

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Charadrius alexandrinus nivosus*

COMMON NAME: Western Snowy Plover

SYNONYMS: *Aegialitis nivosus* Cassin

FAMILY: *Charadriidae*

AUTHOR, PLACE OF PUBLICATION: *Charadrius alexandrinus nivosus* Cassin, in Baird, Cassin, and Lawrence, Rep. Expl. And Surv. R. R. Pac., vol. 9, 1858, pp. xlvi, 696. *C. alexandrinus* Linnaeus, Syst. Nat., ed. 10, vol. 1, 1758, p. 150. (Aegypti=Egypt).

TYPE LOCALITY: Presidio [now within San Francisco], California.

TYPE SPECIMEN:

TAXONOMIC UNIQUENESS: Three subspecies of *C. alexandrinus* exist in the Americas; *C. a. occidentalis* (resident population on west coast of South America); *C. a. tenuirostris* (breeding birds on Gulf Coast [east of LA], Bahama I., north coast of Yucatán Peninsula, Greater and Lesser Antilles, and islands off north coast of Venezuela), and *C. a. nivosus* (breeding birds elsewhere in U.S. and Mexico). Only *C. a. nivosus* occurs in Arizona.

DESCRIPTION: A small sandpiper-like shorebird between 15.0 and 16.5 cm (5.9-6.5 in) in length; wingspan 43.2 cm (17 in) and weight between 1.2-2 oz (34-57 g). Light gray-brown upperparts, a dark patch on either side of the breast, and a white forehead with white extending along side of head directly over eyes like eyebrows. Has dark patched at ear coverts. During breeding has a black bar across forehead and the ear coverts and breast patches darken. Gulf coast breeders are paler than other parts of its range. They have a long thin black bill and long slate gray to blackish colored legs. They appear front-heavy when standing.

AIDS TO IDENTIFICATION: Can be distinguished from other plovers by its small size, pale brown upper parts, dark patches either side of breasts, and gray legs. Females and juveniles resemble Piping Plover (*C. melodus*); Snowy Plover has a thinner bill and darker legs (National Geographic, 1999). Piping Plover is similarly pale above, but is larger, has orange legs, and in flight shows a complete white band across upper-tail coverts; in summer its bill has a orange base (Page, Warriner, and Paton, 1995).

ILLUSTRATIONS:

Color photo (Page, 1995)

Color Photo (eNature web site; www.eNature.com)

Color Photos (Birdphotography web site; www.birdphotography.com)

Color drawing (Peterson, 1990: p. 125)

Color drawing (National Geographic, 1999: p. 155)

Color drawings (Sibley, 2000: p. 165)

TOTAL RANGE: Moderately widespread with spotty distribution. Breeding occurs along the Pacific coast north to Washington. They are most numerous south of San Francisco Bay to Oaxaca, Mexico. Occurs locally but in large numbers inland, from Oregon and California (especially in the San Joaquin Valley), the Mojave Desert and Salton Sea regions, east to Kansas and Texas, and south to southeastern California, southern Arizona, southern New Mexico, and north-central Texas. Large concentration found around the Great Salt Lake, Utah. Non-breeding populations occur on islands of and along the Pacific Coast, from Oregon south to Guatemala; and in the Gulf of Mexico from southern Texas to Mississippi.

RANGE WITHIN ARIZONA: Breeds irregularly when conditions are appropriate. Breeding sites are limited to several man made and alkali ponds near Willcox in Cochise County and the ephemeral Painted Rock Reservoir in Maricopa County. Winters casually along the lower Colorado and Gila rivers, and as far north as Phoenix and Prescott. Migrates throughout the state.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Avid walkers and runners, the species uses this locomotion technique in feeding, courtship, agonistic interactions, nest exchange, retreat from nest when approached and most activities associated with care of young. Will fly when they or their chicks are directly threatened. Adults will use distraction techniques to protect chicks, and signal them with calls to crouch and remain still, at times of danger. They can swim short distance across ponds, and slow-flowing water. Their lifespan is about 3-4 years. Gregarious in winter, forming loose roosting flocks of up to 300 birds; also forages in loose flocks. Voice is a musical whistle; *pe-wee-ah* or *o-wee-ah* (Peterson, 1990). National Geographic (1999), reports call to include a low *krut* and a soft, whistled *ku-wheet*. Sibley (2000), reports "flight call *koorWIJ*; also rather hard *quip* or slightly rough *krip* or *quirr*. The display song (from ground) is a repeated whistled *tuEEoo*."

Suspected or known predators on adults include Merlin (*Falco columbarius*), Peregrine Falcon (*F. peregrinus*), Prairie Falcon (*F. mexicanus*), Northern Harrier (*Circus cyaneus*), feral cat (*Felis domesticus*), and red fox (*Vulpes vulpes*). Predators of chicks may include: Loggerhead shrike (*Lanius ludovicianus*), Common Raven (*Corvus corax*), California Gull (*Larus californicus*), American Kestrel (*F. sparverius*), Northern Harrier, Great Blue Heron (*Ardea herodias*), crows (*Corvus* spp.), Cattle Egret (*Bubulcus ibis*), red fox, opossum

(*Didelphis marsupialis*), and ghost crab (*Ocypode quadrata*). Predation on eggs may occur by Common Raven, American Crow, California Gull, Great Blue Heron, Coyote (*Canis latrans*), red fox, gray fox (*Urocyon cinereoargenteus*), striped skunk (*Mephitis mephitis*), spotted skunk (*Spilogale putorius*), raccoon (*Procyon lotor*), opossum, and ghost crab. (Page, Warriner, and Page, 1995). Although adults usually run from nests when predators approach, they fly when surprised.

REPRODUCTION: Species is polyandrous and polygynous (more than one mate concurrently). Nesting occurs in depressions scrapped into flat open areas with sandy or saline substrates. Nests range from about 5.0-12.5 cm (2.0-4.8 in) long by about 4.5-12.0 cm (1.8-4.7 in) wide. They are from 0.5-3.0 cm (0.2-1.2 in) deep and lined with debris such as shell fragments, fish bones, mud ships, and vegetation. They are often located near some conspicuous feature like driftwood, a stone or tumbleweed. Eggs are oval shaped, about 3.1cm (1.2 in) long, with a buff background color with small spots and scrawls of mostly dark brown and black. Average clutch size is 3, but ranges from 2 to 6. Incubation last for about 24 days. One to multiple broods per season; affected by length of breeding season, parental roles, and rates of clutch loss. Nest tended by both parents, brood may be tended by both or only male adult. Young leave nest within hours of hatching and fly at 22-31 days. Adults do not feed the chicks but do lead them to suitable feeding areas.

FOOD HABITS: Visual feeders, consuming insects, small crustaceans, and other minute invertebrates picked from surface of ground using a run-stop-peck technique. In the past, they have been observed charging dense aggregations of flies with mouth snapping. Will pick prey off low growing plants. Coastal feeding areas consist of the inter-tidal zone of beaches and dry sandy areas above the tidal zone. Inland populations feed on salt pans, spoil sites and along the edges of salt ponds, salt marshes, and lagoons. Inland feeding is usually done in very shallow (1-2 cm) water or over wet mud or sand. Some foraging also occurs on dry flats and playas.

HABITAT: In North America, the species inhabits beaches, lagoons, and salt-evaporation ponds on coasts and barren sparsely vegetated salt flats and braided river channels inland. Coastal beaches, and shores of salt ponds and alkaline lakes. In Arizona, Snowy plovers may occasionally nest along temporary lakes on sandy playas.

ELEVATION: For the species, elevation ranges from sea-level to 10,000 ft (3048 m) inland (Colorado). In AZ, the subspecies have been observed at 580 ft (177 m).

PLANT COMMUNITY:

POPULATION TRENDS: Only about 21,000 individuals inhabit the United States; numbers in the rest of North America are largely undocumented but probably small (Page, Warriner and Paton, 1995). Their breeding areas are becoming increasingly fragmented. Large range in the western U.S. and Mexico; populations are scattered and declining in many areas, due to habitat loss/degradation, disturbance of nesting areas, and/or impacts of non-native

predators (NatureServe, 2001). Uncommon and declining on the Gulf Coast (National Geographic, 1999).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996); LT in CA, OR, WA, Mexico (within 50 mi of Pacific coast).
[3C USDI, FWS 1994]
[C2 USDI, FWS 1985, 1989, 1991]

STATE STATUS: WSC (AGFD WSCA in prep)
[Species Candidate AGFD, TNW 1988]

OTHER STATUS: Not Forest Service Sensitive (USDA, FS Region 3 2007)
[Forest Service Sensitive (USDA, FS Region 3 1999)]

MANAGEMENT FACTORS: Species has been significantly impacted by the expansion of human activity into nesting areas. In Arizona also impacted by urban encroachment, ground water withdrawal, and off highway vehicle activities.

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Better information is needed on population size and trends, threats to habitats, and reproductive success. Further studies are also needed on survival rates (particularly for the year following birth), juvenile dispersal, levels of reproductive success required for population stability, population sources and sinks, and the limitations, if any, of food availability on breeding success. Applied research on methods to restore, enhance, and create suitable habitat across the species' range would also be valuable. Additional studies also needed to clarify the distinctiveness of North American subpopulations. (Page, Warriner, and Paton, 1995).

LAND MANAGEMENT/OWNERSHIP: Private.

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

Revised: 2002-11-27 (RHB)

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