

LONG-EARED OWLS NESTING IN BADLANDS NATIONAL PARK

by Deborah D. Paulson
and Carolyn Hull Sieg

USDA Rocky Mountain Forest and Range Experiment Station
Rapid City 57701

Long-eared Owls nest at high densities locally over the Great Plains where suitable habitat is limited (Bent 1938), yet, according to Whitney et al. (1978), this species is rare to uncommon in South Dakota. Especially west of the Missouri River, few nesting records have been reported. This paper reports the occurrence of Long-eared Owls in the Badlands National Park between May 1981 and June 1983. The birds were observed by Paulson and Bob Hodorff, a Forest Service technician, during monthly, 4-day bird censuses of Rocky Mountain Juniper (*Juniperus scopulorum*) stands, and by Paulson alone during additional weekly searches between 26 April and 11 June 1983. Long-eared Owls nested in these juniper woodlands during all 3 years of the censuses. In 1983, 7 nests were found, 5 within an area much smaller than 1 square mile.

The nests were in dense juniper woodlands in steep draws along the northern rim of Sage Creek Basin, 11-16 miles SW of Wall, Pennington Co., South Dakota. Green Ash (*Fraxinus pennsylvanica*), cottonwood (*Populus spp.*), and American Elm (*Ulmus americana*) are the dominant trees at the base of the largest draws, with Rocky Mountain Juniper stands on the north-facing slopes and upper ends of the draws. The understory vegetation in the juniper stands consists mainly of Yellow Sweet Clover (*Melilotus officinalis*), Stonyhills Muhly (*Muhlenbergia cuspidata*), and Littleseed Ricegrass (*Oryzopsis micrantha*). While all nests were in juniper trees, 4 were found in areas of mixed juniper-deciduous woodland, and 3 were in almost pure Rocky Mountain Juniper stands.

All but one of the nests were on horizontal branches against the trunks of trees. The exception was on a large horizontal branch a few feet from the main trunk. Nest heights ranged from 12 to approximately 40 feet above the ground. Four of the nests were near the tops of tall, straight juniper trees, surrounded by many similar trees. These nests were difficult to see even after their locations were known. The other nests, well-concealed on 3 sides and fairly exposed in 1 direction, were in large, spreading junipers. Long-eared Owls traditionally use an old nest of a crow, hawk, squirrel, or magpie (Harrison 1975). At

least 1 owl nested in an old magpie nest within 15 feet of an active magpie nest. Two other owls nested within 50 to 150 feet of active crows' nests.

Owls were seen in the draws in 1981 and 1982, but their nesting was not followed closely until 1983. The only firm evidence of nesting in 1981 was an adult with 1 half-grown young seen by Paulson on 28 June. The first nest was found on 4 April 1982 by Hodorff. Several young fledged from this nest, and a group of 4 owls was repeatedly observed at another location from July to October, suggesting at least 1 other successful nest in 1982. Long-eared Owls apparently wintered in the draws in 1982-83. Single birds were observed in 3 draws during censuses in early December 1982 and mid-February 1983.

Activity during the 1983 nesting season was first observed by Hodorff at 2 nests in March (14, 16, 22, and 23 March). The nest found in 1982 was re-used, and by 26 April, all but 1 young had fledged from this nest. Four or 5 owlets remained near the nest until 30 May. Since the incubation period of Long-eared Owls is 24-28 days and young leave the nest at 25-26 days of age (Johnsgard 1979), incubation at this nest probably began in late February or early March. The owls at the other early nest may have experienced a setback, as 2 young were in the nest as late as 17 May, and a very small fledgling was near the nest on 30 May. At least 3 young fledged. On 26 April an owl was flushed from a third nest containing a single egg and a broken egg shell, but fresh remains of an adult owl were found in the draw the following day, and no owls were seen in the draw on several subsequent visits. The last 4 nests were not found until middle to late May, and all had young in or near the nest. All nests were empty by 30 May, but very small fledglings were observed near 2 nests on 29 May.

The owlets observed at the nests were obviously at different stages of development. Long-eared Owls usually lay an egg every other day with incubation beginning with the laying of the first egg (Harrison 1975). Because the usual clutch size is 4-5 eggs (Harrison 1975, Johnsgard 1979), the oldest owlet may be 8 to 10 days old when the last egg hatches. Flightless fledglings were observed at 4 nests. Long-eared Owls typically leave the nest well before they can fly, but both parents feed and guard the young until they can fend for themselves (Bailey and Niedrach 1965).

The owls we observed were usually silent and secretive until some of the young had left the nest. Once fledglings were out, however, the adults became highly vocal and

defensive, repeatedly circling visitors and landing in full view. When this tactic failed to draw intruders away from the fledglings, in at least 2 instances the adult feigned a broken wing. At 3 separate nests when an observer unknowingly approached fledglings too closely, the adult flew to the ground, spread its wings, and kneaded the ground as if handling prey, simultaneously making a high-pitched squeaking or peeping sound. This behavior has been described by Walker (1974). The owls' actions were almost always accompanied by a large variety of intimidating barks, moans, and whines. The owls were defensive but not aggressive, only once swooping close to an observer (when a nestling was being returned to the nest).

Fresh remains of 2 adult Long-eared Owls, in addition to the 1 mentioned above, were found near separate nests on 26 April and 16 May, but an adult owl remained at each nest. The 3 carcasses were almost identical. The wings were left intact, joined by the furcula or wishbone, which had been picked clean of meat. The feet and lower inch of leg were untouched and joined to the leg bones, which were picked clean, but were otherwise intact and joined by the pelvic girdle. The remains closely fit a description of carcasses left by Great Horned Owls (Einarson 1956), which have been observed in the surrounding area, although never in the juniper draws during the 2 years of censuses.

Why so few Long-eared Owls have been reported in South Dakota is not clear. They may not be uncommon in the very limited habitat available. In well-visited areas such as the Cliff Shelf Nature Trail near Cedar Pass, nesting Long-eared Owls have been reported in 1976 and 1977 by Rick Wilt, then a park naturalist, and in 1983 by Paulson. These owls are highly nocturnal, secretive, silent, and difficult to see outside the nesting season. Even the large nests can be almost impossible to locate, especially in dense juniper stands. Long-eared Owls do become highly visible when they have flightless young out of the nest. In our experience, the owl almost always found the observer and not vice versa. Because the young leave the nest so early in a staggered age order, the adults can be vocal and visible for as long as a month. According to the 1983 Badlands nesting season records, mid-April to mid-June is probably the most rewarding time to look for nesting Long-eared Owls. Considering the relatively high nesting density of these owls in the Badlands National Park in 1983, Long-eared Owls may be much more common in South Dakota than previous records indicate.

Literature Cited

- Bailey, A. M. and R. J. Niedrach. 1965, Birds of Colorado, Vol. I. Denver Museum of Natural History, Denver, 454 pp.
- Bent, A. C. 1938. Life Histories of North American Birds of Prey, Part II. U. S. National Museum, Bulletin 170.
- Einarson, A. S. 1956. Determination. of Some Predator Species by Field Signs. Oregon State College Press, Oregon State Monographs, Studies in Zoology, No. 10.
- Harrison, H. H. 1975. A Field Guide to Birds' Nests. Houghton Mifflin, Boston, 257 pp.
- Johnsgard, P. A. 1979. Birds of the Great Plains. University of Nebraska Press, Lincoln, 539 pp.
- Walker, L. W. 1974. The Book of Owls. Alfred A. Knopf, New York, 256 pp.
- Whitney, N. R., et al. 1978. The Birds of South Dakota. The South Dakota Ornithologists' Union, Vermillion, 311 pp.