

## Long-eared Owl

(*Asio otus*)

### Legal Status

*Federal:* None.

*State:* Species of Special Concern.



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*Global and State Conservation Status:* G5S3: Global Rank, G5 = Secure: Common; widespread and abundant; State Rank, S3 = Vulnerable: Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

*Recovery Plan:* None.

### Species Description and Life History

The long-eared owl (*Asio otus*) is a medium-sized owl with males ranging from 35-37.5 cm (13.8-14.8 inches) and females ranging from 37-40 cm (14.6-15.7 inches) in total length (Mikkola 1983). The wingspan of the species ranges from 90-100 cm (35.4-39.4 inches) (Cramp 1985). Long-eared owls have large, round heads with conspicuous “ear” tufts (Marks *et al.* 1994). In North America, irides are golden yellow (Marks *et al.* 1994). Dorsum is a mix of black, brown, gray, buff, and white; ventral feathers are whitish-gray and buff with dark brown streaking and barring (Marks *et al.* 1994). Males are generally paler than females (Marks *et al.* 1994).

### Seasonal Patterns

In California, the long-eared owl is either an uncommon yearlong resident or uncommon winter visitor (Polite 2005). The breeding season generally extends from early March to late July (Polite 2005). Breeding long-eared owls apparently make only local movements in California, although some migration may occur (Polite 2005). However, migration is poorly understood. In northern Europe, nomadic movements in response to fluctuating prey numbers has been well documented (e.g., Hagen 1965, Lundberg 1979, Village 1981, Korpimäki and Norrdahl 1991) (Marks *et al.* 1994). Long-eared Owls are presumably a regular migrant in northern Canada, but commonly winter in breeding range throughout the United States and southern Canada (Marks *et al.* 1994). Thus, winter populations in California, including Yolo County, may be supplemented by northern migrants (Hunting 2008).

### *Reproduction*

Long-eared owls do not construct their own nests. Instead they use stick nests built in trees by other species of birds (Glue 1977, Marks 1986). Long-eared owls often use abandoned corvid and raptor nests, particularly black-billed magpie (*Pica hudsonia*), yellow-billed magpie (*Pica nuttalli*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), and Cooper's hawk (*Accipiter cooperii*) nests. Nest sites may be reused over subsequent years, but often by different individuals (Marks *et al.* 1994).

These owls normally have one brood per season but may lay a second clutch if the first is lost during incubation (Marks *et al.* 1994). First clutch of 3-8 eggs is laid in mid-March to mid-May. Eggs are typically laid in April and May and are incubated by the female for 21-28 days (Polite 2005). Males provide food for the female during the incubation period (Marks *et al.* 1994). Fifty days or less are required for nestlings to fledge (Polite 2005). Approximately 93% of eggs resulted in fledged young in Wyoming (Craighead and Craighead 1956). In southwestern Idaho, nesting success was estimated to be 40.9 percent and 54.3 percent in consecutive years ( $n = 66$  and  $46$ ), with estimates of 3.7–4.15 fledged young per nest (Marks 1986).

### *Home Range/Territory Size*

In riparian breeding habitat, home range in Wyoming varied from 34-106 ha (83-262 ac) and averaged 51 ha (134 ac) (Craighead and Craighead 1956). In Idaho, a breeding male tracked in early May was found to cover 190-220 ha (470-544 acres) per night (Hilliard *et al.* 1982). Two breeding pairs in Idaho were found to use a core area within 1 km (0.6 mile) of nests, with occasional forays up to 3 km (1.9 mile) (Craig *et al.* 1988).

Long-eared owls do not appear to defend space outside the immediate vicinity of the nest (Marks *et al.* 1994). Nest densities ranged from 0.07 to 4.2 pairs per 10 km<sup>2</sup> in southeast Idaho (Craig and Trost 1979) and southwest Idaho (Marks 1986), respectively. These owls may nest in loosely defined colonies (Polite 2005). Hunting grounds may be shared by adults from different nests (Marks *et al.* 1994).

### *Foraging Behavior and Diet*

Long-eared owls hunt mainly at night but usually begin hunting before sunset. Typical hunting behavior is a coursing back and forth gliding flight 0.2-2 m (0.7-7 feet) above the ground, occasionally hovering above prey. They will also hunt from a perch, particularly in windy conditions. Long-eared owls are extremely agile and can effectively maneuver through dense vegetation using quick twists and turns (Marks *et al.* 1994, Polite 2005).

The principal prey of long-eared owl throughout its range is *Microtus* species. Presumably, in California the diet consists mainly of meadow voles (*M. californicus*). They will also take other small rodents including deer mice (*Peromyscus californicus*),

house mice (*Mus musculus*), and harvest mice (*Reithrodontomys* spp.); as well as small reptiles, bats, and birds (Marks *et al.* 1994, Polite 2005).

#### *Predation*

Raccoons (*Procyon lotor*) and snakes are known to prey on long-eared owl nestlings (Marks 1986). Great horned owls (*Bubo virginianus*) and *Accipiter* hawks have been documented preying on young and adult long-eared owls (Bull *et al.* 1989).

### **Habitat Requirements and Ecology**

#### *Nesting*

Long-eared owls breed in mature live oak and riparian woodlands in coastal and foothill areas, but also occur in desert riparian, woodland, and oasis habitats (Garrett and Dunn 1981, Unitt 1984). Dense riparian and live oak thickets near meadow edges and nearby woodland and forest habitats are frequently inhabited (Polite 2005). They are also found in dense conifer stands at higher elevations (Polite 2005). Long-eared owls also breed in open forests (Marks *et al.* 1994). In winter, they can be found roosting in small groups in dense, thick groves of trees scattered throughout the desert region and occasionally along the coast or foothill region (Garrett and Dunn 1981, Hamilton and Willick 1996, Lehman 1994, Unitt 1984). Nesting and roosting trees and shrubs used by long-eared owls include oaks, willows, cottonwoods, conifers, and junipers (Marks *et al.* 1994).

#### *Foraging*

Long-eared owls forage in open habitats such as grasslands, deserts, and forest openings (Marks *et al.* 1994). In Yolo County, long-eared owl presumably also forages in some agricultural habitats, irrigated pastures, seasonal wetlands, and marsh habitats.

### **Species Distribution and Population Trends**

#### *Distribution*

The long-eared owl occurs from the boreal forests of the Yukon eastward to Quebec and south to southern California, southern Arizona, northern New Mexico and Texas, the central Midwest, and central Appalachia. It is also found throughout much of Eurasia and northern Africa (Johnsgard 1988). Long-eared owls are found at elevations ranging from sea level to greater than 2,000 meters (6,562 feet) (Marks *et al.* 1994).

Hunting (2008) considers the species an uncommon yearlong resident throughout California except the Central Valley, some coastal areas, and Coachella and Imperial Valleys of Southern California.

#### *Population Trends*

Hunting (2008) documents substantial declines in the numbers and range of long-eared owls in California. The species was formerly common to abundant on the coastal plain and western slopes of the Coast Ranges from at least Santa Barbara County south to San Diego but has now been nearly extirpated from those regions (Garrett and Dunn 1981, Hamilton and Willick 1996, Lehman 1994, Unitt 1984, Hunting 2008). There is no additional current information on population status or trends. Urban development and agricultural expansion are considered the primary causes of population declines in coastal southern California (Bloom 1994).

#### *Distribution and Population Trends in the Plan Area*

The long-eared owl is known as a rare winter visitor to Yolo County. CNDDDB reports no breeding or wintering occurrences of the species in the County. No other breeding records were found for this species in Yolo County or elsewhere in the Central Valley.

The Checklist of Birds of Yolo County reports long-eared owl as a rare winter visitor in the riparian habitat along the Sacramento Bypass and the riparian woodland along the railroad tracks west of River Road between Interstate 80 and Interstate 5. The species is also considered a rare winter visitor to the Yolo Basin Wildlife Area (EDAW 2007).

Recently reported winter occurrences include an individual along the Colusa Drain west of Knights Landing in December 2006 (Yolo Audubon Society 2007); two individuals along upper Putah Creek west of Winters in December 2004 (Sacramento Audubon Society 2005); and a recent sighting of a dead long-eared owl near West Pond in Davis reported by Gene Trapp on January 22, 2008 ([www.birdingonthe.net](http://www.birdingonthe.net)).

During winter, long-eared owls are expected to occur rarely in riparian woodlands throughout much of the County. The secretive nature of this species makes it difficult to detect and thus even winter records are few.

#### **Threats to the Species and Other Conservation Issues**

The primary threat to long-eared owl, particularly in California, is loss and degradation of riparian and oak woodlands as a result of urbanization and development (Zeiner *et al.* 1990). Harassment, shootings, and collision with cars can also have negative effects on local populations (Hunting 2008).

In Yolo County, most riparian and oak woodland habitats are not immediately threatened by urbanization. Some areas, such as portions of Putah Creek, are protected preserves and others such as the Sacramento Bypass are generally protected by virtue of their purpose as flood control management areas. Riparian habitats in some areas of the County, such as on the Yolo Bypass Wildlife Area, portions of Putah Creek, and the recently established Roosevelt Ranch Reserve, are being restored and may provide additional habitat for long-eared owls in the future.

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**References**

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Bloom, P.H. 1994. The biology and current status of the Long-eared Owl in coastal southern California. *Bull. So. Calif. Acad. Sci.* 93: 1-12.

Bull, E.L., M.G. Henjum, and A.L. Wright. 1989. Nesting and diet of Long-eared Owls in conifer forests, Oregon. *Condor* 91: 908-912.

Craig, T.H. and C.H. Trost. 1979. The biology and nesting density of breeding American Kestrels and Long-eared Owls on the Big Lost River, southeastern Idaho. *Wilson Bull.* 91: 50–61.

Craig, E.H., T.H. Craig and L.R. Powers. 1988. Activity patterns and home-range use of nesting Long-eared Owls. *Wilson Bull.* 100: 204–213.

Craighead, J.J., and F.C. Craighead, Jr. 1956. *Hawks, owls and wildlife*. Stackpole Books, Harrisburg, PA. 443pp.

Cramp, S. 1985. *The birds of the western Palearctic*, vol. 4. Oxford Univ. Press, Oxford.

EDAW. 2007. *Yolo Bypass Wildlife Area Land Management Plan*. Prepared for the California Department of Fish and Game, Davis CA.

Garrett, K. and J. Dunn. 1981. *Birds of southern California*. Los Angeles, CA: Los Angeles Audubon Society.

Glue, D.E. 1977. Breeding biology of Long-eared Owls. *Br. Birds* 70: 318–331.

Hagen, Y. 1965. The food, population fluctuations and ecology of the Long-eared Owl (*Asio otus* [L.]) in Norway. *Nor. State Game Res. Pap. Ser. 2, No. 23*, Vollebekk.

Hamilton, R.A. and D.R. Willick. 1996. *The birds of Orange County, California: Status and distribution*. Irvine, CA: Sea and Sage Audubon Society.

Hilliard, B.L., J.C. Smith, M.J. Smith and L.R. Powers. 1982. Nocturnal activity of Long-eared Owls in southwest Idaho. *J. Idaho Acad. Sci.* 18: 29–35.

- Hunting, K. 2008. Long-eared Owl (*Asio otus*). In: D. Shuford and T. Gardali (eds.), California Bird Species of Special Concern: a ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.
- Johnsgard, P.A. 1988. North American owls. Washington, DC and London: Smithsonian Institution Press.
- Korpimäki, E. and K. Norrdahl. 1991. Numerical and functional responses of Kestrels, Short-eared Owls, and Long-eared Owls to vole densities. Ecology 72: 814–826.
- Lehman, P.E. 1994. The birds of Santa Barbara County, California. University of California, Santa Barbara.
- Lundberg, A. 1979. Residency, migration and a compromise: adaptations to nest-site scarcity and food specialization in three Fennoscandian owl species. Oecologia 41: 273–281.
- Marks, J.S. 1986. Nest-site characteristics and reproductive success of Long-eared Owls in southwestern Idaho. Wilson Bull. 98: 547–560.
- Marks, J.S., D.L. Evans, and D.W. Holt. 1994. Long-eared Owl (*Asio otus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/133doi:bna.133>
- Mikkola, H. 1983. Owls of Europe. Buteo Books, Vermillion, SD.
- Polite, C. 2005. Long-eared Owl (*Asio otus*). California Wildlife Habitat Relationships System, California Department of Fish and Game, California Interagency Wildlife Task Group. Available on the Internet at: <http://www.dfg.ca.gov/whdab/cwhr/A043.html>.
- Sacramento Audubon Society. 2005. The Observer, Vol. 57, Number 2, February 2005.
- Unitt, P. 1984. The birds of San Diego County. San Diego, CA: San Diego Society of Natural History.
- USDA Forest Service (USFS). 2008. Species Accounts: Animals. Available at: <http://www.fs.fed.us/r5/scfpr/projects/lmp/read.htm>.
- Village, A. 1981. The diet and breeding of Long-eared Owls in relation to vole numbers. Bird Study 28: 215–224.

Wilson, K.A. 1938. Owl studies at Ann Arbor, Michigan. *Auk* 55:187-197.

Yolo Audubon Society. 2007. Burrowing Owl, Vol. 36, number 7, March 2007.

Zeiner, D.C., W.F. Laudenslayer Jr., K.E. Mayer, and M. White (eds.). 1990. California's Wildlife: volume II: birds. California Department of Fish and Game. Sacramento, CA.

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