

California Wildlife Habitat Relationships System
California Department of Fish and Wildlife
California Interagency Wildlife Task Group

SANDERLING

Calidris alba

Family: SCOLOPACIDAE
B181

Order: CHARADRIIFORMES

Class: AVES

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DISTRIBUTION, ABUNDANCE, AND SEASONALITY

Common, and locally abundant, visitor to California in nonbreeding season (Cogswell 1977, Page et al. 1979, Garrett and Dunn 1981). Frequents outer-coast sandy beaches of marine habitats the length of the state, and Channel Islands. Less commonly, occurs on rocky, intertidal marine and estuarine areas. Uncommon to rare migrant inland, except fairly common at Salton Sea in migration, and winters in small numbers (Garrett and Dunn 1981). Inhabits sand and gravel substrates of lacustrine and riverine habitats. In central California, peak population occurs from late August through mid-October, in fall migration (Page et al. 1979).

SPECIFIC HABITAT REQUIREMENTS

Feeding: Typical foraging habitats are wash zones on sandy beaches. Follows retreating waves, probing sand for small invertebrates. Generally forages in small flocks of 5-100. Prey captured by probing in wet sand; closely spaced probe-holes often indicate a foraging area. Beach wrack (marine algae, driftwood, etc.) also may support prey. The small, sandy beach crustaceans *Excirrolaina linguifrons* and sand crabs (*Emerita analoga*) are major prey in central California (Myers et al. 1979, Connors et al. 1981). Additional prey include amphipods, small mollusks, marine worms, and adult and larval flies (Bent 1927).

Cover: In marine habitats, requires high ground for roosting during high tide.

Reproduction: Has a circumpolar breeding distribution, nesting at high latitudes in tundra habitats. Does not breed in California. Most nests are on rocky, barren tundra, well-drained ridges, or level alluvial plains. Generally nests less than 61 m (200 ft) above sea level. Nest is a shallow scrape in the ground, often in or near clumps of low vegetation. Nest may be lined with dry leaves (Johnsgard 1981).

Water: No additional data found.

Pattern: Nests in tundra at high latitudes; in California winters mostly on outer-coast sandy beaches.

SPECIES LIFE HISTORY

Activity Patterns: Yearlong, circadian activity. In winter, makes periodic daily movements between intertidal feeding areas and high tide roosts, following tidal conditions. Also may feed at night.

Seasonal Movements/Migration: Common migrant and winter resident from August through May, but most common from September through April. Begins arriving in mid-July, but the main fall passage usually does not occur until August. Adults usually return about 1

mo before immatures. A high proportion (approximately 70%) of adults returns to wintering area used in previous years (Myers et al. 1979). Although mostly sedentary in winter, in early fall many wander along coastal areas spanning 40 km (24 mi) (Myers 1980). Very small numbers of nonbreeders sometimes remain in California through summer (McCaskie et al. 1979).

Home Range: In Canada, breeding density varied from 1 or 2 to 17 pairs/256 ha (1 mi²). Normal breeding density was 38 pairs/256 ha (1 mi²) (Parmelee 1970). During most winters in central California, did not travel more than several km along the coast. Winter flocks, however, make regular daily movements following tidal conditions and the foraging profitability of various habitats. At Bodega Bay, flew 0.2 to 2.0 km (0.12 to 1.2 mi) (Myers 1980, Connors et al. 1981).

Territory: Breeding territory about 400 m (1300 ft) in diameter (Parmelee 1970). In winter, individuals may switch between territorial and nonterritorial behavior in response to prey density, and size of intruding, nonterritorial conspecifics. At Bodega Bay, linear feeding territory varied from 1090 m (33-297 ft), and averaged 41 m (135 ft) in length (Myers et al. 1979). Although some individuals defended same territories for several months, most were defended for 1-20 days. Presence of avian predators also may influence expression of territorial behavior on wintering grounds (Myers 1980).

Reproduction: Arrives on the breeding grounds in late May or early June, and by early August most have departed. Monogamous, solitary nester. Average clutch size is 4 eggs. A female sometimes lays 2 clutches in rapid succession, each being raised by a parent (Johnsgard 1981). Incubation 23-24 days. Young precocial and leave nest within hours of hatching. Attended by one or both parents, and fly at about 17 days (Parmelee 1970).

Niche: Annual adult survivorship estimated at 56%, and that for juvenile at 38% (Boyd 1962). At Bodega Bay, return rates were 72% for adult, and 50% for juvenile, between 1976 and 1978 (Myers 1980). On Bolinas Lagoon, raptors removed approximately 13.5% of the population during a winter season (Page and Whitacre 1975). The merlin is a major predator in central California (Page and Whitacre 1975, Myers 1980).

REFERENCES

- Bent, A. C. 1927. Life histories of North American shorebirds. Part 1. U.S. Natl. Mus. Bull. 142. 420pp.
- Boyd, H. 1962. Mortality and fertility of European Charadrii. *Ibis* 104:368-387.
- Cogswell, H. L. 1977. Water birds of California. Univ. California Press, Berkeley. 399pp.
- Connors, P. G., J. P. Myers, and F. A. Pitelka. 1979. Seasonal habitat use by arctic Alaskan shorebirds. Pages 101-111 in F. A. Pitelka, ed. Shorebirds in marine environments. Stud. Avian Biol. No. 2. Cooper Ornithological Society, Lawrence, KA. 261pp.
- Garrett, K., and J. Dunn. 1981. Birds of southern California. Los Angeles Audubon Soc. 408pp.
- Johnsgard, P. A. 1981. The plovers, sandpipers, and snipes of the world. Univ. Nebraska Press, Lincoln. 493pp.
- McCaskie, G., P. De Benedictis, R. Erickson, and J. Morlan. 1979. Birds of northern California, an annotated field list. 2nd ed. Golden Gate Audubon Soc., Berkeley. 84pp.
- Myers, J. P. 1980. Sanderlings (*Calidris alba*) at Bodega Bay: facts, inferences and shameless speculations. *Wader Study Group Bull.* 30:26-32.
- Myers, J. P., P. G. Connors, and F. A. Pitelka. 1979. Territory size in wintering sanderlings: the effects of prey abundance and intruder density. *Auk* 96:551-561.
- Page, G. W., L. E. Stenzel, and C. M. Wolfe. 1979. Aspects of the occurrence of shorebirds on a central California estuary. Pages 15-32 in F. A. Pitelka, ed. Shorebirds in marine environments. Studies in Avian Biol. No. 2. Cooper Ornithol. Soc. Lawrence, KA. 261pp.
- Page, G. W., and D. F. Whitacre. 1975. Raptor predation on wintering shorebirds. *Condor* 77:73-78.
- Parmelee, D. F. 1970. Breeding behavior of the sanderling in the Canadian high arctic.

Living Bird 9:97-146.. Shorebirds in marine environments. Studies in Avian Biol. No. 2. Cooper Ornithol. Soc. Lawrence, KA. 261pp.

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