1998 (R. T. Patton). Around the Tijuana River mouth (V10/W10) the plovers nest on both the north and south sides, with 11 to 17 nests 1995–98 (Powell et al. 2002) and 12 in 2001 (R. T. Patton).

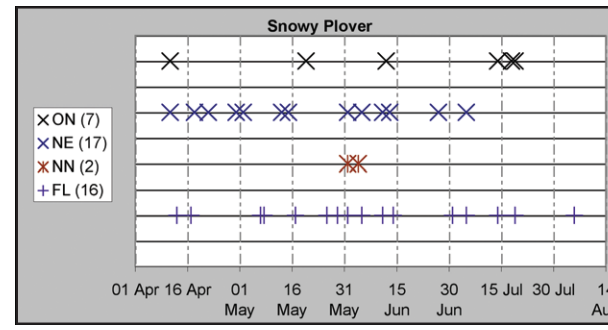
In 2002 and 2003 the county's population was slightly less than the 240–325 found 1995–98, with 102 estimated pairs (323 nests) in 2002 and 233 individuals (but only 67 nests) in 2003 (R. T. Patton).

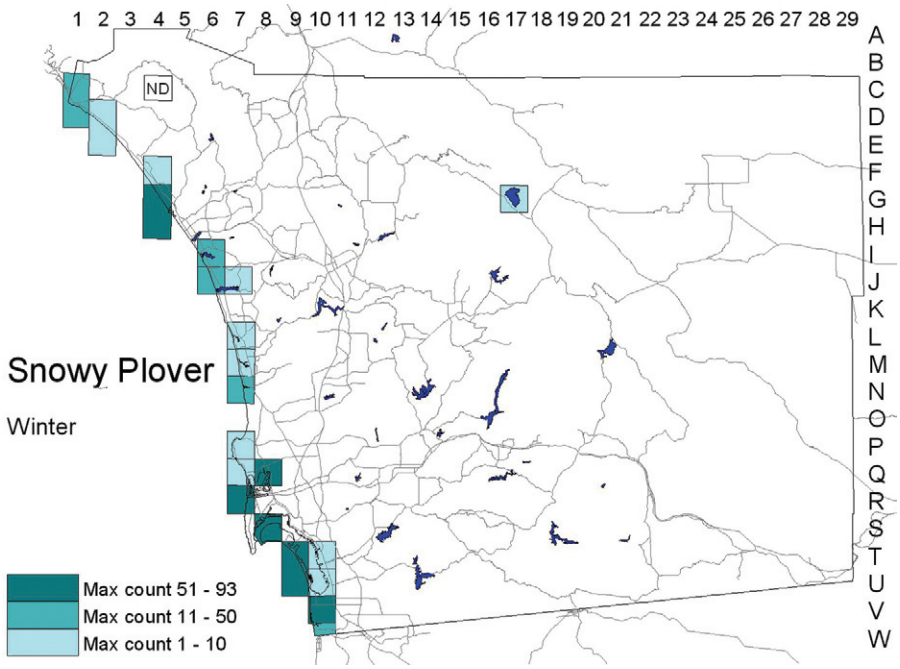
Nesting: The Snowy Plover nests in a shallow scrape in sand or dried mud, variably lined with pebbles, bits of shell, or bits of vegetation. Powell et al. (2002) charted the species' breeding season on the basis of 801 nests. Their earliest nest was 10 March; egg laying peaked in late May and ended in late July. Hatching begins in the latter half of April, peaks in the latter half of June, and ends in the latter half of August. Even successful females may lay up to three clutches in a breeding season, helped along by their habit of leaving the chicks with the male while they start a new nest with another male (Page et al. 1995).

Migration: The Snowy Plover is highly mobile: even during the breeding season banded birds have moved as far as 500 miles along the California coast between successive broods (Stenzel et al. 1994). A few birds are seen at places where they do not nest even near the peak of egg laying (up to four at Los Peñasquitos Lagoon, N7, 27 April 1999, M. B. Stowe). Migrants away from nesting sites become more numerous by August (15 at San Onofre State Beach, C1, 6 August 1999, P. A. Ginsburg). Snowy Plovers banded as far north as Santa Cruz County have been seen wintering in San Diego; birds banded in San Diego County have been seen north to San Luis Obispo County, west to San Clemente Island, and south to Scammon's Lagoon in Baja California (Powell et al. 2002). Each year, however, 15–27% of plovers banded by Powell et al. wintered near their nesting sites.

Inland in San Diego County, the Snowy Plover is rare, recorded only at lakes Henshaw (G17; one on 5 November 1978, AB 33:213, 1979) and Hodges (K10/K11; noted once in spring, 11 May 1985, and sporadically in fall from 7 July [2 in 1982] to 2 October [1 in 1982] K. L. Weaver). Exchange of birds between the coast and inland sites is regular, however (Page et al. 1995).

Winter: Snowy Plovers winter widely along San Diego County's coast, using not only their nesting sites but also several beaches and estuaries where they do not nest. During the atlas period our winter counts ranged up to 90 at the Tijuana River mouth 15 December 2001 (R. B. Riggan), 70 along the Silver Strand 19 December 1998 (N. Osborn), 90 at North Island 11 January 2002 (R. T. Patton), 52 in northeastern Mission Bay (Q8) 7 December 1998 (J. C. Worley), and 34 at San Onofre State Beach 28 January 2001 (J. M. and B. Hargrove). Powell et al. (2002) reported up to 177 at the Sweetwater River





mouth but on occasion found zero birds at almost every site—flocks sometimes forage on one beach, then rest on another (B. L. Peterson). Powell et al. (2002) estimated the county's winter population at 227–367 individuals. A cooperative census the length of San Diego County's coast 10–13 January 2001 yielded 390; another 8–11 January 2003 yielded 547. The most significant increases were in the north county, where projects to replenish beach sand have augmented the plover's habitat (R. T. Patton).

The single winter record inland is of one at Lake Henshaw 21 December 1998 (S. J. Montgomery).

Conservation: Stephens (1919a) called the Snowy Plover "abundant" in San Diego County. In 1978, Page and Stenzel (1981) censused 257 individuals in the county; in 1989, Page et al. (1991), repeating the survey, censused only 149. The higher numbers found by Powell et al. (2002) are not comparable with the results of the earlier surveys because the more recent study was much more intensive and covered areas missed by the earlier ones. The plovers have abandoned Agua Hedionda Lagoon (I6), site of 27 pairs in 1978, and become sporadic at San Elijo Lagoon, site of 12 pairs in 1978. The birds have concentrated at the Santa Margarita River mouth and the Naval Amphibious Base, perhaps because predators are controlled at these places, under a program designed to protect nesting Least Terns. Although the endangered birds nesting on these military lands are monitored and managed intensively, changes in military policy toward endangered species—already announced—could change the plover's status quickly. The effort to restore Batiquitos Lagoon, by establishing tidal flow and providing nesting habitat, attracted plovers (Powell et al. 2002), though their nesting success there was low (Powell and Collier 2000).

At many sites, disturbance and nest predation are constant problems. The plover's productivity in San Diego County is less than in coastal northern California (Powell et al. 2002). The trend has been for the species to disappear from sites accessible to the public, like Agua Hedionda Lagoon and the Tijuana River estuary. Development surrounding almost all sites concentrates predators there, leading to further conflicts. The plover's only defenses are camouflage and renesting after losing a clutch. All ground-nesting birds retreat from urbanization, and in San Diego County none has retreated more than the Snowy Plover.

Taxonomy: The subspecies of the Snowy Plover in North America is *C. a. nivosus* (Cassin, 1858).