

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

MARBLED MURRELET

Brachyramphus marmoratus

Family: ALCIDAE

Order: CHARADRIIFORMES

Class: AVES

B240

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DISTRIBUTION, ABUNDANCE, AND SEASONALITY

Occurs year-round in marine subtidal and pelagic habitats from the Oregon border to Point Sal, Santa Barbara Co. (Sowls et al. 1980). In breeding season, locally fairly common, but groups of more than 50 unusual (Evens et al. 1982); uncommon and more dispersed balance of year (Cogswell 1977, McCaskie et al. 1979). In nonbreeding season, often occurs in pelagic habitats (Sealy 1972). The estimated 2000 breeding individuals in California largely concentrated on coastal waters off Del Norte and Humboldt cos. (about 75% of the population), and in lesser numbers off San Mateo and Santa Cruz cos. (about 14%) (Sowls et al. 1980). In the nonbreeding season, has been recorded as far south as Imperial Beach, San Diego Co. (McCaskie 1980). Partial to coastlines with stands of mature redwood and Douglas-fir (Remsen 1978); uses these trees for nesting and probably roosting (Sealy 1972). In breeding season, may be seen regularly 6-8 km (4-5 mi) inland in these coastal coniferous forests (Cogswell 1977). Also noted in such habitats in winter (Sowls et al. 1980). Based on nocturnal calling, several locations identified tentatively as breeding grounds. These include: Jedediah Smith Redwoods State Park in Del Norte Co., Prairie Creek Redwoods State Park in Del Norte and Humboldt cos., Grizzly Creek State Park in Humboldt Co., 20 mi inland in Humboldt Co. (Remsen and Gaines 1973), Russian Gulch State Park in Mendocino Co., Portola State Park and Butano Creek in San Mateo Co., and Waddell Creek and Big Basin Redwoods State Park in Santa Cruz Co. (Remsen 1978). Has been found dead at Mono Lake (McCaskie et al. 1988).

SPECIFIC HABITAT REQUIREMENTS

Feeding: In summer, forages close to shore (within 500 m 1640 ft) in shallow water, usually less than 30 m (95 ft) deep (Sealy 1972). In nonbreeding season, often forages farther from shore. Forages by diving and pursuing small fish, the main food (Sealy 1972, 1975b). Sealy (1972) found the diet in British Columbia largely sand lance. Also ate sea perch, as well as fish in the families Osmeridae, Scorpaenidae, and Stichaeidae. Invertebrates, including decapods and cephalopods, comprised a minor part of the diet (Sealy 1972). Parents feed nestlings small fish (Sealy 1972).

Cover: When not feeding, probably spends day on surface of shallow coastal waters close to shore. Apparently roosts in redwood and Douglas-fir forests (Sealy 1972).

Reproduction: The only California alcid to breed inland (Sowls et al. 1980). Only 4 nests have been found, 1 in California (Binford et al. 1975, Singer and Verardo 1975). This nest was in a Douglas-fir 45 m (145 ft) above ground in Big Basin Redwoods State Park (Binford et al. 1975). Apparently requires dense, mature forests of redwood and Douglas-fir for breeding (Cogswell 1977, Remsen 1978). In California, probably prefers to nest in tall trees; nest made of moss and lichen.

Water: In addition to requiring shallow, coastal waters for feeding, may need a stream

near the nest to float fledging young down to the coast (Kischinsky 1965, Sealy 1972).

Pattern: Breeders require mature, coastal coniferous forest for nesting and nearby coastal waters for feeding.

SPECIES LIFE HISTORY

Activity Patterns: In breeding season, visits inland nest only at night. Leaves at dawn and feeds in daylight (Sealy 1972). May visit inland nesting habitat in nonbreeding season also (McCaskie et al. 1988).

Seasonal Movements/Migration: Size of summer and winter ranges apparently similar, but individuals tend to be more dispersed in winter, and may be found more often in pelagic habitat (Gabrielson and Lincoln 1959). May disperse southward after breeding (Cogswell 1977), but rarely goes farther south than Point Sal in Santa Barbara Co.

Home Range: In summer, individuals or pairs commonly seen 1-2 km (0.6 to 1.2 mi) off the coast, and typically 6-8 km (4-5 mi) inland in coniferous forests (Cogswell 1977). Has been sighted up to 45 km (28 mi) inland (Marcot 1979).

Territory: No data found.

Reproduction: Information based largely on evidence from adults collected in breeding season, discovery of flightless young, and young recently arrived at sea. Lays eggs from mid-May to mid-June, incubates from mid-June to mid-August, and fledges young from early July through early September (Sowls et al. 1980). Monogamous, and probably a solitary nester. Clutch size probably 1 egg, and probably produces only 1 clutch each year (Sealy 1972, 1974, 1975a). Harris (1971) reported 2 young dropping from a tree felled by loggers on Vancouver Island, indicating that there were either 2 nests in 1 tree, or 2 young in 1 nest. Incubation estimated to be 30 days, with incubation shifts of 24 hr shared equally by parents (Sealy 1972). Newly hatched chicks probably are semiprecocial; remain in nest approximately 3 wk (Sealy 1972, Sowls et al. 1980). How young travel from inland nests to ocean unknown; not demonstrated that young capable of flight. At Big Basin State Park, juveniles were found on the ground 7 times between 1959 and 1977 (Erickson and Morlan 1978). Young may walk to nearest stream and float to coast (Sealy 1972, Kischinsky 1965). Young not sexually mature 1st year (Sealy 1972).

Niche: Predators include peregrine falcons (Beebe 1960). Habitat loss from logging of old-growth redwood and Douglas-fir stands may be important (Remsen 1978). Also vulnerable to contamination from oil spills along coast (Sowls et al. 1980).

REFERENCES

- Beebe, F. L. 1960. The marine predators of the northwest Pacific. *Condor* 62:145-189.
- Binford, L. C., B. G. Elliott, and S. W. Singer. 1975. Discovery of the down young of the marbled murrelet. *Wilson Bull.* 87:303-319.
- Cogswell, H. L. 1977. *Water birds of California*. Univ. California Press, Berkeley. 399pp.
- Day, R. H., K. L. Oakley, and D. R. Barnard. 1983. Nest sites and eggs of Kittlitz's and marbled murrelets. *Condor* 85:265-273.
- Erickson, D., and J. Morlan. 1978. Middle Pacific Coast Region. *Amer. Birds* 32:250-255.
- Evens, J. G., R. A. Erickson, and K. V. Rosenberg. 1983. Middle Pacific Coast Region, *Am. Birds* 37:907-911.
- Gabrielson, I. N., and F. C. Lincoln. 1959. *Birds of Alaska*. Stackpole Co., Harrisburg, PA., and Wildl. Manage. Inst., Wash. DC. 922pp.
- Harris, R. D. 1971. Further evidence of tree nesting in the marbled murrelet. *Can. Field-Nat.* 85:67-68.
- Harrison, P. 1983. *Seabirds: an identification guide*. Houghton Mifflin Co., Boston MA. 448pp.
- Kiff, L. F. 1981. Eggs of the marbled murrelet. *Wilson Bull.* 93:400-403.

- Kischinsky, A. A. 1965. On the biology of the short-billed and long billed murrelets (*Brachyramphus brevirostre* and *B. marmoratum*). *Novosti Ornithol. Conf.* Alma-ata:169.
- Marcot, B. G., ed. 1979. California wildlife/habitat relationships program: North Coast/Cascades Zone. Vol. II. Bird narratives. U.S. Dep. Agric., For. Serv., Six Rivers Nat. For., Eureka. 573pp.
- McCaskie, G. 1980. Southern Pacific Coast regional report. *Am. Birds* 34:307.
- 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.
- McCaskie, G., P. De Benedictis, R. Erickson, and J. Morlan. 1988. Birds of northern California, an annotated field list. 2nd ed. Golden Gate Audubon Soc., Berkeley. Reprinted with suppl. 108pp.
- Remsen, J. V., Jr. 1978. Bird species of special concern in California. Calif. Dept. of Fish and Game, Sacramento. Wildl. Manage. Admin. Rep. No. 78-1. 54pp.
- Remsen, J.V., Jr., D. Gaines. 1973. Middle Pacific Coast Region. *Amer. Birds* 27:813-818.
- Sealy, S. G. 1972. Adaptive differences in breeding biology in the marine bird family Alcidae. Ph.D. Thesis, Univ. Michigan, Ann Arbor. 283pp.
- Sealy, S. G. 1974. Breeding phenology and clutch size in the marbled murrelet. *Auk* 91:10-23.
- Sealy, S. G. 1975a. Aspects of the breeding biology of the marbled murrelet in British Columbia. *Bird-Banding* 46:141-154.
- Sealy, S. G. 1975b. Feeding ecology of the ancient and marbled murrelets near Langura Island, British Columbia. *Can. J. Zool.* 53:418-433.
- Singer, S. W., and D. R. Verardo. 1975. The murrelets nest discovered. *Pac. Discovery* 28(4):18-21.
- Sowls, A. L., A. R. DeGange, J. W. Nelson, and G. S. Lester. 1980. Catalog of California seabird colonies. U.S. Dep. Inter., Fish and Wildl. Serv., Wash. DC. Biol. Serv. Program FWS/OBS-80/37. 371pp.