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Birds of the Great Plains: Family Picidae (Woodpeckers)

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**FAMILY PICIDAE
(WOODPECKERS)**



Common Flicker

Common Flicker (Yellow-shafted and Red-shafted Flickers)
Colaptes auratus (including *C. a. cafer*)

Breeding Status: As a species, pandemic throughout the region. Most of the area is represented by predominantly yellow-shafted forms, with the center of the hybrid zone extending through the western portions of South Dakota and Nebraska, eastern Colorado, and the panhandles of Oklahoma and Texas. West of this line the red-shafted (*cafer*) subspecies predominates, but hybrids are numerous throughout much of the region covered by this book (Short 1965, 1971).

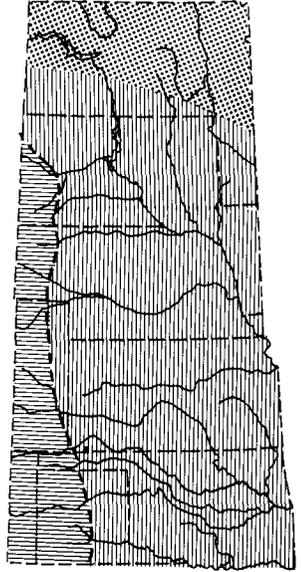
Breeding Habitat: Habitats are diverse and include relatively open woodlands, orchards, woodlots, and urban environments. Generally, open country or lightly wooded areas are favored over dense forests.

Nest Location: Nests are 2-60 feet above ground, in cavities of trees that are either dead or have decaying interiors. Dead trees or stubs are preferred to live ones, and the nests are usually near the top of tree stubs. Hardwood species are greatly preferred to living coniferous trees, and utility poles or wooden buildings are sometimes used. The entrance hole averages slightly less than 3 inches in diameter, and the interior of the nest cavity is usually about 8 inches in diameter. Tree diameters at the nest hole average about 11 inches. There is no lining other than wood chips.

Clutch Size and Incubation Period: From 3 to 11 eggs (4 North Dakota nests averaged 7.2). The eggs are white and glossy. The incubation period is 11-12 days. Normally single-brooded, but double-brooding has been reported in Oklahoma, and persistent renesting follows egg removal.

Time of Breeding: Egg dates in North Dakota are from May 24 to July 3, and nestlings have been reported from May 27 to July 15. Kansas egg records are from April 11 to June 10, with a peak of egg-laying about May 10. Oklahoma egg dates extend from April 24 to June 28.

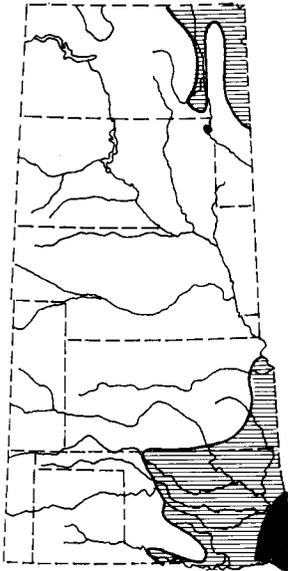
Breeding Biology: This species is relatively migratory over most of the region concerned, and when returning to the nesting area both sexes seek out their old territories and nest sites. Males tend to arrive a few days before females and soon begin uttering location calls and drumming as a territorial advertisement. Recognition of previous mates is apparently site-induced, and sex recognition is based on the "moustache" markings of the male. Courtship displays include exposing the undersides of wing and tail, bobbing, and billing ceremonies. Males apparently select the nest site, often using a previous year's nest or starting to excavate a new one. Most of the excavation is done by the male, and copulation typically occurs just before the nest is finished. The eggs are laid at daily intervals, and both sexes share incubation,



with the male assuming most of the nocturnal responsibilities. Both sexes care for and brood the young, feeding them by regurgitation, and the males again take most of the responsibility. The nestling period is about 26 days, but the parents continue to feed their offspring for some time after they leave the nest.

Suggested Reading: Kilham 1959; Lawrence 1967.

Pileated Woodpecker *Dryocopus pileatus*



Breeding Status: Breeds locally in wooded bottomlands of the Red River Valley of North Dakota (only one definite record) and in wooded areas of Minnesota. Not currently known to breed in South Dakota, Nebraska, or western Iowa (before 1900 it bred in the Missouri River Valley). Breeds locally in eastern and southeastern Kansas (records for Cowley, Linn, and Cherokee counties) and eastern Oklahoma (definite records for McCurtain, Cleveland, Okmulgee, Delaware, Washington, Okfuskee, Murray, Marshall, and Love counties). Also breeds in northeastern Texas (record for Cooke County).

Breeding Habitat: The species is generally limited to mature forests—coniferous, deciduous, or mixed. Preferred habitats are near water and include mature lowland forests containing tall living trees with dead stubs.

Nest Location: Nests are usually excavated in the dead stubs of living trees and less frequently are in living trees, usually where the trunk is 15–20 inches in diameter. Hardwood species such as beeches, poplars, birches, oaks, and hickories are used. The opening is generally about 3½ inches in diameter and often faces south or east. Entrances range from 15 to 70 feet high, but average 45 feet. Typically a new cavity is excavated for each brood.

Clutch Size and Incubation Period: From 3 to 4 eggs, glossy white. The incubation period is 18 days, possibly starting before the clutch is complete. Single-brooded, but known to sometimes renest.

Time of Breeding: Egg records in Minnesota are from May 9 to May 23, and in Kansas eggs are laid at least during April. Eggs (or females bearing eggs) have been reported in Oklahoma from March 25 to April 28, and nestling young are reported from May 13 to June 4. Texas egg records are from March 27 to May 16.

Breeding Biology: Apparently pileated woodpecker pairs are very sedentary and maintain the same territory year after year. Terri-

tories are advertised by bouts of loud drumming that last about 3 seconds, performed throughout the year by both sexes, but especially the male. Paired as well as unpaired males drum; one unpaired male in Maryland was found to have a drumming territory 700 yards long. In Maryland, nest excavations begin in March, and the male does most of the work. Copulation apparently occurs about the time the nest excavation is completed. Both sexes incubate, with the male and female sharing duties during the daylight hours and the male remaining on the nest during the night. There is a recent observation of a female removing her eggs from a damaged nesting tree and carrying them in her bill to some undetermined location. The young are fed by regurgitation and remain in the nest for 26 days. They are also fed and cared for by the parents for some time after leaving the nest.

Suggested Reading: Hoyt 1957; Kilham 1959.

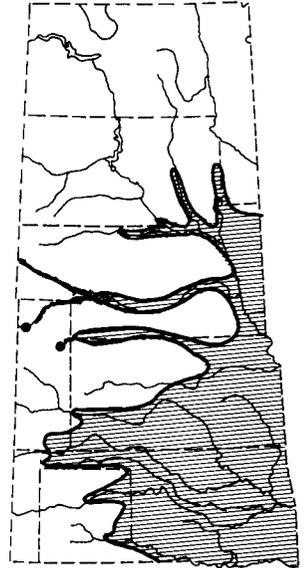
Red-bellied Woodpecker *Melanerpes carolinus* (*Centurus carolinus*)

Breeding Status: Breeds in Missouri Valley woodlands from central South Dakota southward (one breeding record for Morton County, North Dakota), with probable western breeding limits in Cherry and Lincoln counties of Nebraska, Rawlins and Hamilton counties of Kansas, Baca County of Colorado, Cimarron County of Oklahoma, and Potter County of Texas. Apparently still extending its range westward along wooded river systems.

Breeding Habitat: The species is generally associated with slightly open stands of coniferous or deciduous forest, especially along rivers and near forest edges. It also frequents orchards, gardens, and similar areas near humans.

Nest Location: Nests are excavated in a variety of sites, including trees, stumps, poles, buildings, and so forth, and are usually less than 40 feet above the ground. Relatively soft deciduous tree species are preferred, as are dead trees or those with decayed stubs. The diameter of the nest limb averages about 9 inches. The entrance hole is usually less than 2 inches in diameter, and the cavities are about a foot deep. Wood chips are added to the cavity during incubation. Nesting trees are usually in more wooded areas than those of the red-headed woodpecker, and cavities are typically on the underside of a leaning branch.

Clutch Size and Incubation Period: From 3 to 8 eggs (7 Kansas clutches averaged 5.0), white and somewhat glossy. The incubation period is 12 days, beginning after the laying of the last egg, with hatching often spread over a 2-day period. Single-brooded in



northern part of range, but reportedly double-brooded in Oklahoma.

Time of Breeding: Egg records in Kansas extend from the middle third of April through the first third of June, and nestlings have been noted from early May to mid-July. Breeding records in Oklahoma are from April 27 (eggs) to late July (newly fledged young). Texas egg records are from April 5 to July 9.

Breeding Biology: At least in most of this area, red-bellied woodpeckers are nonmigratory and remain on individual territories throughout the year, although typical territorial behavior is evident only during the nesting season. The major vocalizations of both sexes are a breeding call, *kwirr*, used at the onset of the nesting season, and a more general territorial call, *cha-aa-ah*, uttered throughout the year. Courtship includes three major components: mutual bill-tapping at a nest site, reverse mounting (the female mounting the male), and actual copulation. All of these occur from the start of nest excavation, and both sexes share incubation, with the male apparently incubating at night. The sexes also share about equally in the feeding of the young birds, which remain in the nest about 20 days. When a second nesting is performed, the young birds leave their parents within a few weeks but otherwise remain with them until fall, when family groups dissolve.

Suggested Reading: Kilham 1961; Jackson 1976.



Golden-fronted Woodpecker

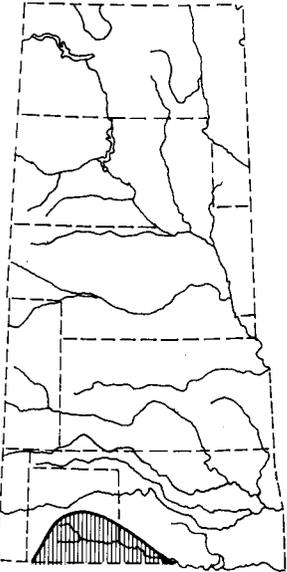
Melanerpes aurifrons (*Centurus aurifrons*)

Breeding Status: Breeds locally in southwestern Oklahoma (Harmon County) and adjacent parts of Texas (breeding records for Armstrong, Hardeman, and Wilbarger counties).

Breeding Habitat: The species is primarily associated with mesquite pastures and also is common in pecan groves on open or semiopen river bottoms. Large timber stands near mesquite, especially oaks on gravelly uplands, are also favored.

Nest Location: Living or dead trees, as well as utility poles or fence posts, are used for nests. The same cavity is typically used year after year. The cavities are usually between 6 and 25 feet above the ground and generally are in the live trunks of large trees, especially mesquite.

Clutch Size and Incubation Period: From 4 to 7 eggs, but usually 4 or 5; the eggs are white and have little gloss. The incubation



period is reportedly 14 days, and possibly two broods may be raised in a season.

Time of Breeding: Texas egg records are from March 30 to July 6. A single Oklahoma breeding record is for small young on May 18.

Breeding Biology: This close relative of the red-bellied woodpecker is probably very similar to that species in behavior and breeding biology, but little has been written about it. Its vocalizations are very similar but are louder and harsher, which is believed to be adaptively useful, since it allows for better communication in the species' arid and open habitat. Besides drilling in such extremely hard woods as mesquite, they also drill in softer trees and do considerable damage to pine utility poles, for which they have been greatly persecuted. This, together with the elimination of mesquite from ranchland areas of Texas, has seriously reduced this species in some areas. During the breeding season both sexes work at nest excavation, which requires some 6-10 days. Both sexes also assist in incubation and in brooding responsibilities. By late summer, groups of adults and juveniles may be seen traveling together, but such family units separate before winter.

Suggested Reading: Bent 1939; Selander and Giller 1959.

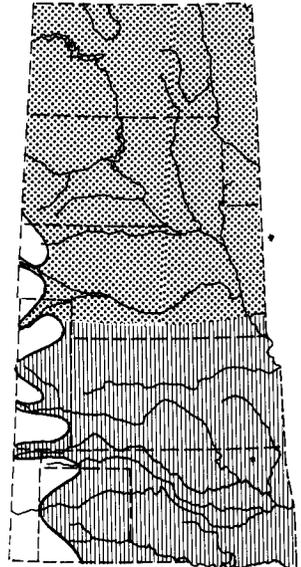
Red-headed Woodpecker *Melanerpes erythrocephalus*

Breeding Status: A breeding species in nearly the entire region except for local treeless areas of westernmost Nebraska, eastern Colorado, eastern New Mexico (breeds in Union County), and the western panhandle of Texas.

Breeding Habitat: This species uses relatively open forests or woodlots, as well as urban parks and wooded housing areas. It occupies somewhat more open areas than does the red-bellied woodpecker and thus extends farther west.

Nest Location: Nests are typically in rather isolated, generally dead trees or dead tree limbs, especially those with no bark. Cavities are often excavated where there is an existing crack, and they range from about 10 to 50 feet above the ground. The entrance averages about 2 inches in diameter, and its shape is often affected by preexisting cracks.

Clutch Size and Incubation Period: From 4 to 7 eggs (8 Kansas nests averaged 4.0). The eggs are white and rather glossy. The



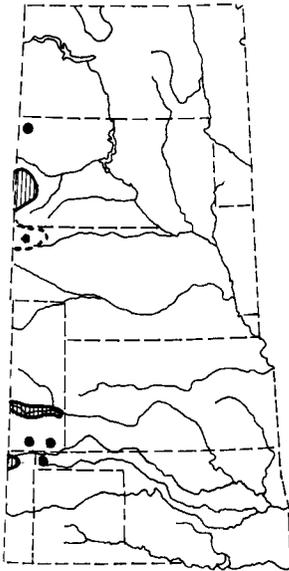
incubation period is 12 days, starting somewhat before the last egg is laid, which results in an extended hatching period. Possibly double-brooded in southern parts of range, and a persistent re-nester.



Time of Breeding: Egg dates in North Dakota are from June 5 to July 23, and in Kansas they extend from the middle of May to the middle of June, with young recorded in the nest as late as early August. Egg dates for Oklahoma are from May 5 to June 2, and dependent young have been seen as late as early August.

Breeding Biology: The breeding behavior of this species is closely similar to that of the red-bellied woodpecker, although they differ in degree of migratory behavior. After males of this species return to their nesting areas, they call from their roosting and prospective nesting holes, apparently to attract mates to their excavations, and they also drum. When a female approaches, the male begins tapping from within the cavity, then typically flies away to allow the female to inspect the hole. He may also solicit copulation by inviting reverse mounting by the female while he is perched near the nest cavity. Mutual tapping at the nest hole seems to indicate that a pair bond is formed and that the female accepts the nesting cavity. Both sexes assist in incubation and brooding, with the male performing these activities at night. In one Illinois study, 3 of 15 pairs nested a second time in one season, sometimes while still feeding their first fledglings. The young birds tend to follow their parents for some time after leaving the nest, until they are chased away after about 25 days.

Suggested Reading: Kilham 1977a; Reller 1972.



Lewis Woodpecker *Melanerpes lewis*

Breeding Status: Breeds uncommonly in the Black Hills of South Dakota and rarely (probably no longer) in the Pine Ridge area of Nebraska (one possible nesting for central Nebraska, in Logan County). Occurs in eastern Colorado cottonwoods nearly to Kansas, and in canyons south of the Arkansas River. Also breeds locally in northeastern New Mexico (Capulin Mountain, Union County) and is probably a previous resident of Cimarron County, Oklahoma.

Breeding Habitat: In the Black Hills, this species prefers the edges of pine forests and streamside cottonwood groves with considerable dead growth, as well as burned-over areas with abundant tall stumps. Elsewhere in their range they also occupy oak woodlands and to a small extent orchards and piñon-juniper woodlands.

Nest Location: Nests average about 25 feet above the ground and are usually in dead trees, less often in dead portions of live trees. Conifers and deciduous species are used about equally, particularly cottonwoods, sycamores, and oaks. The entrance diameter is about 2½ inches, and the cavity is about 12 inches deep. Old nest sites or previously existing cavities tend to be used, probably since the species is poorly adapted to excavating.

Clutch Size and Incubation Period: From 5 to 9 white eggs, usually 6-7. The incubation period has been variously estimated from 12 to 14 or even 16 days, with 13-14 days probably normal. Single-brooded.

Time of Breeding: Colorado egg records are from May 15 to June 20, and nestlings have been seen from June 22 to late July.

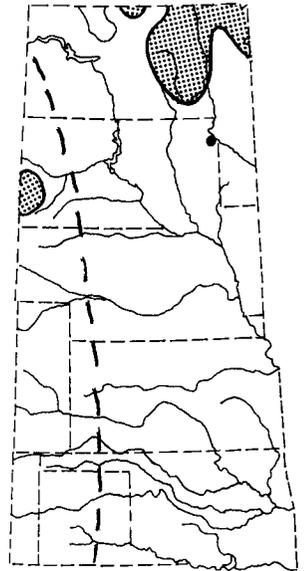
Breeding Biology: Unlike other North American woodpeckers, this species is adapted to feeding on free-living insects and is remarkably adept at aerial flycatching. As the breeding season approaches the male begins to utter his harsh *churr* breeding call, which serves to attract mates and defend or announce nest sites. Males also drum, but mutual tapping and female drumming have not been reported. Copulation is typically preceded by reverse mounting, as in other woodpeckers. Males take the predominant role in selecting the nest site and defending the nest. Since old nest cavities are usually used, little excavation is needed. Males brood and incubate at night, and both sexes share these responsibilities during the day. The fledging time has not been definitely established but is probably between 28 and 34 days. A few days before the young can fly, they move out of the nest cavity and begin to climb about, which exposes them to hawk predation. As the pair leaves the nest vicinity each member takes part of the brood and continues to feed them occasionally until they are able to catch insects on their own.

Suggested Reading: Bock 1970; Bent 1939.

Yellow-bellied Sapsucker *Sphyrapicus varius*

Breeding Status: Breeds in northeastern and north-central North Dakota, primarily in the Turtle Mountains, in northwestern Minnesota, and in the Black Hills of South Dakota.

Breeding Habitat: In North Dakota breeding is done in extensive tracts of deciduous forests in upland or lowland areas. Coniferous forests are also used in Minnesota and South Dakota; in the Black Hills, pine forests and aspen groves are preferred nesting habitats.



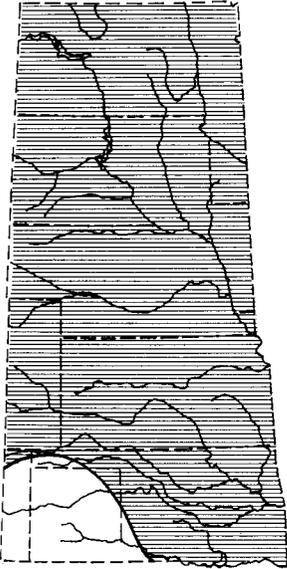
Nest Location: Nests are usually near water, often facing it, and typically are in either dead trees or live trees with decaying hearts. The entrance hole is very small, averaging about 1½ inches, and varies from 8 to 40 feet above the ground. Rarely is the same nest hole used in subsequent years, but a new cavity may be excavated in the same tree. Aspens and poplars are preferred nesting trees, perhaps because they often have rotted interiors.

Clutch Size and Incubation Period: From 4 to 7 eggs, usually 5-6. The incubation period is 12-13 days. Single-brooded.

Time of Breeding: Dates of active nests in North Dakota range from June 19 to July 17, and dependent flying young have been recorded from July 17 to August 22. June and July are likewise the probable nesting months in South Dakota.

Breeding Biology: Males of this migratory species are the first to arrive in breeding areas in spring, and they soon establish territories that they advertise by drumming and territorial conflicts. Most males begin new nest-hole excavations each spring, and unlike other North American woodpeckers they advertise them by a distinctive courtship flight, performed below the level of the partner, emphasizing the distinctive back patterning. Both sexes may perform this flight, which seems to stimulate the pair bond and to build a site attachment to the nest area. Males also perform tapping at a potential nest site, to which the female may respond similarly if she accepts the location. Both sexes help excavate new cavities, and males roost inside such excavations. Both sexes incubate, with the females gradually taking on a greater share. The period of brooding lasts for 8-10 days after hatching, and adults bring both sap and insects to nestlings. Fledging occurs 28 days after hatching.

Suggested Reading: Kilham 1962, 1977b.



Hairy Woodpecker *Picoides villosus (Dendrocopos villosus)*

Breeding Status: Breeds in suitable habitats nearly throughout the area, excepting perhaps eastern New Mexico (breeds in the Cimarron Valley) and the Texas panhandle (no breeding records).

Breeding Habitat: Fairly extensive areas of coniferous or deciduous forest provide optimum breeding habitat, but streamside groves of trees are also used. Deciduous forests seem preferred over coniferous forests.

Nest Location: Cavities are usually in deciduous trees, frequently aspens, ashes, elms, or cottonwoods, but no special preference is

evident. Both live and dead trees are used, but live trees with decaying centers are often selected, and the entrance may be from 5 to 30 feet or more above the ground. The entrance is usually vertically elongated, averaging about 2 by 2½ inches.

Clutch Size and Incubation Period: From 3 to 6 white eggs, usually 4. The incubation period is 11–12 days. Single-brooded, but known to be a regular renester.

Time of Breeding: In North Dakota the probable nesting season is from late April to mid-July. In Kansas the egg records extend from March 21 to May 30, with a peak of egg-laying in early May. Oklahoma breeding dates are from March 6 (nest ready for eggs) to May 24 (young still in nest).

Breeding Biology: Hairy woodpeckers are largely nonmigratory and begin to form pairs in midwinter, about three months before the start of nesting. Typically, males are attracted at this time to territories that the females establish the previous fall. During this time the pair performs drumming duets, and both sexes use drumming to locate a mate when they are visually separated. The male also uses drumming as a territorial display. When searching for a suitable nest site, the birds perform a slow tapping, which tends to attract the mate. At about this time females begin to solicit copulation, but copulation reaches a peak during actual excavation. The males do most of the excavation, working throughout the day and sometimes sleeping in the cavity at night. During incubation the male continues to be most attentive to the eggs, even during daylight. Both sexes brood the nestlings for more than 2 weeks. By about the 17th day the adults begin to feed the young from outside the nest rather than going inside with food. By the time the young are 28–30 days old they emerge from the nesting hole and are able to fly strongly.

Suggested Reading: Lawrence 1967; Kilham 1966.

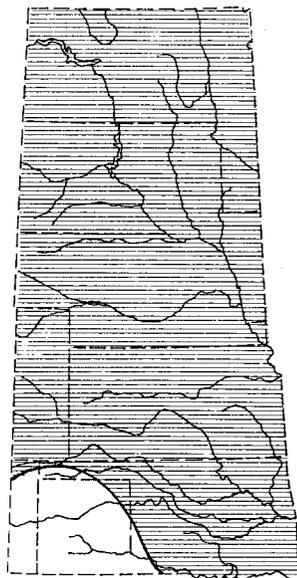
Downy Woodpecker

Picoides pubescens (Dendrocopos pubescens)

Breeding Status: Breeds in suitable habitats nearly throughout the area, except perhaps eastern New Mexico and the Texas panhandle. Rare breeder in the Oklahoma panhandle (one nesting record for Cimarron County).

Breeding Habitat: Basically the same breeding habitats are used as those of the hairy woodpecker, but this species forages in shrubs and tall herbaceous plants as well as in trees.

Nest Location: Nests are usually 8–50 feet above the ground in dead or dying wood but are sometimes in live tree branches. Dead



stubs of aspens are a favored nest site. Nest sites and branches used average very slightly lower and smaller than those of hairy woodpeckers (about 30 feet high and 10 inches in diameter in one study). The entrance is circular, about 1¼ inches in diameter, and is usually on the underside of a branch, or at least is protected from above in some way.

Clutch Size and Incubation Period: From 3 to 6 white eggs, usually 4-5. The incubation period is 12 days. Single-brooded in this area, possibly double-brooded farther south.

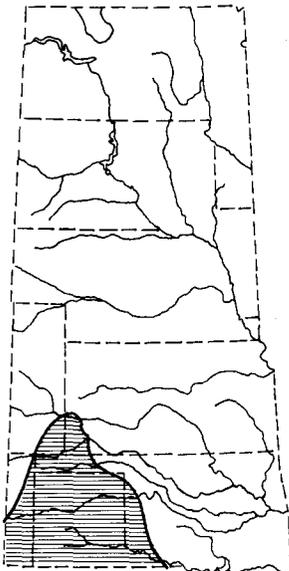
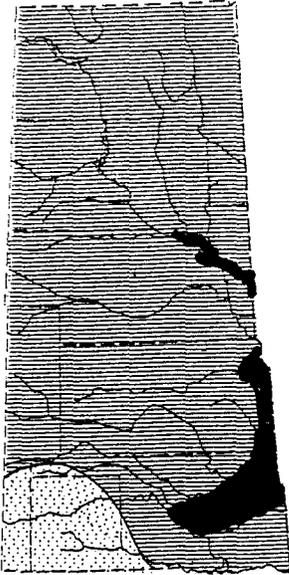
Time of Breeding: The breeding season in North Dakota is from mid-May to mid-July, with egg dates from May 30 to June 7 and nestlings reported as late as July 10. Kansas egg dates are from April 11 to June 10, and Oklahoma egg records extend from March 17 to June 7.

Breeding Biology: Like hairy woodpeckers, this species is non-migratory, and birds spend the entire year near their breeding areas. Toward late winter territorial drumming and associated conflicts begin, and mates often drum at dawn to locate each other when their roosting holes are widely separated. In spring both sexes begin to seek out suitable nest sites, and when one has located a potential site it begins drumming and tapping to attract the other. Short courtship flights occur near the nest and may strengthen site attachment or stimulate copulation, which takes place near the nest. Both sexes help excavate the nest, but usually the female is most active. The male also assists with incubation and spends the night in the nest. For the first week after hatching one or the other adult remains at the nest at all times, but as the young birds develop both adults spend much time foraging. By the time the young are 2 weeks old they can climb to the nest entrance to be fed, and they are ready to fly less than 4 weeks after hatching. Pair bonds break down after the breeding season, and each sex excavates fresh roosting holes for use in winter, when each forages independently of its mate.

Suggested Reading: Kilham 1974; Lawrence 1967.

Ladder-backed Woodpecker *Picoides scalaris* (*Dendrocopos scalaris*)

Breeding Status: Breeds from extreme southeastern Colorado (breeding records for Baca and El Paso counties) and southwestern Kansas (Morton County, possibly Hamilton County) southward through the Oklahoma and Texas panhandles as well as adjacent southwestern Oklahoma. Also breeds in eastern New Mexico (Union County, probably elsewhere).



Breeding Habitat: Generally coextensive with mesquite in Oklahoma; in Texas it occurs in mesquite- and cactus-covered areas, along brush-lined streams, in fencerows, and in cultivated areas near thickets or woods.

Nest Location: Nests are in trees, yucca stems, agave stalks, or utility poles, usually only a few feet above the ground. When in trees, either living or dead wood is used, and the trees may be mesquites, cottonwoods, willows, or a variety of other species. The entrance hole is only about 1½ inches across, and saplings as small as 3½ inches in diameter have been utilized.

Clutch Size and Incubation Period: From 2 to 6 white eggs, usually 4-5. The incubation period is about 13 days. Single-brooded.

Time of Breeding: Eggs or broods have been seen in Oklahoma between May 19 and June 29. Texas egg records extend from April 1 to July 9.

Breeding Biology: This is basically a desert-adapted species, with almost no close relatives in areas where it is abundant, at least in the Great Plains. The two sexes tend to forage in different locations, with females using smaller shrubs or cacti or smaller branches and twigs than males, presumably to reduce competition. Females also tend to specialize in their foraging, while males are more general in their behavior. Pair-formation has been studied rather little, but drumming seems to be infrequently used and not associated with fixed drumming areas. Vocalizations include several call types, and many of the vocal or postural displays are based on aggressive tendencies. They resemble closely the calls and postures of hairy and downy woodpeckers, and the mode of pair formation is probably very similar. Apparently both sexes incubate, and both sexes attend the young. Little is known of the nestlings' life, and the fledging period is still unreported.

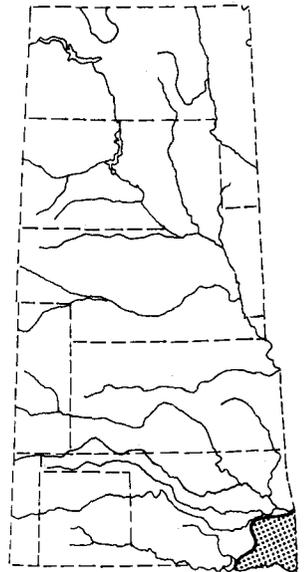
Suggested Reading: Short 1971; Austin 1976.

Red-cockaded Woodpecker *Picoides borealis* (*Dendrocopos borealis*)

Breeding Status: Breeding is limited to a small area of southeastern Oklahoma, with recent populations known only from McCurtain, Latimer, and Bryan counties.

Breeding Habitat: This woodpecker frequents open pine woodland, and in Oklahoma specifically shortleaf pines.

Nest Location: Nests are exclusively in live pines that are diseased with a fungus (*Fomes pini*) that causes rotting of the heartwood.



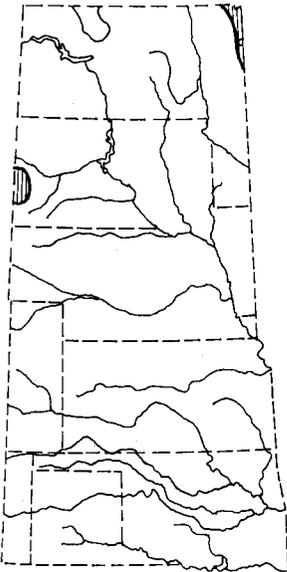
The nest is placed from 18 to 100 feet up, in a roosting cavity of the male, which is bored through the hardwood area into the rotted core area. The birds chip away the bark above and below the nest, producing a sap flow near the entrance that makes the nest hole conspicuous.

Clutch Size and Incubation Period: From 3 to 5 white, glossy eggs. The incubation period is slightly over 10 days, among the shortest known. Single-brooded.

Time of Breeding: Few Oklahoma records are available, but nesting apparently starts early, with hatching possible in early April or even earlier. Young may be fed for as long as 5 months after hatching.

Breeding Biology: These woodpeckers remain territorial throughout the entire year and seem to recognize territorial boundaries. Pairs feed mainly on pines, with the males foraging on the limbs, branches, and higher trunk while the female uses the lower trunk. The center of the territory is the roosting tree, and pairs may use the same tree for many years, or several generations may use the same tree. Typically each member of the pair or family has its own excavated roost. Generally the eggs are deposited on the floor of the male's roosting cavity, but at times the female's roosting cavity may be used. Incubation is performed by both members of the pair, and probably begins before the clutch is complete, so that the eggs hatch over a period of several hours. The young are brooded almost continuously for their first 4 days of life, and both brooding and feeding may be shared with a "nest helper," which at least in one case was known to be a male offspring of the previous year. The young fledge 26–29 days after hatching but remain dependent on their parents or the nest helpers for a remarkably long period thereafter. They apparently remain with their parents until at least the following spring and thus are unlikely to breed in their first year.

Suggested Reading: Ligon 1970; Steirly 1957.



Black-backed Three-toed Woodpecker *Picoides arcticus*

Breeding Status: Breeds locally and infrequently in northern Minnesota (nesting records for Clearwater and Becker counties) and uncommonly in the Black Hills of South Dakota.

Breeding Habitat: Associated everywhere with coniferous forests, particularly those having an abundance of dead trees, as in areas that have recently been burned or logged.

Nest Location: Nests may be in live trees (primarily those with dead interiors), dead trees, stubs, or utility poles. Usually nests are no more than 15 feet above the ground and have entrances less than 2 inches in diameter, usually strongly beveled at the lower side. The bark around the entrance may also be removed, making the cavity conspicuous.

Clutch Size and Incubation Period: From 2 to 6 white eggs, often 4. The incubation period is probably about 14 days. Single-brooded, but renesting has been reported.

Time of Nesting: Active nests in Minnesota have been reported from May 9 to June 22, and nearly grown young accompanied by their parents have been seen in mid-July. The estimated nesting season in the Black Hills is also May through July, with young birds reported from June 20 to July 25.

Breeding Biology: This is a relatively eruptive species, coming into areas shortly after logging or forest fires, breeding for a few seasons, then disappearing again. The birds seem to feed exclusively on conifers, and usually nest in them, but have at times been found nesting in aspens. Dead tamarack and spruce swamp areas are favored foraging areas for this species in northern Minnesota, and the birds are usually found in pairs or probably family groups of three or four individuals. Little is known of pair-forming behavior, but both sexes help in excavating the nesting hole and, as might be expected, both sexes incubate. Probably the male does most of the feeding of the young, and the species mainly eats the larvae of wood-boring beetles. Thus the bird is extremely beneficial in controlling this serious enemy of coniferous forests. There is no specific information available on the length of time to fledging.

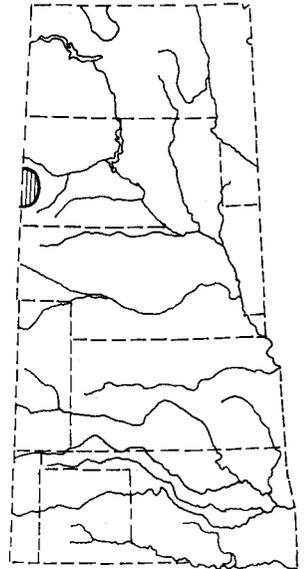
Suggested Reading: Roberts 1932; Bent 1939.

Northern Three-toed Woodpecker *Picoides tridactylus*

Breeding Status: Breeds very rarely in northern Minnesota (one breeding record for Clearwater County) and the Black Hills of South Dakota (one nesting record).

Breeding Habitat: Coniferous forests, especially spruces and tamaracks, provide nesting habitat for this species.

Nest Location: Nests are usually in live or dead coniferous trees, especially those in burned areas. The entrance is usually less than 40 feet above the ground and is about 2 inches in diameter, with the lower side strongly beveled.



Clutch Size and Incubation Period: Typically 4 white eggs. The incubation period is estimated to be 14 days. Single-brooded.

Time of Breeding: The only definite Minnesota breeding record is of a young bird seen with its parents in early July. A nest of 3 fresh eggs was found in the Black Hills in mid-June.

Breeding Biology: This relatively little-studied species, like the other three-toed woodpecker, seems to be a fire-adapted form that rapidly colonizes stands of recently burned trees that are being attacked by bark-boring beetles. It also occupies undisturbed stands of virgin forest where there are old trees with diseased or decayed hearts. About three-fourths of the food of both three-toed species consists of wood-boring beetle larvae, with caterpillars being of secondary significance. The birds often strip bark from large areas of the trees as they search for wood-borers. They also are relatively tame so their presence is usually easy to detect. Almost nothing is known of their social behavior, but it is probably little different from that of the other American *Picoides* species. Both sexes are known to assist in incubation and in rearing the young, with the male often taking on most of these responsibilities. They are rather sedentary birds and probably maintain foraging territories throughout the year.

Suggested Reading: Bent 1939; Gibbon 1966.

