

**POSSIBLE HELPER AT A LONG-EARED OWL NEST**

TEX A. SORDAHL and DEBRA A. TIRMENSTEIN, Department of Biology, UMC 53, Utah State University, Logan, Utah 84322

Nest-helpers and polyandric trios are known to occur in a few diurnal raptor species (de Vries 1973, Mader 1975, Wiley 1975, Wegner 1976). Among owls polyandry has been reported in the Barn Owl (*Tyto alba*) and in Tengmalm's (= Boreal) Owl (*Aegolius funereus*), and polygyny has been reported in the Common Scops Owl (*Otus scops*), Snowy Owl (*Nyctea scandiaca*), Tawny Owl (*Strix aluco*), and Tengmalm's Owl (references in Kondratzki and Altmüller 1976). Because actual genetic investment in the clutch is almost never known in such cases, we use the term helper in the broad sense of another conspecific that assists in the reproductive effort. The helper may be a former offspring of the nesting pair with no direct genetic investment, or a polyandrous female's or polygynous male's mate with a variable amount of genetic investment. Of the two major facets of helping behavior, feeding of young and defense of nest/young, the former would be exceptionally difficult to observe in strigiform birds. This paper reports circumstances including nest defense which suggest a helper at a Long-eared Owl (*Asio otus*) nest.

During October and November 1977 R. Watson regularly observed three Long-eared Owls roosting in a dense thicket of climbing vines in a growth of Narrowleaf Cottonwoods (*Populus angustifolia*) along the Bear River near Amalga, Cache County, Utah. The birds may have remained through the winter and summer, but he did not return to look for them. He again found three Long-eared Owls roosting in the same thicket in the third week of October 1978. From that time on, three owls were seen regularly throughout the winter by several observers, including TAS. The birds roosted near the ground and usually within about 10 m of each other.

In April 1979 a nest was discovered near the roosting thicket. It was in an old nest of a Black-billed Magpie (*Pica pica*), about 3 m off the ground in a tilted dead snag, and situated over marshy ground within a dense thicket. The first eggs hatched between 29 April and 2 May (S.B. Vander Wall pers. comm.). Given an incubation period of 21 days (Bent 1938), egg-laying must have begun on about 10 April. When we visited the nest at 2100 on 19 May, it contained four owlets. The female, who had been brooding, circled about our heads and bill-clacked. She was quickly joined by another bird with a noticeably paler facial disc (presumably a male). Both flew about bill-clacking, swooped within 1-3 m of our heads, and performed dramatic "broken wing" distraction displays in the brush. Within 5 minutes a third Long-eared Owl appeared and it also flew around us, bill-clacked, and then dropped to the ground in some brush to perform a distraction display. The third owl's facial disc also appeared paler than the female's, suggesting it was a male (Bent 1938).

Three adult owls were present when we returned at 2100 on 25 May; two flew around bill-clacking, and the third remained perched. At 2030 on 27 May two adults defended the nest, which then contained only one young. We found a white elliptical egg, cracked and nearly empty, beneath the nest; its measurements, 42 mm × 34 mm, were well within the range for the Long-eared Owl (Bent 1938). At 2000 on 2 June the nest was empty but two adults appeared and seemed disturbed. Probably the young, which began to climb out on branches on 20 May (W.T. Bledsoe pers. comm.) at about 19-21 days of age, were somewhere nearby in the brush.

*Asio otus* is migratory (at least some individuals) or nomadic in parts of its range, and resident in others (Craighead and Craighead 1956, Mikkola 1973, Marti 1974, Glue 1977). In northern Utah it is thought to be a permanent resident (Behle and Perry 1975), but individuals may show some altitudinal movement. Roth and Powers (1979) found that a pair of Long-eared Owls in southwestern Idaho occupied essentially the same territory during the fall, winter and nesting seasons. We believe that the

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three birds present through the 1978-1979 winter were the same individuals later associated with the nest. Furthermore it seems possible that the same birds wintered and perhaps nested there in 1977-1978, implying a long-term polygamous association. The nest was located about 1 and 2 km from two small cattle feedlots and adjacent to extensive grassy fields. Thus a rich and probably rather constant food supply of mice, Starlings (*Sturnus vulgaris*) and other prey was available throughout the year.

Concentrations of Long-eared Owl nests have been reported in Utah, California, Arizona and Idaho (Henshaw 1875, cited in Bent 1938; Stophlet 1959; L.R. Powers pers. comm.). However, this situation is often associated with a shortage of nesting trees, and there was no shortage of trees in our study area. We searched without success for another nest in the vicinity. In addition the Long-eared Owl, being chiefly a montane species in this area, is uncommon in the valley. Because of the long-term presence of three associating adults we think the alternative to the nest-helper hypothesis, that the third defending adult was associated with a second nest, is unlikely. This alternative would imply cooperative defense and entail tolerance by a nesting pair of a third adult in the immediate vicinity of their nest. We doubt that a third adult, particularly in a predatory species, would be tolerated so close to a nest with young unless it was helping. Polygyny seems the least likely of the three helper categories because: (1) two birds had relatively pale plumage, indicative of males (Bent 1938); and (2) the probable clutch size of five was not unusually large for Long-eared Owls (Bent 1938).

In view of the known social tendencies of this owl and the likelihood that young remain with their parents during their first winter (Bent 1938:166, Wilson 1938), its social system merits close attention.

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