

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

SPOTTED OWL

Strix occidentalis

Family: STRIGIDAE
B270

Order: STRIGIFORMES

Class: AVES

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DISTRIBUTION, ABUNDANCE, AND SEASONALITY

An uncommon, permanent resident in suitable habitat. In northern California, resides in dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir habitats, from sea level up to approximately 2300 m (0-7600 ft). In southern California, nearly always associated with oak and oak-conifer habitats (Garrett and Dunn 1981). Breeding range extends west of the Cascade Range through the North Coast Ranges, the Sierra Nevada, and in more localized areas of the Transverse and Peninsular Ranges. May move downslope in winter along the eastern and western slopes of the Sierra Nevada, and in other areas.

SPECIFIC HABITAT REQUIREMENTS

Feeding: Feeds in forest habitats upon a variety of small mammals, including flying squirrels, woodrats, mice and voles, and a few rabbits. Also eats small birds, bats, and large arthropods. Usually searches from a perch and swoops or pounces on prey in vegetation or on the ground. May cache excess food.

Cover: Uses dense, multi-layered canopy cover for roost seclusion. Roost selection appears to be related closely to thermoregulatory needs; intolerant of high temperatures. Roosts in dense overhead canopy on north-facing slopes in summer. In winter, roosts in oak habitats. In northern regions of the state, daytime roosts averaged 165 m (549 ft) from water; in southern regions, daytime roosts averaged only 51 m (173 ft) from water (Barrows and Barrows 1978).

Reproduction: Usually nests in tree or snag cavity, or in broken top of large tree. Less frequently nests in large mistletoe clump, abandoned raptor or raven nest, in cave or crevice, on cliff or ground (Call 1978). Mature, multi-layered forest stands are required for breeding (Remsen 1978). Nest usually placed 9-55 m (30-180 ft) above the ground.

Water: Probably requires a permanent water source. May reduce heat stress by bathing (Barrows and Barrows 1978, Barrows 1981). Drinks freely in captivity.

Pattern: Requires blocks of 40-240 ha (100-600 ac) of mature forest with permanent water and suitable nesting trees and snags (Forsman 1976). In northern California, apparently prefers narrow, steep-sided canyons with north-facing slopes.

SPECIES LIFE HISTORY

Activity Patterns: Yearlong, nocturnal activity (Forsman 1976).

Seasonal Movements/Migration: Not migratory, although some individuals may move downslope in winter.

Home Range: Forsman et al. (1977) found home ranges in mature Douglas-fir/hemlock forests in Oregon of 120-240 ha (300-600 ac), with a mean of 180 ha (450 ac). Gould reported similar home range size in the Sierra Nevada. Individuals spaced 1.6 to 3.2 km (1-2 mi) apart in suitable habitat (Marshall 1942, Gould 1974). Home range size largest during non breeding season (Zabel et al. 1992).

Territory: Gould (1974) found that territory in conifer forests in the Sierra Nevada varied from 40-138 ha (100-340 ac), with a mean of 93 ha (230 ac). Very few observations of territorial behavior reported, in part because of wide spacing of pairs and inconspicuous behavior.

Reproduction: Breeds from early March through June, with peak in April and May. One brood per yr. Clutch size 1-4, usually 2. Female incubates and broods young; male feeds female and young. May not be mature sexually until 3 yr. Pair may use same breeding site for 5-10 yr, but may not breed every yr (Forsman 1976).

Niche: Great horned owls and goshawks are potential predators of young (Forsman 1976). Invading barred owls are known to displace spotted owls from their territories (Hamer 1988). Requires mature forest stands with large trees and snags; very sensitive to habitat destruction and fragmentation (Gould 1974, Forsman 1976). Declared Federal Threatened in June 1990.

REFERENCES

- Barrows, C. W. 1981. Roost selection by spotted owls: an adaptation to heat stress. *Condor* 83:302-309.
- Barrows, C. W., and K. Barrows. 1978. Roost characteristics and behavioral thermoregulation in the spotted owl. *West. Birds* 9:1-8.
- Bent, A. C. 1938. Life histories of North American birds of prey. Part 2. U.S. Natl. Mus. Bull. 170. 482pp.
- Call, M. W. 1978. Nesting habits and survey techniques for common western raptors. U. S. Dep. Inter., Bur. Land Manage., Portland, OR. Tech. Note No. 316. 115pp.
- Ehrlich, P. R., D. S. Dobkin, and D. Wheye. 1988. *The birder's handbook*. Simon and Schuster, New York. 785pp.
- Forsman, E. D. 1976. A preliminary investigation of the spotted owl in Oregon. M.S. Thesis, Oregon State Univ., Corvallis. 127pp.
- Forsman, E. D., E. C. Meslow, and M. J. Strub. 1977. Spotted owl abundance in young versus old-growth forests. *Oregon. Wildl. Soc. Bull.* 5:43-47.
- Hamer, T. E. 1988. Home range size of northern barred owl and northern spotted owl in western Washington. Masters' thesis, West. Washington University, Bellingham, WA.
- Garcia, E. R. 1979. A survey of the spotted owl in southeastern Washington. Pages 18-26 in P. P. Schaeffer and S. M. Ehlers, eds. *Procs. Sympos. on Owls of the West*. Natl. Audubon Soc., Tiburon, CA. 97pp.
- Garrett, K., and J. Dunn. 1981. *Birds of southern California*. Los Angeles Audubon Soc. 408pp.
- Grinnell, J., and A. H. Miller. 1944. *The distribution of the birds of California*. Pac. Coast Avifauna No. 27. 608pp.
- Gould, G. I., Jr. 1974. The status of the spotted owl in California. Calif. Dep. Fish and Game, Sacramento, Admin. Rep. No. 74-6. 36pp.
- Gould, G. I., Jr. 1977. Distribution of the spotted owl in California. *West. Birds* 8:131-146.
- Jackman, S. M., and J. M. Scott. 1975. Literature review of twenty three selected forest birds of the Pacific Northwest. U.S. Dep. Agric., For. Serv., Reg. 6, Portland, OR. 382pp.
- Karalus, K. E., and A. W. Eckert. 1974. *The owls of North America*. Doubleday Co., Garden City, NY. 278pp.
- Marcot, B. G., and J. Gardetto. 1980. Status of the spotted owl in Six Rivers National Forest, California. *West. Birds* 11:79-87.
- Marshall, J. T., Jr. 1942. Food and habitat of the spotted owl. *Condor* 44:66-67.

- Remsen, J. V., Jr. 1978. Bird species of special concern in California. Calif. Dep. Fish and Game, Sacramento. Wildl. Manage. Admin. Rep. No. 78-1. 54pp.
- Zabel, C. J., G. N. Steger, K. S. McKelvey, G. P. Eberlein, B. R. Noon, and J. Verner. 1992. Home-range size and habitat use patterns of California spotted owl in Sierra Nevada. Pp. 149-164 in The California Spotted Owl: a technical assesment of its current status. (J. Verner, K. S. McKelvey, B. R. Noon, R. J. Gutierrez, G. I. Gould, Jr., and T. W. Beck, Tech. coords.). Gen. Tech. Rep. PSW-GTR-133, U.S. Forest Service, Albany, CA.

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