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Birds of the Great Plains: Family Strigidae (Typical Owls)

Paul A. Johnsgard

University of Nebraska-Lincoln, pajohnsgard@gmail.com

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FAMILY STRIGIDAE
(TYPICAL OWLS)



Barred Owl

Screech Owl

Otus asio

Breeding Status: Breeds fairly commonly throughout the wooded portions of the entire area, becoming progressively less frequent westerly, and is rare in the western Dakotas, including the Black Hills. It is local and uncommon in the wooded river bottoms of northeastern and southeastern Colorado and is not known to breed in northeastern New Mexico or in the Texas panhandle.

Breeding Habitat: Breeding occurs in a variety of wooded habitats, including farmyards, cities, orchards, and other man-related environments.

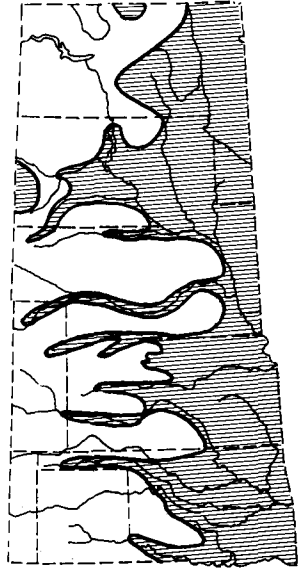
Nest Location: Nests are typically in natural tree cavities, particularly old woodpecker holes. Artificial cavities such as birdhouses and small kegs are also used, especially if sawdust is placed in the bottom. Nests are usually 5-30 feet above the ground but have also been found in stump cavities practically at ground level.

Clutch Size and Incubation Period: From 2 to 7 eggs, but usually 4 or 5. The eggs are pure white and often nearly spherical, with a glossy surface. The incubation period averages about 26 days but reportedly ranges from 21-30 days and begins before the clutch is completed. Single-brooded.

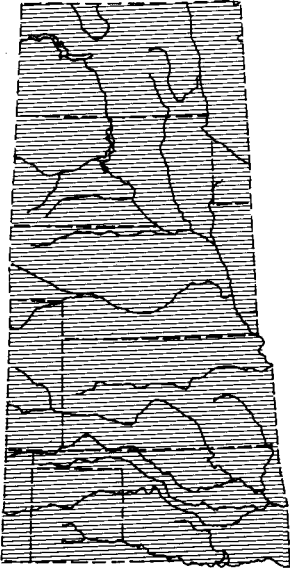
Time of Breeding: North Dakota egg records extend from April 10 to June 1. Kansas records extend from March 20 to May 10, and those from Oklahoma are from March 20 to May 4.

Breeding Biology: Screech owls are so small and inconspicuous that they may well nest in an urban backyard without the owner's ever being aware of their presence. Most often they can be detected by their distinctive wailing call, or a series of short whistled notes that often speed up and become a trill, similar to the noise of a ball bouncing to a standstill. From 8 to 9 days are needed to complete a clutch of 4 eggs. From the time incubation begins the male probably hunts for both members of the pair, but he does not incubate the eggs. When the young have hatched, over a period of about 3 days, they are fed about equally by both parents. The adults forage and return separately with their food items, and they present the prey either intact or after it has been partially dismembered. Early studies by A. A. Allen indicated that a surprising variety of prey is brought to the nestlings, including numerous adult songbirds such as sparrows, warblers, phoebes, and tanagers. In a 45-day period, 77 birds of 18 species were brought to the young, as well as numerous insects, mammals, salamanders, crayfish, and other prey. The young begin to fly when about 28-30 days of age but continue to be fed for some time.

Suggested Reading: Allen 1924; Van Camp and Henny 1975.



Great Horned Owl *Bubo virginianus*



Breeding Status: Pandemic throughout the entire area, but most abundant in wooded or deeply eroded areas that provide both food and nest sites.

Breeding Habitat: This widely ranging species occurs in dense forests, in large city parks or farm woodlots, and in rocky canyons or gulleys well away from forest cover.

Nest Location: Nest sites are highly variable, and these owls often use an abandoned nest of a large bird such as a hawk, heron, or crow, or even a squirrel nest. They also use large tree cavities, crotches, stumps, caves, and ledges, and some nests have been found on the ground amid rocks, in logs, or under vegetation. The sites are generally used as they are found, with at most a few feathers added for lining.

Clutch Size and Incubation Period: From 1 to 4 eggs, usually 2 (22 North Dakota clutches averaged 2.6). The eggs are white and rough surfaced, sometimes nearly spherical. The incubation period is probably about 30 days, but estimates range from 26–35 days, starting with the first egg laid. Single-brooded.

Time of Breeding: Egg records in North Dakota extend from March 8 to May 5, and nestlings have been observed from April 20 to July 5. Kansas egg dates are from January 11 to March 20, with a peak of egg-laying about February 10. Oklahoma egg records are from February 6 to May 30, and nestlings have been reported as early as March. Texas egg records are from late December to June 12, with nestlings seen as late as July 8.

Breeding Biology: Horned owls are strongly monogamous, and pairs keep in contact by using their familiar hooting calls, *whoowhoo-whoowhoo*. The male's call is appreciably lower in pitch than the female's. They begin their nesting season amazingly early, usually nesting in the same area and sometimes in the same nest they used the previous year. Incubation begins as soon as the first egg is laid, perhaps partly to keep the eggs from freezing, but also to ensure staggered hatching of the young. Both sexes reportedly incubate, but the female probably does most of it while the smaller male hunts for the pair. The young are hatched in a scanty down coating and do not open their eyes for a week or more. They are brooded by their parents for nearly a month and cannot fly until they are about 9–10 weeks old. Even after they fledge they continue to beg for food until they are driven away from the area by their parents.

Suggested Reading: Bent 1938; Errington, Hamerstrom, and Hamerstrom 1940.

Burrowing Owl

Athene cunicularia (*Speotyto cunicularia*)

Breeding Status: Breeds over the western portions of the Great Plains, extending locally eastward to the Red River Valley of North Dakota, extreme southwestern Minnesota (Stevens and Traverse counties, probably also Grant, Big Stone, and Swift), western Iowa (recent breeding in Plymouth and Woodbury counties), southeastern Nebraska (Lancaster County), east-central Kansas, and central Oklahoma. Originally probably ranged farther eastward, but reductions in prairie dogs and ground squirrels have caused range contraction and decreased abundance throughout the Great Plains. There is a single nesting record for Missouri (*Bluebird* 41:11).

Breeding Habitat: This species is associated with heavily grazed grasslands, particularly where there are colonies of large rodents, such as prairie dogs and Richardson ground squirrels.

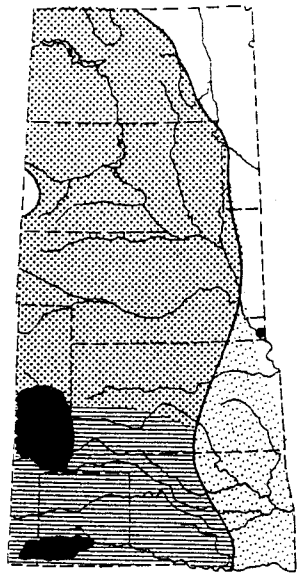
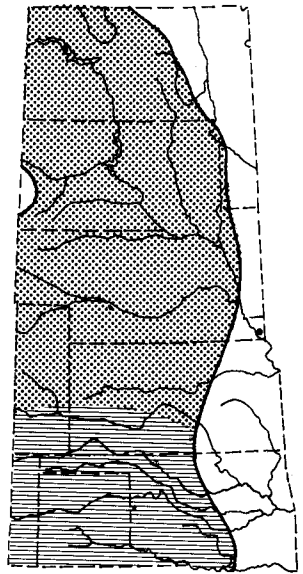
Nest Location: Rodent burrows are favored nest locations, but the cavities of badgers and tortoises or similar excavations may also be used. Sometimes the owls dig their own nesting burrows, typically making a 4- to 9-foot tunnel that terminates in a circular nest cavity, usually lined with vegetation or dried manure. Manure is often placed near the burrow entrance, apparently to provide scent camouflage.

Clutch Size and Incubation Period: From 3 to 10 eggs (18 North Dakota nests averaged 5.2). The eggs are white and relatively glossy but soon become stained. The incubation period is estimated at about 3 weeks. Single-brooded.

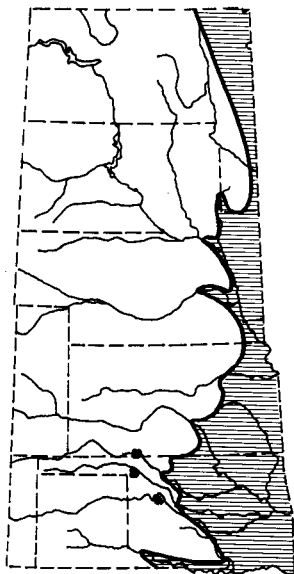
Time of Breeding: North Dakota egg records are from May 15 to August 23, with dependent young reported from June 19 to September 7. Kansas egg records are from April 11 to July 10, with a peak of egg-laying in mid-May. Colorado egg records are from May 9 to June 19. Texas egg dates are from April 13 to May 18, and dependent young have been seen as late as July 21.

Breeding Biology: Based on studies in New Mexico, burrowing owls arrive on their nesting areas either singly or paired, with males returning to the same burrows they occupied previously. Unpaired males display from their burrow locations by bowing and uttering their double-noted *coo-cooooo* "song" through the night. Pair-formation may occur in a single evening, and copulation occurs near the nest entrance. Evidently only females incubate, and males feed their mates during pair-formation, incubation, and brooding. When the young are 3-4 weeks old the female begins to forage for herself and her brood, and at about this time the young birds are capable of flight.

Suggested Reading: Martin 1973; Grant 1965.



Barred Owl *Strix varia*



Breeding Status: Breeds locally in woodlands through the eastern portions of the region, extending west to extreme western Minnesota (nesting in eastern North Dakota is probable but unproved), southeastern South Dakota (extending west to the Black Hills but not known to breed there), the Missouri Valley of Nebraska, and perhaps locally in the Platte Valley westward toward Colorado, for which a single old nesting record exists (Phillips County). It is a local breeder in eastern Kansas, with no nesting records west of Morris County. In Oklahoma it is a resident breeder in the eastern half of the state, and in northern Texas it breeds along the Red River Valley.

Breeding Habitat: Dense river-bottom woods are favored habitats, and the bird is never far from forest environments. When both are present, coniferous woods seem to be preferred to hardwood habitats.

Nest Location: Tree cavities are the most typical nest sites, but old nests of other large birds such as hawks and crows are also used. No lining is added to the nest. Nests are typically in tall, old trees with cavities at least 25 feet above the ground, near the middle of large expanses of woods.

Clutch Size and Incubation Period: Usually 2-3 eggs, rarely 4. The eggs are white, elliptical, and have a dull surface. The incubation period is 28-33 days, starting with the first egg laid. Single-brooded, but renesting is known to occur.

Time of Breeding: There are few actual egg records for the area. Minnesota records are for March and early April. Three Kansas records are for the first half of March; egg-laying in Oklahoma is said to begin in late February, and eggs have been seen as late as April 23. Texas egg records are from February 2 to June 4.

Breeding Biology: Barred owls typically return to the same nesting place year after year, and their distinctive *Who cooks for you?* call is perhaps the best known and most distinctive of all North American owl calls. Calling is most evident before the egg-laying period. It is believed that the female does most if not all the incubation, and the young hatch down-covered but helpless, with their eyes closed. Within a week they begin to open their eyes, but they are brooded most of the time during their first 3 weeks of life. They are fed mainly rodents during the nestling period and fledge when they are 7-9 weeks old. However, they move out of their nest when about a month old and climb about in the trees with surprising agility. Should they fall out of the tree before they fledge, they can readily climb back up, using their beaks and feet simultaneously to "walk" up nearly vertical trunks of rough-barked trees. About 8 weeks after fledging the

young can capture mice and crayfish on their own, but family bonds seem to persist well into the fall.

Suggested Reading: Dunstan and Sample 1972; Bent 1938.

Great Gray Owl *Strix nebulosa*

Breeding Status: Accidental in our area, with two nestings in Roseau County, Minnesota, in 1935 and 1970.

Breeding Habitat: This northern species is associated with dense coniferous forests of Canada and with montane coniferous forests of the western states.

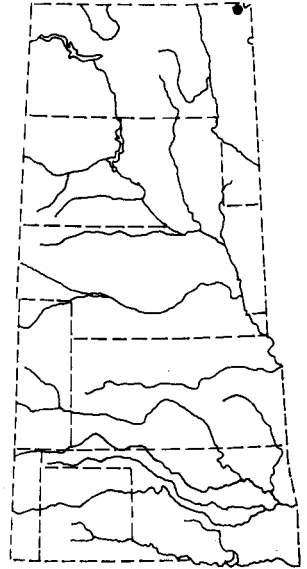
Nest Location: Nests are usually in old nests of goshawks, red-tailed hawks, or other large hawks, 10-80 feet above the ground, in such trees as tamaracks, balsam poplars, aspens, and spruces.

Clutch Size and Incubation period: From 2 to 5 eggs, usually 3. The eggs are white, relatively small, and not glossy. The incubation period is probably 28-30 days. Single-brooded.

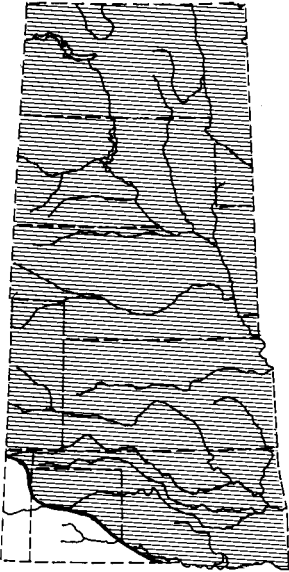
Time of Breeding: The few records from Minnesota extend from April 4 to May 22 (representing the last, unhatched egg of a clutch of 5).

Breeding Biology: Studies in Alberta indicate that these owls usually nest in poplar woodlands, preferably near muskeg areas and well secluded from human activities. During the breeding season the male utters a long, drawn-out four-noted call that lacks the depth and throatiness of the call of the great horned owl, while the female's response is shorter and more screechy. Nesting in Alberta begins in late March or early April; the birds usually take over an old raptor nest with little or no attempt to recondition it. Evidently the female does all the incubating, and the male provides food for his mate and later the brood as well, chiefly small rodents such as meadow voles and red-backed mice. Very few larger mammals such as squirrels are taken, and almost no birds have been reported among the prey. The young are helpless and covered with white down when first hatched, and the male must hunt all day and presumably during the night to keep the brood and the female supplied with food. The young leave the nest when about 24 days old and by then are able to climb trees effectively, though they are unable to fly well until they are nearly 6 weeks old. They continue to follow their parents for at least another month and probably are still fed to some degree.

Suggested Reading: Nero 1970; Oeming 1955.



Long-eared Owl *Asio otus*



Breeding Status: Breeds in wooded areas throughout most of the region, especially in eastern portions. It is probably locally common in woodland areas of Minnesota, is rare to uncommon in North Dakota, South Dakota, and Nebraska, is considered a rare resident in Iowa and uncommon in Kansas, and is apparently uncommon to rare in Oklahoma. It is regarded as fairly common on the wooded streams and reservoir shorelines of eastern Colorado, it presumably is a very local and occasional breeder in eastern New Mexico, and there is a single breeding record for the Texas panhandle (Deaf Smith County).

Breeding Habitat: Breeding occurs in either coniferous or deciduous forests, with the former preferred, in open as well as dense woodlands, and in parks, orchards, or woodlots.

Nest Location: Old nests of large birds such as crows or hawks are most often used; squirrel nests and tree cavities are also sometimes utilized. Most often the nest is 15-30 feet above the ground, but ground nests have been reported. Unlike most owls, some nest rebuilding is typical, and rarely a bird will construct its own nest.

Clutch Size and Incubation Period: From 3 to 8 eggs, usually 4-5. The eggs are white, relatively round, and very glossy. The incubation period is probably normally 24-28 days and starts with the first egg. Single-brooded.

Time of Breeding: North Dakota egg dates range from April 28 to June 16, and nestlings have been seen from May 20 to July 15. Kansas egg records are from March 11 to April 10, and Oklahoma records of eggs or females ready to lay are from March 9 to June 14. Texas records of eggs range from March 9 to April 9.

Breeding Biology: A few weeks before egg-laying, courtship calling begins, marked by a series of short three-noted calls similar to mourning dove calls, uttered at intervals of about 3 seconds. Aerial display flights include wing-clapping noises as well as acrobatic flying maneuvers. The eggs are laid at irregular intervals of 1-5 days, and a clutch of 7 eggs may be completed in 10 or 11 days. Only the female incubates, and because of the early onset of incubation the young are hatched over a period of about 7 to 12 days. For the first 15 days of brooding the female does not leave the nest area and is fed by the male. By the time they are 25-26 days old the young are sufficiently developed to leave the nest and float to the ground, but they are not capable of full flight until they are about 30-32 days of age.

Suggested Reading: Armstrong 1958; Glue, 1977.

Short-eared Owl *Asio flammeus*

Breeding Status: Breeds in nonwooded habitats of the northern portions of the region, including virtually all of Minnesota, North Dakota, South Dakota, and Nebraska. It is a rare breeder in western Iowa and northwestern Missouri, is uncommon in eastern Colorado, and is not known to breed in New Mexico. Its southern breeding limits probably are in Kansas, where it is a local resident in eastern Kansas, but it may no longer nest in western portions of the state. There is a single old nesting record for Oklahoma (Woods County).

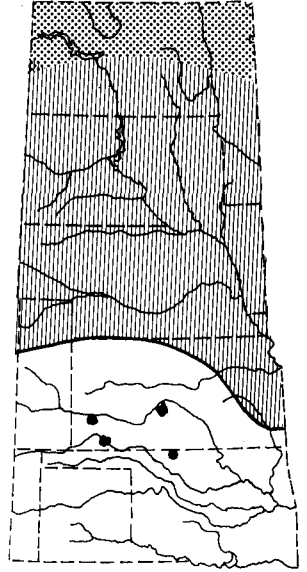
Breeding Habitat: Breeding occurs in such open habitats as grasslands, marshes, tundra, forest clearings, and brushy areas.

Nest Location: Nests are sometimes in rather loose colonies and are placed in slight depressions in the ground, either in rather exposed situations or in grassy cover. Rarely an excavated burrow will be used. The nest is sparsely lined with feathers and vegetation.

Clutch Size and Incubation Period: From 4 to 10 eggs (19 North Dakota clutches averaged 6.4). The eggs are white, gradually becoming nest-stained, and are not glossy. The incubation period is 21–28 days, starting before the clutch is completed. Single-brooded, but renesting occurs after clutch loss.

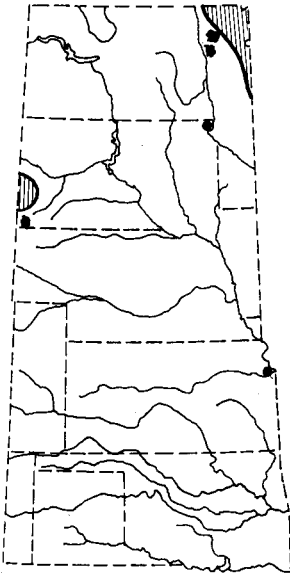
Time of Breeding: North Dakota egg dates range from April 4 to August 1, and nestlings have been seen from June 7 to July 30. Few egg dates are available from more southerly areas, but records from Nebraska, Kansas, and Illinois extend from April 8 to May 17.

Breeding Biology: The short-eared owl is one of the most diurnal of the Great Plains owls, and during spring it can sometimes be seen performing acrobatic courtship flights high above the prairies, marked by strong wing-clapping, swooping, diving, and somersaulting maneuvers and by a quavering, chattering cry as the bird plummets toward the ground. Copulation sometimes follows such aerial displays or may occur in their absence. Eggs are laid over a considerable period, at intervals of 2–7 days. The female incubates alone, but her mate brings food to her during this period. The eggs usually hatch at intervals of about 3 days, and about 2 weeks after hatching the young begin to move some distance away from the nest. When they are about 6 weeks old they begin to catch some of their own food, such as insects and amphibians, but even after they are flying well at the age of 2 months the adults continue to care for them. About 90 percent of this owl's food consists of rodents, which makes the species extremely valuable from the human standpoint.



Suggested Reading: Eckert 1974; Clark 1975.

Saw-whet Owl *Aegolius acadicus*



Breeding Status: The breeding status of this tiny and inconspicuous owl is hard to determine. It is probably most common in Minnesota, where it is thought to breed in wooded areas of the state south to the Twin Cities, but in the area covered by this book nesting records exist only for Kittson County. It is a hypothetical breeder in North Dakota (three breeding season records in the northeast) is a probable uncommon resident of the Black Hills of South Dakota, and nested in Roberts County in 1978. There are no definite nesting records for Nebraska (territorial birds regularly heard at Fort Robinson, Dawes County), Iowa or eastern Colorado, and only a single nesting record (Wyandotte County, 1951) for Kansas, which seems to be the southernmost breeding record for the region.

Breeding Habitat: Dense woods, especially swampy areas of coniferous or hardwood forests, are favored by saw-whet owls. They are likely to be found around tamarack bogs, alder thickets, or cedar groves. Cedar groves are also favored roosting sites, as are vine clusters.

Nest Location: The favored nest site is a flicker hole or a hole made by a woodpecker of similar or larger size, usually one from 18 to 50 feet above the ground. Sometimes birdhouses are also used. A few breast feathers are the only lining.

Clutch Size and Incubation Period: From 4 to 7 eggs, but usually 5-6. The eggs are pure white and lack gloss. The probable normal incubation period is 26-28 days and begins with the laying of the first egg. Reportedly double-brooded at times.

Time of Breeding: Minnesota egg records are from April 12 to May 9, and young in the nest have been reported as early as May 9.

Breeding Biology: The weak voice and relatively quiet nature of this species make its nesting easily overlooked; the courtship call consists of a note resembling the filing of a saw and is primarily heard during the early parts of the nesting period in March and April. Males court females by flying around them and landing nearby, often presenting a small prey. As soon as egg-laying begins the female becomes very reluctant to leave the nest, and the combination of a large clutch size and an egg-laying interval of 24-74 hours results in a highly staggered period of hatching. During the incubation and early brooding period the male is occupied with getting food which often consists of small mice, frogs, and occasionally birds. The young remain in the nest about 4 weeks and by the end of this period are able to fly moderately well. However, parental care continues until late summer, when

the distinctive juvenile plumage is lost and the first adultlike plumage is assumed.

Suggested Reading: Eckert 1974; Santee and Granfield 1939.

