

Continuous Nesting of Barn Owls in Illinois

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ABSTRACT.—Barn Owls (*Tyto alba*) typically begin nesting in temperate zones in early spring. The species has high reproductive output (large clutch size, occasionally double-brooded) and high mortality for a member of the Strigiformes. We report on Barn Owls in one nest box that hatched five clutches and fledged young from four clutches within 23 months. Laying, incubation, or brood-rearing was attempted in every month of the year. In the only clutch mortality we witnessed, three young apparently died of exposure during a period of cold weather (temperatures as low as -15°C). Received 24 February 1999, accepted 27 May 1999.

Barn Owls (*Tyto alba*) have a high reproductive rate and relatively short life span, fitting an *r*-selected life history strategy (Colvin et al. 1984, Marti 1997). Average clutch sizes in North America range from 4.2–7.1 eggs (mostly 5–6 eggs; Hands et al. 1989, Marti 1992) and the average Barn Owl life span is less than 2 years (1.4 years, Stewart 1952; 1.7 years, Keran 1981). Most nest initiations in temperate areas occur from February to June, with the peak probably occurring March–May (Hands et al. 1989, Marti 1992). Nestlings have been banded in every month except February in the northern United States (Stewart 1952), suggesting that nesting may occur in any season. Second broods are uncommon in temperate climates. For example, only about 5% of pairs in Utah produced a second brood (Marti 1992). In contrast, nesting in tropical areas occurs year around with double broods being common (e.g., Lenton 1984). In captivity, Maestrelli (1973) reported a pair fledging six broods in 22 months.

A nest box (enclosed design from Colvin 1983) was erected 4.6 m above ground in an empty barn in 1986. This location was within

a 64 ha grassland tract of Prairie Ridge State Natural Area, Marion County, Illinois ($38^{\circ} 45' \text{N}$, $88^{\circ} 51' \text{W}$). Prairie Ridge State Natural Area grasslands are a combination of restored native grasses and introduced cool-season grasses managed by the Illinois Department of Natural Resources for grassland wildlife. Within 2 km of the nest site, land use was about 70% rowcrop agriculture, 15% grasslands (96 ha of Prairie Ridge State Natural Area, 98 ha of Conservation Reserve Program grasslands), 8% small grains, and small amounts of woodland, pasture and farmsteads.

The nest box was checked periodically and Rock Dove (*Columba livia*) nests were removed. We first observed one adult Barn Owl perched upon the nest box on 20 September 1993. On 1 November 1993, two adults and a clutch of six eggs were noted. We saw three chicks on 21 December 1993 and found them dead in the nest box on 6 January 1994. The young apparently died of exposure to harsh weather between 23 and 31 December. Mean temperature during this period was -5.5°C (-15° to 3°C) with 7 cm snowfall on 25 December and northeasterly winds 20–25 km/hr blowing into the nest box on 28 and 29 December (weather data from Midwestern Climate Center, Champaign, Illinois). The second nest attempt began about 11 March 1994 (one egg in nest box), with five young seen through May 1994. Fledging occurred in early July (four grown birds observed 14 July). An adult and the third clutch of five eggs were noted 23 August 1994. Four chicks from this clutch fledged between 25 and 30 October. The fourth nest attempt was apparently initiated in early to mid-February 1995. A clutch of seven eggs was observed 13 March, and five young about to fledge were seen 9 May 1995. A fifth clutch consisted of three eggs recorded on 7 July 1995, three young (estimated two weeks old) on 23 August and two fledglings on 19 October 1995. Single Barn Owls were observed only sporadically after this date.

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The five clutches averaged 5.2 eggs per clutch (range 3–7). Of the four successful clutches, 3.75 young fledged per clutch (range 2–5). We estimate an average of 160 days (range 130–190 days) for each successful nest cycle (estimated time between the start of one attempt and the start of the next). While these birds were not banded or marked, their constant presence at the nesting site from September 1993 to October of 1995 suggests the same adults were involved in all nest attempts.

Excluding the first nest attempt, the temporal pattern of the four successful nests better fits the typical early spring/late summer pattern of double-brooded Barn Owls (Taylor 1994), although the 1995 nests were about one month earlier than their 1994 counterparts. Taken as a whole, this nest site was used nearly continuously for two years with an additional delay of about 30 days between nest attempts during the coldest time of year.

This is only the fourth report of Barn Owls using a nest box in Illinois (Illinois Biological and Conservation Data System, unpubl. data). Once this nest site was discovered, breeding activity was brief, but quite productive.

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