Birds of the Great Plains: Family Fringillidae (Grosbeaks, Finches, Sparrows, and Buntings)

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FAMILY FRINGILLIDAE
(GROSBEAKS, FINCHES, SPARROWS, AND BUNTINGS)

Cardinal
Cardinal

Cardinalis cardinalis (Richmondena cardinalis)

**Breeding Status:**Breeds from the Red River Valley of southeastern North Dakota (north to Cass County) southward through adjacent southwestern Minnesota, eastern South Dakota (north along the Missouri River at least to Dewey County), most of Nebraska (west to Cherry, Thomas, and Deuel counties), eastern Colorado (at least to Morgan County), virtually all of Kansas (local and infrequent west of Seward, Hamilton, and Cheyenne counties), Oklahoma (west locally at least to Texas County), and the eastern panhandle of Texas (west at least to Potter County). The northern range limits of this species have expanded considerably in this century (*Wilson Bulletin* 68:111-17).

**Breeding Habitat:** The species is associated with forest edges or brushy forest openings, parks and residential areas planted to shrubs and low trees, and second-growth woods, and with river bottom gallery forests in grasslands.

**Nest Location:** Nests are usually 3-8 feet (rarely to 40 feet) in dense shrubbery, small trees, vines, or briar thickets. The nest is constructed of twigs, vines, and other materials in a loose cup, lined with fine grasses and hair. The nests are usually well concealed in forks or in mats of vine stems but at times are placed very close to human traffic patterns.

**Clutch Size and Incubation Period:** From 3 to 6 eggs (65 Kansas clutches averaged 3.5). The eggs are grayish to bluish white, with brown dots, spots, and blotches varying greatly in extent. The incubation period is 12-13 days. Regularly multiple-brooded in our region.

**Time of Breeding:** Nests with eggs have been found in North Dakota and Minnesota from late April to early June. In Kansas the range of egg dates is from April 1 to September 20, with a peak in initial clutches about May 1, followed by asynchronous breeding through the summer. Texas egg records extend from March 3 to July 31.

**Breeding Biology:** Pair bonds are probably fairly permanent in this relatively sedentary species, and toward the end of winter males show such signs of the reawakening of sexual behavior as tolerating females on the same feeding platform and sometimes directly feeding them. Territorial display begins early; the males sing in prominent locations and chase other males away. Thus nonbreeding assemblages gradually break up, and females begin to seek out suitable nest sites. The female usually builds the nest alone, over a period of 3 to 9 days, and lays the first egg within a week of its completion. Normally the female incubates alone, although at times males have been observed sitting on the nest. Both parents feed the nestlings, which leave the nest in 7-11 days.
and are able to fly well by the time they are 19 days old. By about 45 days the young are completely independent of their parents, which by then have usually begun another brood. At least three broods are commonly raised in a season, and in some areas as many as four are fairly common.

**Suggested Reading:** Laskey 1944; Bent 1968.

**Rose-breasted Grosbeak**

*Pheucticus ludovicianus*

**Breeding Status:** Breeds in western Minnesota and eastern North Dakota to the Souris River and rarely the Missouri River (*Wilson Bulletin* 85:230-36), southward through eastern South Dakota west at least to Todd County (*Wilson Bulletin* 85:1-11), eastern Nebraska west to Garfield and Buffalo counties (*Nebraska Bird Review* 29:19), eastern Kansas west locally to Rawlins County (Rising 1974), and eastern Oklahoma (west locally at least to Kay and Cleveland counties). Hybridization with the black-headed grosbeak makes the western limits of this species rather difficult to define (*Auk* 79:399-424).

**Breeding Habitat:** The species is associated with relatively open deciduous forests on floodplains, slopes, and bluffs. The relative development of the understory is apparently not particularly important in this species (*Wilson Bulletin* 86:7).

**Nest Location:** In a South Dakota study, most grosbeak nests (both species) were 10-19 feet above the ground, and box elders were favored nesting trees. More generally the forks and crotches of various deciduous trees are used, and the nest is poorly constructed of twigs and grasses, lined with fine twigs and rootlets.

**Clutch Size and Incubation Period:** From 3 to 5 eggs (6 North Dakota nests averaged 3.8). The eggs are pale grayish to bluish, with dark brownish spots and blotches around the larger end, often forming a cap or wreath. The incubation period is 12-14 days. Usually single-brooded; double-brooding is reported in semicaptive birds.

**Time of Breeding:** North Dakota egg dates are from May 31 to June 27. In Kansas, eggs have been reported from May 11 to July 11, with a probable peak of laying in early June.

**Breeding Biology:** Immediately after the males return to their breeding areas in spring, they establish territories and begin to announce them with a warbled song and aggressive encounters with other males. Females arrive a few days later and are initially chased aggressively by males. Soon the male stops chasing the female, and she may attack him instead. Courtship feeding of the female is apparently uncommon in this species. The female builds the nest with the help of the male, and the male regularly partici-
pates in incubation. Both sexes care for the young, and at least in two cases the males have been known to take over the care of young birds while the female began a second nesting. The young remain in the nest 9–12 days.

**Suggested Reading:** Dunham 1966; Bent 1968.

**Black-headed Grosbeak**

*Pheucticus melanocephalus*

**Breeding Status:** Breeds in western North Dakota east to the Missouri River and rarely to the Souris River, in western South Dakota east at least to Charles Mix County, and occurs as hybrids to Clay County (*Wilson Bulletin* 86:5), in Nebraska eastward locally to at least Rock, Garfield, and Hall counties (*Nebraska Bird Review* 29:19), in northwestern Kansas (east locally or sporadically at least to Cloud and perhaps Sedgwick counties, but mostly confined to the northwestern counties), and northeastern Colorado (at least the Platte Valley). The only other breeding record for our region seems to be Quay County, New Mexico. Eastern limits of breeding are confused by frequent hybridization with the rose-breasted grosbeak (*Auk* 79:399–424; *Wilson Bulletin* 85:230–36).

**Breeding Habitat:** The species is associated primarily with relatively open stands of deciduous forest in floodplains or uplands, especially those with well-developed understories. Also found secondarily in orchards, brushy woodlands or chaparral, and parks or suburbs with many trees.

**Nest Location:** The nest location and nest structure of this species seems to be identical to that of the rose-breasted grosbeak. Nests average about 10 feet above the ground and are usually in crotches or forks of horizontal or vertical branches of deciduous trees. The nest is a bulky structure of slender twigs, stems, and rootlets, lined with rootlets and fine stems.

**Clutch Size and Incubation Period:** From 2 to 5 eggs, usually 3 or 4. The eggs are not distinguishable from those of the rose-breasted grosbeak. The incubation period is 12 days. Probably single-brooded.

**Time of Breeding:** The probable breeding season in North Dakota extends from late May to late July. In Kansas the egg records are from May 11 to July 10, with a peak of egg-laying in early June.

**Breeding Biology:** So far as is known, the breeding biology of this species is essentially identical to that of the rose-breasted grosbeak. Studies of these two closely related forms in North Dakota indicate that the courtship behavior of the two is very similar, and
thus the color differences among the males are likely to be important in avoiding more widespread hybridization than occurs. Males apparently do not discriminate between the songs of their own and the other species, but do make visual discriminations when confronted with mounted males placed in their territories.

**Suggested Reading:** Weston 1947; Kroodsma 1970.

**Blue Grosbeak**  
*Guiraca caerulea* (*Passerina caerulea*)

**Breeding Status:** Breeds from central South Dakota (north at least to Haakon and Dewey counties, *Nebraska Bird Review* 29:11) southward through virtually all of Nebraska (local in east), western Iowa (uncommonly), northwestern Missouri (occasionally), Kansas (increasingly common to west), eastern Colorado (uncommonly), Oklahoma (throughout), northern Texas and northeastern New Mexico.

**Breeding Habitat:** The species is associated with weedy pastures, old fields growing up to saplings, forest edges, streamside thickets, and hedgerows.

**Nest Location:** Nests are placed 3-12 feet high in a variety of shrubs, small trees, vines, and so forth, usually at the edge of a clearing. The nest is compactly constructed of grasses, bark strips, and stems, frequently incorporating snakeskins, and is lined with grasses and rootlets.

**Clutch Size and Incubation Period:** From 3 to 5 eggs, usually 4. The eggs are pure white to a pale blue that fades to white. The incubation period is 12 days, with about 2 days required to complete hatching in one case (Bailey and Niedrach 1965). Double-brooded.

**Time of Breeding:** Kansas egg records are from May 21 to June 30, with a peak of egg-laying in late May or early June. In Oklahoma, egg records are from May 26 to August 6, with fledglings just out of the nest seen as late as August 28.

**Breeding Biology:** Although relatively little has been written on the breeding biology of this species, it is probably much like that of the indigo and lazuli buntings. The nests are typically built quite close to the ground, and incubation is by the female alone. The young are fed actively by both parents and remain in the nest for 9-13 days. In one Colorado nesting, a female finished laying her second clutch in a nest 58 feet away from the first nest site almost exactly a month after she completed her first clutch. She would thus have had to begin the second nest very shortly after fledging the first brood.

**Suggested Reading:** Stabler 1959; Bent 1968.
Indigo Bunting
*Passerina cyanea*

**Breeding Status:** Breeds in North Dakota primarily east of the James River, but common in the lower Missouri and rarely extending west into its tributaries, through South Dakota west locally to the Black Hills and the Wyoming border, Nebraska west to the Pine Ridge area and in the South Platte Valley to the Colorado border, in Kansas west at least to Ford and Clark counties, in Oklahoma west regularly to Grady County and occasionally to Alfalfa County. The western limits of this species are greatly confused by hybridization with the lazuli bunting in North Dakota (Kroodsma 1970), South Dakota and Nebraska (*Auk* 76: 433-63), western Kansas (Johnston 1964), and Oklahoma (Sutton 1967).

**Breeding Habitat:** The species is associated with relatively open hardwood forests on river floodplains or in uplands. Although it occasionally breeds inside forests, it is most often associated with open, drier woodland, favoring sites with decreased forest canopy and sapling density, and increasing shrub density. Thus, orchards, weedy fields, forest edges, second-growth, and similar successional habitats are all widely used.

**Nest Location:** Nests are in the crotches of shrubs, in vine tangles, or in low trees, at heights of 2-12 feet above the ground. The nest is built of grasses, twigs, bark strips, and weeds, lined with grasses and other soft materials.

**Clutch Size and Incubation Period:** From 2 to 4 eggs (17 Kansas clutches averaged 3.1). The eggs are white to pale bluish white. The incubation period is 12-13 days. Frequently double-brooded.

**Time of Breeding:** Minnesota egg dates are from June 6 to late June, and fledglings have been seen as early as July 4. In Kansas, egg records are from May 11 to August 20, with a peak of egg-laying in mid-June. Oklahoma egg dates range from May 13 to July 11, and dependent young have been seen as late as September 14.

**Breeding Biology:** In this species it is apparently the female that not only selects the specific nest site but also does all the actual construction. Sometimes nesting concentrations are very dense, such as 14 nests found in a 3-acre cotton patch in Mississippi. Both sexes help feed the young, though only the female broods them, and sometimes the male may take charge of older nestlings so the female can begin a second nesting. Usually a new nest is built for the second clutch, but sometimes the same one is used twice.

**Suggested Reading:** Bent 1968; Sibley and Short 1959.
Lazuli Bunting  
*Passerina amoena*

**Breeding Status:** Breeds in North Dakota, primarily in the Missouri and Souris valleys and their tributaries, in South Dakota primarily west of the Missouri River, in western Nebraska (common in the Pine Ridge area, occasionally east to Cherry County; the Platte Valley population is largely hybrid), eastern Colorado, southwestern Kansas (common in Morton and Hamilton counties), western Oklahoma (panhandle and east at least to Ellis and Roger Mills counties; hybrids seen east to Marshall County). Presumably the Texas panhandle is part of the breeding range, but there have been no recent nesting records, and likewise there are no definite breeding records for northeastern New Mexico. The eastern limits of this form's range are greatly obscured by hybridization (*Auk* 76:443-63), and there may have been some recent range retractions as well (*Wilson Bulletin* 87:145-77).

**Breeding Habitat:** Seemingly, this species' habitat needs are identical to those of the indigo bunting—rather diverse habitats having an abundance of shrubs, low trees, and herbaceous vegetation. In much of the arid west it is associated with rivers or streams, which are often the only areas that support shrubs and trees.

**Nest Location:** Nests are usually 1-4 feet above the ground, in shrubby growth, and rarely as high as 10 feet. The nest cannot be distinguished from that of the indigo bunting, nor can the eggs.

**Clutch Size and Incubation Period:** From 3 to 5 eggs, usually 4. The eggs are very pale bluish white. The incubation period is 12 days. Double-brooded.

**Time of Breeding:** In North Dakota, the probable breeding season is from early June to late August. In the Black Hills of South Dakota the nesting season is from late May through July, with nestlings seen as early as June 10. In Kansas, eggs are laid in June and July, and Oklahoma eggs have been found as early as May 26.

**Breeding Biology:** The breeding biology of this species can be considered identical to that of the indigo bunting. In the Great Plains these two species overlap appreciably, and the two forms occasionally hybridize (about 6-7 percent in one study). Playbacks of songs indicate that in some areas males respond only to the song of their own species and ignore that of the other, but in one area of sympathy (Chadron, Nebraska) males responded to both song types. This suggests that learning may be involved in song recognition. Mixed matings in areas of sympathy are infre-
quent and seem to exhibit delayed breeding characteristics compared with nonmixed pairs.

**Suggested Reading:** Emlen, Rising, and Thompson 1975; Bent 1968.

**Painted Bunting**  
*Passerina ciris*

**Breeding Status:** Breeding is mostly restricted to the eastern half of Oklahoma, westward to Alfalfa, Blaine, Caddo, and Jefferson counties, but locally west to the Texas border and to northeastern Beaver County. Breeding also occurs infrequently in southeastern Kansas, west to Barber and north to Shawnee and Douglas counties (*Bulletin of the Kansas Ornithological Society* 21:7-8).

**Breeding Habitat:** Habitats used in Oklahoma include thickets, shelterbelts, wooded ravines, and forest edges. In some parts of its range the species nests regularly in cities, and it also is frequently found in shrubby river bottoms.

**Nest Location:** Nests are usually in low bushes or vine tangles at heights of 3-6 feet, rarely as high as 25 feet. The nest is a shallow cup constructed of grasses, leaves, and weed stems, lined with grasses, rootlets, and hair.

**Clutch Size and Incubation Period:** From 3 to 5 eggs, usually 4. The eggs are pale bluish or grayish white with reddish brown spotting. The incubation period is 11-12 days. Regularly double-brooded, sometimes triple-brooded in the south.

**Time of Breeding:** In Kansas, eggs are laid in June and July. Oklahoma nesting dates are from May 23 (eggs) to July 9 (brood fledging). Texas egg dates range from April 27 to August 19.

**Breeding Biology:** Male painted buntings are highly territorial and frequently engage in extended fights while they are establishing territories and while females are arriving. Apparently most of the obligations of reproduction, including nest-building, incubation, and brooding, are undertaken by the female alone. It has been suggested that the male does not even participate in feeding the young while they are in the nest, though he occasionally may feed them after they have fledged. This seems rather unlikely, particularly inasmuch as at least two breedings are common in this species, and thus it would be advantageous for the male to participate fully in care of at least the first brood.

**Suggested Reading:** Bent 1968; Parmelee 1959.
Dickcissel
*Spiza americana*

**Breeding Status:** Breeds in suitable habitats throughout North Dakota except the extreme northwestern corner, in southwestern Minnesota, and western Iowa, essentially all of South Dakota, all of Nebraska except the southwestern counties, throughout Kansas (local in the extreme west) throughout Oklahoma (local in the panhandle), and the Texas panhandle (common only in northern counties). There are no breeding records for northeastern New Mexico and no definite breeding records for eastern Colorado, where it probably nests in the Platte Valley at least to Logan County (*Nebraska Bird Review* 29:11). This species’ range has increased considerably in this century (*Auk* 93:112-15).

**Breeding Habitat:** The species is associated with grasslands having tall grasses, forbs, or shrubs, or with croplands planted to crops such as timothy, alfalfa, and clover.

**Nest Location:** Nests are from ground level (usually) to about 12 feet (rarely) above the ground in grasses, weeds, or sometimes trees or shrubbery. They are often in natural depressions, well hidden by vegetation. The nest is built of weeds, grass stems, and leaves, lined with fine grasses, rootlets, and hair. Of 108 Oklahoma nests, only 26 were on the ground, and most were in various tree species, but generally throughout the range ground-nesting seems prevalent.

**Clutch Size and Incubation Period:** From 3 to 5 eggs (14 Kansas clutches averaged 4.1). The eggs are pale blue and unmarked. The incubation period is 11-12 days. Possibly double-brooded, at least in southern areas.

**Time of Breeding:** In North Dakota the probable breeding season is from early June to mid-August. Kansas egg records are from May 1 to July 10, with a peak of egg-laying in early May. Oklahoma egg records are from May 26 to August 8, and Texas egg records are from April 16 to July 30.

**Breeding Biology:** This is one of the rather few species of North American passerine birds that regularly practices polygyny; a Kansas study indicated that 18 percent of the males had more than one mate, 40 percent were monogamous, and 42 percent were unmated. The variable success of males in attracting females seems to be related to the nest sites available in their individual territories. The females build the nests and perform all the incubation; the male also feeds the young little if at all. Males usually obtain second mates during the laying or incubation phases of the first nesting cycle. Young birds remain in the nest 8-10 days and tend to be very silent until within a day or two of leaving it.

**Suggested Reading:** Harmeson 1974; Zimmerman 1966.
Evening Grosbeak  
*Hesperiphona verspertina*

**Breeding Status:** Rare breeder. It is reported to breed at Itasca State Park, Clearwater County, Minnesota, and breeding has been inferred in Beltrami County. The only other area of known breeding is western South Dakota, where it regularly nests in Spearfish Canyon in the Black Hills, and has bred near Belle Fourche, Butte County.

**Breeding Habitat:** The species is associated with mature coniferous forests for the most part, but nests have also been found in willows growing beside rivers and even in city gardens near roads or sidewalks.

**Nest Location:** Nests are 15-125 feet above the ground, usually between 20 and 60 feet, on the forks of horizontal limbs of conifers. The nest is rather loosely constructed, consisting of a foundation of twigs on which are placed mosses, lichens, and grass fibers or rootlets, and is lined with finer materials.

**Clutch Size and Incubation Period:** From 2 to 5 eggs, usually 3-4. The eggs are blue to bluish-green, with dark spots, blotches, and sometimes fine lines. The incubation period is 11-14 days. Apparently double-brooded.

**Time of Breeding:** No specific egg dates are available for Minnesota, but Manitoba and Michigan egg records are concentrated between June 18 and June 24. Dependent fledglings have been seen in Minnesota as early as July 18. A female that had apparently laid 3 eggs was collected on June 11 in Spearfish Canyon, northern Black Hills.

**Breeding Biology:** Surprisingly little is known of the breeding biology of this handsome species. In winter the birds are gregarious and are strongly attracted to box elder trees, where they feed on the hanging seeds, as well as to various species of maples. Courtship displays seem to consist of the male's crouching, then spreading and quivering his wings while fluffing his plumage. Females solicit courtship feeding by bobbing their heads and swaying their bodies in front of males while fluttering their wings; this or a similar display with tail-raising precedes copulation. Males apparently accompany their mates while the females gather nesting materials, but presumably the female does all the nest-building. The female also incubates, but the male feeds her both off and on the nest. The fledging period is still unreported, but in one case the first egg of a second clutch appeared when the single nestling of the first cycle was only 11 days old and still in the nest.

**Suggested Reading:** Bent 1958.
Purple Finch  
*Carpodacus purpureus*

**Breeding Status:** Known breeding is limited to north-central Minnesota (Clearwater County); probably the more northerly wooded areas of Minnesota and the Turtle Mountains of North Dakota are also part of the breeding range. The only definite recent nesting records for North Dakota are from Grand Forks County, in 1971 and 1972.

**Breeding Habitat:** The species frequents coniferous forests, mixed forests, and plantings of conifers.

**Nest Location:** Nests are usually in coniferous trees, especially spruces, but sometimes are in deciduous trees or shrubs. Nests are near the treetops, up to about 40 feet high, on horizontal branches. They are built of grasses and roots, lined with fine grasses and hair.

**Clutch Size and Incubation Period:** From 4 to 6 eggs, usually 4 or 5. The eggs are greenish to bluish, with brown specks and spots, often concentrated at the larger end. The incubation period is 13 days. Single-brooded.

**Time of Breeding:** Minnesota breeding records extend from May 22 (nest-building) to July 4 (young just out of nest).

**Breeding Biology:** As part of his display the male does a “dance” in front of the female, often with a bit of nesting material in the mouth. Crest-raising, tail-cocking, and wing-drooping are all part of this sequence, which apparently serves as a premating display in some instances. Both sexes apparently assist in nest-building, and the male sometimes has been reported on the nest, though it is doubtful that he actually incubates. The young are fed by both parents and leave the nest in about 14 days.

**Suggested Reading:** Bent 1968.

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House Finch  
*Carpodacus mexicanus*

**Breeding Status:** Breeds from the Scottsbluff area of Nebraska (one record from Lincoln County; *Nebraska Bird Review* 21:38) southward through eastern Colorado, northwestern Kansas (*Bulletin of the Kansas Ornithological Society* 28:9), the Oklahoma panhandle (Cimarron County), northeastern New Mexico (Union and Quay counties), and the western panhandle of Texas (Oldham County).
Breeding Habitat: The species breeds in open woods, river-bottom thickets, scrubby or desert vegetation, ranchlands, and suburbs or towns.

Nest Location: Most nesting in trees occurs in the open interior area, often in the fork of an upper limb, and usually only about 5-7 feet above the ground. Old nests of other species, including woodpeckers, swallows, and even hawks, are often used, but in cities most nests are placed on ledges, in cavities, or on other supports provided by buildings. Nests vary greatly but often are composed of dry stems and leaves with a soft lining.

Clutch Size and Incubation Period: From 2 to 6 eggs, usually 4-5. The eggs are bluish white with spots, specks, and streaks of brown or black. The incubation period is 12-14 days. Double-brooding has frequently been noted, and as many as three broods have been reported in Colorado.

Time of Breeding: Nesting in Colorado begins in mid-April; second nestings occur in middle to late May, and third broods may extend into July.

Breeding Biology: This species has a courtship display similar to that of the purple finch, with the male approaching the female with his tail spread and cocked and his wings lowered, uttering chirps and trills. Courtship feeding of the female also occurs during pair-formation and frequently during incubation. Both sexes help in nest-building, which requires from 2 to 11 days, with males helping mainly in the early stages. The female incubates and broods alone, but both sexes bring in food. The young remained in the nests for an average of 15 days in a California study and nearly 18 days in a Hawaiian study. In Colorado it has been reported that females frequently begin to gather nesting materials for their second brood while followed by begging young that are still partially covered with down.

Suggested Reading: Van Riper 1976; Evenden 1957.

Pine Siskin
*Carduelis pinus (Spinus pinus)*

Breeding Status: Breeds regularly only in north-central and northern Minnesota (probably at least Clearwater County), in the Black Hills of South Dakota (abundant), and in the Pine Ridge area of northwestern Nebraska (common to abundant). Elsewhere breeding is erratic, as in North Dakota, where sporadic breeding has occurred throughout the state, and also in South Dakota (South Dakota Bird Notes 27:4). Nesting has occurred in
a number of eastern and southeastern Nebraska counties following cold springs (Wilson Bulletin 41:77), and in Ellis, Cloud, and Pottawatomie counties, Kansas. There is also occasional nesting in eastern Colorado (Lincoln County). The only breeding record for Oklahoma is from Cimarron County.

**Breeding Habitat:** In the Black Hills and Pine Ridge area the species breeds in pine forests or isolated stands and also in spruces as well as in deciduous trees in canyons, hollows, or gulches. Evergreen plantings are also used in some areas.

**Nest Location:** Nests are usually in conifers, 6-25 feet above the ground, on horizontal branches well out from the trunk. The nest is a large but shallow cup of twigs, grasses, bark strips, and rootlets, lined with rootlets, mosses, and other soft materials.

**Clutch Size and Incubation Period:** From 2 to 6 eggs, usually 3-4. The eggs are pale greenish blue with blackish specks or spots. The incubation period is 13 days. Single-brooded.

**Time of Breeding:** In North Dakota the estimated breeding season is from mid-April to mid-June, and in South Dakota it is probably from May through July. In Colorado siskins are said to nest in the plains from May 15 to June 1, and Nebraska egg records are from March 29 to May 13.

**Breeding Biology:** During the nonbreeding season, siskins are highly gregarious; in late winter courtship begins in large flocks, when singing and chasing begins. Courtship feeding of the female is frequent, as are song flights by the male around a particular female. Frequently, nesting occurs in rather loose colonies, with the birds alternating between nest-building and social flocking. The female chooses the nest site and carries in the necessary materials; the male accompanies her and performs courtship feeding during this period as well as during incubation. Gregarious tendencies persist through the incubation period, and thus there is little territorial exclusion. Only the female incubates, but both sexes feed the young, which leave the nest in 14-15 days.

**Suggested Reading:** Bent 1968; Weaver and West 1943.

American Goldfinch
*Carduelis tristis* (*Spinus tristis*)

**Breeding Status:** Breeds in suitable habitats over virtually the entire region, becoming less common southwardly and reaching its usual southern limits in central Oklahoma. It probably breeds south to Grady, Caddo, and Roger Mills counties in Oklahoma, it occurs in the Texas panhandle during summer, though there are no breeding records, and there are likewise no breeding records for northeastern New Mexico, although birds have been seen in the Cimarron Valley during the summer.
Breeding Habitat: The species frequents open grazing country, farmyards, swamps, weedy fields, and other habitats where thistles or cattails are likely to occur.

Nest Location: Nests are usually 5-15 feet high in a cluster of upright branches or the fork of a horizontal limb of a tree, rarely between 1 and 35 feet high. Nests are tightly woven of plant fibers, lined with the down of thistles and cattails, frequently bound around the rim with spider webbing.

Clutch Size and Incubation Period: From 3 to 6 eggs (8 Kansas clutches averaged 4.4, and 5 North Dakota clutches averaged 4.8). The eggs are pale bluish white and unmarked. The incubation period is 12-14 days. Occasionally double-brooded.

Time of Breeding: North Dakota egg dates are from July 2 to August 15. In Kansas, egg records extend from June 20 to September 10, with an early August peak. In Oklahoma eggs have been found from June 1 to August 27.

Breeding Biology: These gregarious birds remain in flocks well into late spring, and pair-formation begins among flocking birds in May or possibly earlier. It is achieved by courtship singing, courtship flights by a female and varying numbers of males, a hovering song flight by males, and true song resembling that of a canary. Pair bonds are maintained by courtship feeding, which occurs from egg-laying through the nestling period. Nesting is delayed until there is an abundant supply of composite seeds to feed the young. Nest-building and incubation are by the female alone, but both sexes feed the young by regurgitation. The nestlings fledge at 10-16 days, at which time the male takes over most of the feeding. This frees the female to begin a new nest, which sometimes happens within 3 days of fledging.

Suggested Reading: Stokes 1950; Bent 1968.

Lesser Goldfinch
*Carduelis psaltria* (*Spinus psaltria*)

Breeding Status: Breeding in our region is apparently limited to northwestern Cimarron County, Oklahoma, and probably Union County, New Mexico (common summer resident at Capulin Mountain National Monument).

Breeding Habitat: The species is associated with mixed scrub oaks and ponderosa pine in Colorado, with relatively open oak or oak-pine woodlands in general, and also with chaparral and stream-side thickets.

Nest Location: Nestings are often loosely colonial, with the nests placed 1-25 feet above the ground, generally in low trees or
bushes. The nest is neatly constructed of grasses, weed stems, and similar materials, lined with wool or feathers.

**Clutch Size and Incubation Period:** From 3 to 6 white eggs, usually 4-5. The incubation period is 12 days (Bailey and Niedrach 1965). Single-brooded, but known to renest.

**Time of Breeding:** Egg records for Oklahoma are in the first half of June. In Colorado the nesting period is from late May to early July.

**Breeding Biology:** On the basis of studies in California, there appears to be a rather rapid development of pair bonds in lesser goldfinches, occurring within 2 weeks after spring flocks arrive. Increasing aggression breaks up the flocks, and a series of vocalizations and flights similar to those of the common goldfinch are associated with pair-formation. As the members of a pair become more tolerant of each other, they perform a “billing” display, which soon develops into true courtship feeding of the female. Males accompany their mates as they search for nestsites, but only occasionally do the males help carry materials to the nest. It requires 4-8 days for the female to complete the nest, and territories are not defended until the nest site is established. Nesting tends to occur in loose colonies; thus the territories serve primarily to isolate nesting females. As in other goldfinches, the young are fed regurgitated food, mostly seeds, and they fledge in 12-15 days.

**Suggested Reading:** Coutlee 1968; Linsdale 1957.

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**Red Crossbill**  
*Loxia curvirostra*

**Breeding Status:** Regular breeding is probably confined to northern Minnesota (at least including Clearwater County), but there is also a breeding record for Clay County. In North Dakota breeding is erratic (Towner, Burleigh, and Stutsman counties). There is occasional breeding in the Black Hills of South Dakota and also in the Pine Ridge area of Nebraska (*Nebraska Bird Review* 40:71). There is a single old nesting record for Kansas, from Shawnee County.

**Breeding Habitat:** The species is associated primarily with spruce and pine forests in our region. It is also rarely found breeding in deciduous woods but essentially is adapted to opening the cones of spruces and, to a lesser extent, pines.

**Nest Location:** Nests are normally in conifers, at heights of 10-40 feet, on horizontal branches well away from the trunk. They are rather bulky structures, of twigs, plant stems, needles, and *Usnea* lichens, lined with grass and other soft materials.
Clutch Size and Incubation Period: From 3 to 5 eggs, usually 4. The eggs are pale bluish to greenish white, with dark spots and dots, especially at the larger end. The incubation period is 13-16 days. Sometimes double-brooded.

Time of Breeding: Nesting in the Black Hills probably extends from January through July and sometimes lasts longer. In other areas such as Colorado nesting seems to begin extremely early, even in December, and eggs have also been found there as late as mid-September. Breeding is apparently timed to coincide with the period of maximum seed availability from conifers; thus the time of breeding depends on the species of trees in the area, since different conifers shed their seeds at different times. Breeding can occur while the birds are in full molt, or even in birds still in juvenile plumage.

Breeding Biology: Observations of this species in Colorado west of Denver indicate colonial nesting; about 24 pairs were found within a square mile of forest, but few were found elsewhere. Hatched young were found there as early as January 16, as well as nests in progress. The females did the building, which required about 5 days, and another 4 days elapsed before the first egg was laid. Four more days were spent in egg-laying and 14 in incubation, and 20 days were needed for fledging. Fledging times of 16-25 days have been reported; these variations probably depend on food supplies. Some pairs raise two broods in rapid succession. The nesting cycles of these birds are highly irregular; not only may two widely spaced breedings occur in a single year, but young birds may breed the same year that they are hatched.

Suggested Reading: Bailey, Niedrach, and Bailey 1953; Nethersole-Thompson 1975.

White-winged Crossbill
Loxia leucoptera

Breeding Status: A very rare or accidental breeder in the region. Nesting has been inferred at Itasca State Park, Clearwater County, Minnesota, where dependent fledglings have been seen. There is also an unsubstantiated report of nesting in Stutsman County, North Dakota, for several years starting in 1894. No other records seem to exist for the region.

Breeding Habitat: The species is generally associated with tamarack forests, more rarely breeding in spruce or pine forests. This species has a smaller bill than the red crossbill and is less well adapted to opening large cones such as pine cones.

Nest Location: Nests are elevated 5-70 feet above the ground, on horizontal limbs of conifers. The nest is a deep cup of twigs, rootlets, weed stalks, and bark strips, lined with fine grasses,
feathers, and so forth, and not distinguishable from the nest of the red crossbill.

**Clutch Size and Incubation Period:** From 2 to 5 eggs, usually 3-4. The eggs are greenish or bluish white with dark spotting or blotching. The incubation period is unreported but is probably 13-16 days.

**Time of Breeding:** Not definitely established for our region. In Canada nesting has been reported in every month but occurs mainly in spring and fall.

**Breeding Biology:** Little has been written of the courtship of this species, but part of it seems to consist of the males flying above the females in broad circles, while singing continuously. Like other crossbills, the male probably crouches and lowers his wings to exhibit the rump feathers, which are erected. Courtship feeding is almost certainly a part of it too, since it is known that males regularly feed their incubating mates. There has been at least one observation of a male helping in nest construction, but he only added the lining. Both sexes feed the young by regurgitation of semidigested seeds. The age of fledging has not been reported but is likely to be about 3 weeks. At least in other crossbills, the adults continue to feed their young for about a month after fledging, which might be related to their highly specialized feeding behavior.

**Suggested Reading:** Bent 1968; Newman 1972.

Green-tailed Towhee

*Pipilo chlorura (Chlorura chlorura)*

**Breeding Status:** In our region apparently limited as a breeding species to Union County, New Mexico, where it has bred near Clayton and is common during summer at Capulin Mountain National Monument. There are no breeding records from Oklahoma or adjacent parts of Colorado.

**Breeding Habitat:** The species is associated with relatively arid and brushy foothills, sagebrush, open pine forests, and chaparral. In Colorado and New Mexico it occurs from foothills into the lower mountain zone from about 6,000 to 9,000 feet, inhabiting sagebrush slopes, river valleys, and scrub oaks.

**Nest Location:** Nests are on or near the ground in dense shrubbery, averaging about 16 inches above the ground. They are often in sage and less frequently in low trees such as scrub oaks. The nest is constructed of twigs and stems, grasses, and bark, lined with grasses and frequently also horsehair or similar hair.

**Clutch Size and Incubation Period:** From 3 to 5 eggs, usually 4. The eggs are white with extensive brownish spotting and speck-
ling. The incubation period has not yet been reported. Probably double-brooded, or at least prone to renest.

**Time of Breeding:** Colorado egg dates are from June 10 to June 24, and New Mexico egg records are from May 20 to July 10.

**Breeding Biology:** Like the other towhees and the fox sparrow, this species is a ground forager, but it is the most arid-adapted of the North American towhees. Like the related collared towhee of Mexico, it favors dense and brushy vegetation, and like the rufous-sided towhee it often utters catlike mewing call notes. In spite of this bird's widespread occurrence through the arid parts of western United States, very little is known of its breeding biology. In spite of its desert adaptations, however, it is known to be unable to drink salt water.

**Suggested Reading:** Bent 1968.

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**Rufous-sided Towhee**

*Pipilo erythrophthalmus*

**Breeding Status:** Breeds in suitable habitats through much of western and northern North Dakota and northern Minnesota, southward along the Missouri Valley through South Dakota (west to the Black Hills and north along the James River Valley), most of Nebraska (west to Sioux, Thomas, and Deuel counties), northeastern Colorado (probably to Logan County, *Nebraska Bird Review* 29:21), eastern Kansas (west to Rawlins, Marion, and Comanche counties), and extreme northern Oklahoma (one 1917 record from Washington County, and a 1977 record from near Colcord (*American Birds* 31:1157).

**Breeding Habitat:** The species is associated with brushy fields, thickets, woodland edges or openings, second-growth forests, and city parks or suburbs with trees and tall shrubbery.

**Nest Location:** Nests are usually on the ground but may also be in shrubs or vine tangles, as high as 12 feet (rarely) above the ground. The nest is a rather bulky structure built of leaves, weed stems, grasses, bark strips, and fine grasses and other soft materials. Ground nests are often placed under vegetation or brush piles, concealing them from above, and in tree nests the canopy is also usually very dense above the nest.

**Clutch Size and Incubation Period:** From 2 to 6 eggs, usually 3-4 (14 Kansas clutches averaged 4.0). The eggs are white with reddish brown dots or spotting. The incubation period is 12-14 days. Sometimes double-brooded; possibly 3 broods in southern areas.

**Time of Breeding:** North Dakota egg dates are from June 6 to June 20, but Minnesota egg dates range from May 22 to July 23,
with fledglings seen as early as June 13. Kansas egg dates are from April 21 to August 10, with a peak in early May.

**Breeding Biology:** At least in coastal California, territories and pair bonds are established very early, about 2 months before nesting starts. Pair formation is achieved by males singing persistently from a variety of locations in their territory. As pair bonds form the rate of singing drops off, and the two birds forage within the male's territory. The female builds the nest with little or no help from the male, although he sometimes carries about small twigs. The female incubates, but both sexes feed the young. The young leave the nest in 9-11 days.

**Suggested Reading:** Davis 1960; Baumann 1959.

**Brown Towhee**

*Pipilo fuscus*

**Breeding Status:** Limited as a breeding species in the Great Plains to northeastern New Mexico (Quay and probably Union counties), Cimarron County, Oklahoma, and southeastern Colorado (Baca and perhaps Las Animas counties).

**Breeding Habitat:** In southeastern Colorado this species is found in piñon-juniper woodland, as well as in cholla cactus and sage desert areas. In Oklahoma it is limited to mesa areas, where it is found in valleys, slopes, or mesa tops among cactus, juniper, and piñon pines. Generally it is found in chaparral, brushland, woodland, and open habitats such as lawns and gardens.

**Nest Location:** In our region nests are usually a few feet above ground in junipers, sometimes up to 7 feet high and occasionally placed on beams in barns. The nest is a deep cup of grasses and plant stems, lined with fine grasses and often horsehair.

**Clutch Size and Incubation Period:** Usually 3 eggs, sometimes 4. The eggs are very pale gray or blue with spots and blotches of brownish and blackish tones. The incubation period is 11 days. Known to be double-brooded in some areas; up to three broods have been reported in California.

**Time of Breeding:** Colorado egg dates are from May 12 to June 6. In Oklahoma complete clutches have been found as early as May 4 and as late as June 6, but a recently completed nest was also reported in early September, suggesting possible fall breeding after a very dry summer.

**Breeding Biology:** Territories in this species, as studied in California, are rather uniform in size and average 1-2 acres. One male that was banded as a juvenile in Pasadena maintained his territory in the same yard for nearly 5 years, during which time he had
at least three different mates. The female probably builds the nest, and she certainly performs all the incubation. The young remain in the nest for 8 days, and if there is no second nesting the fledglings may remain with the adults 4–6 weeks. When there is a second nesting the adults drive the young birds from their territory at the time the next clutch hatches.

**Suggested Reading:** Bent 1968; Marshall 1960.

**Lark Bunting**

*Calamospiza melanocorys*

**Breeding Status:** Breeds in suitable habitats throughout central and western North Dakota, southwestern Minnesota (north to Traverse County), South Dakota (except the high parts of the Black Hills), western and central Nebraska (east occasionally to York, Clay and Lancaster counties), rarely in Missouri (*Wilson Bulletin* 82:465), western Kansas (east rarely as far as Franklin and Shawnee counties), eastern Colorado, western Oklahoma (east to Grant and Tillman counties), and probably most of the Texas panhandle (rare and irregular). In New Mexico it breeds at least in Union County and probably elsewhere.

**Breeding Habitat:** The natural habitat of this species consists of mixed short grasses and sagebrush, but areas of taller grasses with scattered shrubs are also used, as are disturbed grasslands such as weedy roadsides, retired croplands, and fields of alfalfa or clover.

**Nest Location:** Nests are placed in the ground, often at the base of a shrub or coarse forb, and frequently are sunk flush with the ground level. All of 83 Kansas nests were situated at the bases of plants in such a way as to provide clear visibility in at least two directions. The nest is constructed of grasses, weed stems, and fine roots, lined with various soft materials. It closely resembles that of the dickcissel, which also has pale bluish eggs.

**Clutch Size and Incubation Period:** From 3 to 6 eggs, usually 5 (20 North Dakota clutches averaged 4.3, and 45 of 70 Kansas clutches contained 5 eggs). The eggs are light greenish blue, rarely with brownish spotting. The incubation period is about 12 days. Apparently single-brooded, but known to renest.

**Time of Breeding:** North Dakota egg dates are from June 3 to July 21, and nestlings have been seen as late as August 2. Kansas records indicate that clutches are initiated as early as May 11 and completed as late as June 20.

**Breeding Biology:** Lark buntings arrive on their breeding areas in flocks, within which courtship begins, and thus dispersal occurs gradually. There seems to be relatively little territorial develop-
ment, since nests are often placed only 10–15 yards apart, and males sometimes sing from adjacent fenceposts. Both sexes incubate, but females evidently do the most. At least through the incubation period, to about the middle of July, the males continue to sing and perform song-flight displays. The abundance and local distribution of nesting birds seem to vary considerably from year to year; areas with dense populations one year may be virtually deserted the next. By late August the males have lost their distinctive nuptial plumage, and the fall migration begins soon afterward.

Suggested Reading: Bent 1968; Butterfield 1969.

Savannah Sparrow
*Passerculus sandwichensis*

**Breeding Status:** Breeds in suitable habitats throughout North Dakota, western Minnesota, South Dakota, except the wooded areas of the Black Hills, western and northern Nebraska (south to Garden and southern Cherry counties), probably northwestern Iowa (no specific nesting records), and eastern Colorado (locally around large reservoirs). There are no breeding records for Kansas or for northwestern Missouri (where it summers uncommonly at Squaw Creek National Wildlife Refuge).

**Breeding Habitat:** In our region the species is associated with tall-grass and mixed-grass prairies, in the wet meadow zones of ponds, lakes, and streams. In mountainous areas it also nests in the moist open areas of mountain parks. Along coastlines it commonly nests in saltwater marshes.

**Nest Location:** Nests are on the ground, in thick herbaceous cover, almost always in a natural hollow or scraped-out depression, and are generally hidden from above by overhanging vegetation. The nest is built of coarse grass stems with a lining of finer grasses.

**Clutch Size and Incubation Period:** From 3 to 6 eggs (5 North Dakota nests averaged 5.0). The eggs are pale greenish or bluish white, with highly variable brown markings. The incubation period is 10–12 days. Regularly double-brooded.

**Time of Breeding:** In North Dakota, egg records are from May 28 to July 9. Minnesota egg records extend from May 30 to July 21; nestlings have been seen as early as June 10, and fledglings as early as June 23.

**Breeding Biology:** Males regularly arrive on their breeding areas before females and establish territories almost immediately, frequently in the same areas as in the previous year. The territories tend to be relatively small, and in one study they averaged only
about ¼ acre, although birds with larger territories were most successful in attracting mates. In a Nova Scotia study it was found that of 13 territory-holders, 9 were monogamous, 3 were bigamous, and 1 failed to obtain a mate. Males do not participate in nest-building or in incubation, but they usually do help feed the nestlings. Fledging occurs at 9-10 days, and the young may be fed for about 2 more weeks by one or both of the parents.

Suggested Reading: Welsh 1975; Potter 1972.

Grasshopper Sparrow
Ammodramus savannarum

Breeding Status: Breeds in suitable habitats virtually throughout North Dakota, western Minnesota, South Dakota (excluding the Black Hills, where it is sporadic), Nebraska (irregular in extreme west), western Iowa, northwestern Missouri, eastern Colorado (irregular), Kansas, Oklahoma (except the extreme western panhandle), and the eastern panhandle of Texas (Lipscomb to Wheeler counties). Rare or occasional in northeastern New Mexico, with no breeding records.

Breeding Habitat: The species is primarily associated with mixed-grass prairies but is also found in short-grass and tall-grass prairie, sage prairie, and disturbed grassland habitats such as retired cropland, hayfields, and stubble fields. Areas that have grown up to shrubs are avoided, but scattered trees provide acceptable habitat and are used as song perches.

Nest Location: Nests are on the ground, in dense herbaceous vegetation, and are often at the bases of grass clumps, concealed from above. The nest is in a slight depression and is built mostly of grasses, with finer grasses used as lining.

Clutch Size and Incubation Period: From 3 to 6 eggs (6 North Dakota clutches and 5 Kansas clutches averaged 4.8). The eggs are white, with specks and spots of brown, often near the larger end. The incubation period is probably 11-12 days. Sometimes double-brooded: reported rarely triple-brooded in Florida.

Time of Breeding: North Dakota egg dates are from May 30 to July 21, with a peak in breeding from early June to late July. Kansas egg records are from May 1 to June 30, with a peak in egg-laying about May 21. Oklahoma egg records are from May 1 to June 28, but recently fledged young have been seen as late as August 18.

Breeding Biology: The grasshopper sparrow, like the lark bunting, is slightly colonial, and in some areas there are marked
year-to-year variations in breeding densities. Territories are immediately established after males return in spring and are advertised by the familiar grasshopper-like "song" and by wing-flicking. Although semicolonial, territories often tend to be rather large, 2-3 acres, and are strongly defended through the incubation period. The female alone incubates and broods the young, and the male may sing as late as the time of hatching. Besides the well-known grasshopper-like song, males also utter a more sustained song that apparently serves to attract and maintain a mate. Both sexes feed and tend the young, which remain in the nest about 9 days.

Suggested Reading: Smith 1963; Bent 1968.

Baird Sparrow

Ammodramus bairdii

Breeding Status: Breeds in suitable habitats virtually throughout North Dakota except the Agassiz Lake basin, but only locally and sporadically present at the eastern edge of this basin in Clay County, Minnesota. Also breeds in north-central and northwestern South Dakota; the southern range limits are rather uncertain.

Breeding Habitat: In North Dakota the species is associated with large areas of ungrazed or lightly grazed mixed-grass prairies, wet meadows, or tall-grass prairie habitats associated with wetlands, and with various disturbance habitats such as retired croplands, stubble fields, or hayfields.

Nest Location: Nests are on the ground in dense herbaceous vegetation, usually tall grass that is held up by a nearby shrub. The nest is usually in a small depression and is constructed mostly of grasses, which are also used for lining.

Clutch Size and Incubation Period: From 3 to 6 eggs (15 North Dakota clutches averaged 4.7). The eggs are grayish white with extensive spotting or blotching of brown tones. The incubation period is 11-12 days. Single-brooded.

Time of Breeding: North Dakota egg dates are from June 5 to July 12, with dependent fledglings seen as early as June 30 and as late as August 18.

Breeding Biology: This attractive prairie-adapted sparrow remains relatively inconspicuous until it arrives on its breeding grounds, when males suddenly become territorial and begin actively singing their bell-like songs and displaying aggressively. However, females become extremely inconspicuous as soon as they begin nesting, and relatively few nests have been found. The female does all the incubating, while the male continues to sing and forage. She also broods and feeds the young for the first few
days after hatching, when the male may finally begin to assist in bringing food. The young leave the nest when 8–10 days old, and by about 13 days they are able to fly a few yards.

**Suggested Reading:** Cartwright, Shortt, and Harris 1937; Bent 1968.

Henslow Sparrow
*Ammodramus henslowii (Passerherbulus henslowii)*

**Breeding Status:** Breeds locally in southwestern Minnesota (at least Lac qui Parle, Pipestone, and Jackson counties), extremely eastern South Dakota (Moody County), probably western Iowa (apparently rare), southeastern Nebraska (Lancaster and Washington counties), and eastern Kansas (Cloud, Shawnee, Douglas, Morris, and Anderson counties). Territorial males have been seen in Washington County, Oklahoma, but there are no breeding records for the state.

**Breeding Habitat:** The species is primarily associated with weedy prairies and meadows, neglected grassy fields, and pasturelands, especially those that are rather low-lying and damp. Scattered low bushes are often present.

**Nest Location:** Nests are on or near the ground and sometimes in depressions in the ground. The nest is usually placed at the base of a thick clump of grass, with the nest bottom a few inches above the ground. It is constructed of grass and weed leaves and lined with finer grasses and sometimes also hair.

**Clutch Size and Incubation Period:** From 3 to 5 eggs. The eggs are white, with dots, spots, and sometimes blotches of brown, mostly at the larger end. The incubation period is about 11 days. Probably double-brooded.

**Time of Breeding:** Not many specific dates are available, but at least in Kansas the eggs are evidently laid in May and June.

**Breeding Biology:** Like the related grasshopper sparrow, this species tends to be a localized and semicolonial nester, and as many as ten pairs have been reported breeding on a half-acre field in Iowa. Territories are established within such aggregations, but most territorial disputes are limited to rather formal "songfests" rather than physical encounters. The intensity of singing varies greatly and is very high during territorial establishment and nest-building. Nest-building requires 5–6 days and is done mostly or entirely by the female. Territories averaged about an acre each in one Michigan study area and gradually increased in size through
the summer. Only the female incubates and broods the young, which remain in the nest for 9–10 days.

**Suggested Reading:** Robins 1971; Hyde 1939.

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**Le Conte Sparrow**  
*Ammospiza leconteii (Passerherbulus caudacutus)*

**Breeding Status:** Breeds in western Minnesota and the eastern portions of North Dakota (west uncommonly to the Missouri Slope and rarely to Adams County), southward rarely to South Dakota (probably bred in Day County in 1955, possibly bred in Beadle and Perkins counties). Not known to breed in Iowa or Nebraska.

**Breeding Habitat:** The prime habitat of this species are hummocky alkaline wetlands (fens), but the species also occurs less commonly in tall-grass prairie, the wet meadow zone of prairie ponds or lakes, and domestic hayfields or retired croplands.

**Nest Location:** Nests are placed on the ground in dense herbaceous vegetation, usually in the drier border areas of wetlands where vegetation is luxuriant. Nests in North Dakota are often built in cordgrass (*Spartina*). The nest is built of grasses woven among standing plant stems and thus often is elevated slightly above the ground, and it is lined with fine grasses.

**Clutch Size and Incubation Period:** From 3 to 5 eggs, usually 4. The eggs are white, with spots, dots, and blotches of brown, rather evenly distributed. The incubation period is 11–13 days. Probably single-brooded but known to renest.

**Time of Breeding:** In North Dakota the probable breeding season is from late May to mid-August, with a peak in early June to late July. Egg dates are from May 30 to July 21.

**Breeding Biology:** This elusive marshland-adapted species has been described as "mouselike" in behavior, and its territorial advertisement song sounds more like that of a grasshopper than a bird. Like the grasshopper sparrow, it also has a more prolonged and repeated song that is less frequently heard, and it sometimes sings in flight. Territories are established, but they rarely overlap, and territorial interactions are rarely seen. Incubation and brooding are by the female alone; presumably the male helps feed the young.

**Suggested Reading:** Murray 1969; Bent 1968.
Sharp-tailed Sparrow
*Ammospiza caudacuta*

**Breeding Status:** Breeds in northwestern Minnesota (Kittson, Marshall, Mahnomen, and Clay counties), in eastern North Dakota west to the Missouri Slope, and locally or occasionally in northeastern South Dakota, with the extreme southern limits rather uncertain (possibly Day County, from which there are summer records).

**Breeding Habitat:** In our region this species is associated primarily with alkaline, hummocky bogs (fens) and the marshy zones of prairie lakes and ponds during years when water levels are low. Less often, wet meadow zones are used. In coastal areas, brackish or salt marshes are prime habitat. In northern Minnesota the species uses swampy lakes with tamarack borders.

**Nest Location:** Nests are on the ground, usually sunken to the ground level but sometimes built among upright stems and thus elevated in thick clumps of grass. The nests are constructed of dry grasses and lined with finer grasses.

**Clutch Size and Incubation Period:** From 3 to 6 eggs. The eggs are pale greenish white with brown dots and spots. The incubation period is 11 days. Frequently double-brooded.

**Time of Breeding:** The probable breeding season in North Dakota is from early June to late August, with a peak from mid-June to early August. Egg dates range from June 12 to July 12.

**Breeding Biology:** In contrast to the related Le Conte sparrow, males of this species are nonterritorial and simply occupy home breeding ranges. Furthermore, the birds tend to be somewhat colonial and are evidently promiscuous. The nonterritorial and semicolonial nature of this species may enable females to locate males, since the males' songs are weak and uttered relatively infrequently. The songs, which include a flight song, probably serve as an index of sexual excitement, since they do not advertise territories. Males take no role in nesting activities. The young remain in the nest for 9-10 days and continue to be fed for about 20 days after leaving the nest.

**Suggested Reading:** Murray 1969; Woolfenden 1956.

Vesper Sparrow
*Poecetes gramineus*

**Breeding Status:** Breeds in suitable habitats virtually throughout the Dakotas, western Minnesota and Iowa, most of Nebraska (probably south to about the Platte River), northwestern Missouri (occasionally), eastern Colorado, and perhaps extreme
northeastern New Mexico (no specific records). There are no breeding records for Kansas, Oklahoma, or the Texas panhandle.

**Breeding Habitat:** The species frequents overgrown fields, prairie edges, and similar habitats where grasslands join or are mixed with shrubs and scattered small trees. Habitats providing song perches at least 25 feet high or higher are favored, but shrubs may be used if only they are available.

**Nest Location:** Nests are on the ground, in sparse vegetation or at times even beside a clod of dirt. The nest is built of grasses and weed stalks, with a lining of finer grasses and sometimes hair.

**Clutch Size and Incubation Period:** From 3 to 6 eggs (9 North Dakota clutches averaged 4.0). The eggs are white to greenish white with varying amounts of spots, blotches, and scrawls of brown. The incubation period is 12-13 days. Regularly double-brooded.

**Time of Breeding:** In North Dakota the breeding season is from mid-May to early August, with a peak from late May to mid-July, and egg dates range from July 2 to July 22. Colorado egg dates are from May 11 to July 4.

**Breeding Biology:** Vesper sparrows occupy a considerably larger home range than do many prairie-adapted sparrows and frequently defend territories of about 2 acres. Most singing is done from fairly high perches, but, rarely, song flights are also performed. It is believed that the female does most of the incubating, but males have been seen covering eggs, and they sometimes also brood the young. On the average, the young remain in the nest for 9 days, but they remain semidependent on their parents until they are 30-35 days old. In one Michigan study, a pair hatched a second brood 29 days after the hatching of the first, and among another group of 29 pairs, 15 pairs raised a single brood, 13 raised two broods, and 1 raised three broods in a single season.

**Suggested Reading:** Bent 1968.

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**Lark Sparrow**

*Chondestes grammacus*

**Breeding Status:** Breeds in suitable habitats throughout the southern half of the region, northward through western Iowa, Nebraska (common in the Sandhills area and to the west), most of South Dakota (more common west of the Missouri River), North Dakota (primarily west of the Missouri, uncommon to rare and local in north-central and eastern areas), and western Minnesota (local; breeding records for Marshall and Norman counties).
Breeding Habitat: Associated with natural grasslands or weedy fields that adjoin or contain scattered trees, shrubs, and coarse forbs.

Nest Location: Nests are usually on the ground but rarely may be up to about 25 feet above the ground in trees. (Of 91 Oklahoma nests, 39 were on the ground and 52 were from a few inches to 15 feet above ground). Ground nests are usually in depressions, often in shaded, bare sites, and are made of grasses and rootlets. Tree nests are more bulky but are made of the same materials.

Clutch Size and Incubation Period: From 3 to 6 eggs, usually 4-5. The eggs are white, with spots and scrawls of blackish concentrated around the larger end. The incubation period is about 12 days. Possibly double-brooded in some southern areas, otherwise probably single-brooded.

Time of Breeding: North Dakota egg dates are from June 20 to July 11. In Kansas, egg dates range from May 1 to July 20, with a possible peak in late May. Oklahoma records are from April 14 to July 14.

Breeding Biology: Lark sparrows are strongly territorial early in the breeding season, and the male may sing while on the ground, perched, or flying; in the last situation tail-spreading is also a conspicuous part of the display. An interesting aspect of display occurs in association with copulation. The female crouches while the male holds a twig in his beak, and during mating the twig is passed to the female, which then flies off with the twig, presumably to the nest site. Males may also drop twigs at a potential nest site, but apparently they never actually assist in the construction of the nest. Nest-building takes 2-3 days, and late nests require less time than early ones. The female does all the incubating and brooding, but males actively participate in feeding the young. They remain in the nest 9-10 days, by which time they are able to fly short distances. Although double-brooding has not been conclusively proved, one adult was seen feeding a juvenile while also actively nest-building, which strongly suggests that it occurs.


Rufous-crowned Sparrow
*Aimophila ruficeps*

Breeding Status: Breeds locally in central and western Oklahoma (Cimarron County, the Wichita, Quartz, and Arbuckle mountains, and locally elsewhere in gypsum hills or on rocky slopes, ridges, or exposures east to Cherokee County and south to Johnston and Atoka counties). Also probably breeds locally in the Texas panhandle (no actual breeding records), in southeastern
Colorado (Baca and Las Animas counties, but no actual nest records), and northeastern New Mexico (no actual records for region). There are no breeding records for Kansas.

**Breeding Habitat:** The species is primarily associated with dry and desertlike habitats with extensive bare spaces, often dominated by scrub oaks. Rocky slopes with large boulders, small cedars, and stunted oaks are the primary Oklahoma habitat.

**Nest Location:** Nests are usually on the ground, often flush with the surface, but sometimes are placed in shrubs. They are often on hillsides, sometimes oriented to face the morning sun. The nest is composed of grasses and weed stems and often has animal hair in the lining.

**Clutch Size and Incubation Period:** From 3 to 5 white eggs, often 4. The incubation period is unreported. Probably sometimes double-brooded, judging from the apparent length of the breeding season.

**Time of Breeding:** Oklahoma breeding records are from mid-April (adults carrying food) to early June (nestlings). Texas egg records are from April 4 to July 25, with most between May 1 and May 31.

**Breeding Biology:** These sparrows apparently do not flock during the nonbreeding season, except as family groups, and there is some indication that adults may remain paired through the winter. During the breeding season the birds are distinctly territorial, with the males singing advertising songs from various song posts or infrequently while in flight. However, regular flight songs are typical of this species. The egg-laying period may be related to the timing of the wet season, and in Oklahoma males have been heard singing as late as September. Incubation is by the female, and the young are tended by both parents.

**Suggested Reading:** Wolf 1977; Bent 1968.

Bachman Sparrow (Pine Woods Sparrow)  
*Aimophila aestivalis*

**Breeding Status:** Restricted as a breeder in our region to eastern Oklahoma (at least McCurtain and Pontotoc counties, possibly also Pittsburg, Okmulgee, and Woods counties).

**Breeding Habitat:** Habitat in Oklahoma consists of broom-sedge grassland, with scattered young pines and blackberry thickets. In general, the species seems to prefer brushy hillsides or wooded borders in the northern part of its range, and open pine stands with grasses and scattered shrubs, oaks, or other hardwoods in more southern areas.
Nest Location: Nests are on the ground, often at the outer edges of grass clumps in slight depressions, with a clear view in front of the nest. Nests in Texas and elsewhere have been reported to face away from the midday sun, often toward the west. They are constructed mostly of grasses, with a lining of finer grasses.

Clutch Size and Incubation Period: From 3 to 5 white eggs. The incubation period is 13-14 days. At least two broods, possibly three in the southern areas.

Time of Breeding: In Oklahoma, birds have been observed carrying nesting material, and a female almost ready to lay was collected in late April. No other specific information on nesting is available for our region.

Breeding Biology: Observations of wintering birds in Louisiana suggest that adults of this species may remain permanently paired, as has been suggested for the rufous-crowned sparrow. On the breeding areas, males establish territories that are well separated; the unusually loud songs of this species may be related to this aspect of its breeding biology. Nests are extremely hard to find, but apparently the female does all the nest-building and also all the incubation. Sometimes the male accompanies his mate on material-gathering sorties, but generally he continues to advertise the territory during this phase. Both sexes participate in caring for the young, and the nestling period lasts about 10 days.


Cassin Sparrow
Aimophila cassinii

Breeding Status: Breeds in northeastern New Mexico, the Texas panhandle, western Oklahoma (east to about Cleveland and Love counties), southeastern Colorado (Baca and Prowers counties), and southwestern Kansas (regularly to Hamilton, Finney, and Comanche counties). Less commonly it extends to Cheyenne County, Kansas, and to northeastern Colorado; additionally, there is a single breeding record for southwestern Nebraska (American Birds 28:922). Details on the New Mexico distribution have recently appeared (American Birds 31: 933).

Breeding Habitat: Typically this species occurs in grassland habitats, within which there are shrubs or small trees. The habitats vary from nearly uniform but rather arid grassland to rather dense mesquite woodland; in Oklahoma sandy prairies with scattered sage, yucca, cactus, mesquite, and shinnery oaks are preferred.

Nest Location: Nests are either on the ground or elevated a few inches in grass or sage. Typically they are on the ground, con-
cealed in weeds or at the base of small bushes. The nest is constructed of grasses, weeds, bark, and plant fibers, with finer grasses for lining.

**Clutch Size and Incubation Period:** From 3 to 5 white eggs, usually 4 (4 Kansas clutches averaged 3.8). The incubation period is unknown. Probably double-brooded, or at least a renester.

**Time of Breeding:** In Kansas the eggs are laid between mid-May and mid-July, and in Oklahoma the egg dates are from May 26 to July 22. In Texas, egg records extend from March 1 to August 1, suggesting multiple brooding.

**Breeding Biology:** Although a flocking species during the non-breeding season, this sparrow is apparently territorial, with breeding groups often occurring in loose colonies. Individual territorial males may be spaced 50–100 yards apart, and they advertise their territories by singing from perches or by a song flight, which is well developed in this species. The flight song may also be an important part of pair-formation. Some birds migrate westward in early summer while still in breeding condition and may even breed afterward; in this respect the species seems unique among North American sparrows. Very little is known of the incubation and brooding phases of this species' biology, partly because it is so intolerant of disturbance. Both sexes have been seen feeding nestlings. This species is highly arid-adapted and apparently can breed where no drinking water is locally available, but current information suggests that an arid spring in the southern plains may cause birds to leave and attempt to breed elsewhere where food supplies are more favorable.

**Suggested Reading:** Wolf 1977; Bent 1968.

**Black-throated Sparrow**  
*Amphispiza bilineata*

**Breeding Status:** Breeding in our area is restricted to northeastern New Mexico (locally common), the Texas panhandle (scarce and local, breeding record for Armstrong County), Cimarron County in Oklahoma, and probably southeastern Colorado (no specific breeding records).

**Breeding Habitat:** In our area this species occupies thinly grassed pastureland with scattered mesquite, yucca, prickly pear cactus, and cholla cactus. Generally, arid uplands are favored, but it also extends into the depths of Death Valley.

**Nest Location:** Nests are in small bushes, or sometimes in cholla cactus. The nest is composed of twigs, grass, and leaf fibers, lined with hair or other soft materials.
Clutch Size and Incubation Period: From 3 to 4 light blue eggs, which fade on prolonged exposure to light. The incubation period is unknown. Probably multiple-brooded.

Time of Breeding: Texas egg records are from March 10 to September 8, and in New Mexico eggs have been noted from May 20 to July 30. Oklahoma egg dates are from May 12 to June 12, with nestlings seen as late as June 22.

Breeding Biology: This desert-adapted sparrow is notable for its capacity to survive in areas lacking water; it obtains fluids by eating green vegetation or insects and is able to concentrate its urine wastes as well as to utilize saline water more effectively than other North American seed-eating songbirds. Males also hold relatively large territories, which they advertise and defend with a repertory of song phrases that varies remarkably both between and within individuals. Little has been written on the incubation and brooding phases of breeding biology, but in southern California singing and territorial defense begin as early as February, and dependent young have been seen as late as late August, suggesting that multiple brooding may be typical in favorable years.

Suggested Reading: Heckenlively 1970; Bent 1968.

Dark-eyed Junco (Slate-colored and White-winged Juncos)
Junco hyemalis

Breeding Status: Breeds in northwestern Minnesota (Clearwater and Marshall counties), in the Black Hills of South Dakota, and in the Pine Ridge area of Nebraska (Sioux and Dawes counties).

Breeding Habitat: In South Dakota, breeding habitats include pine or spruce forests, aspen groves, and deciduous woods in hollows, canyons, and gulches. Minnesota habitats are primarily coniferous forests.

Nest Location: Nests are either on the ground (commonly), or in trees as high as 8 feet above the ground. Ground nests are usually well concealed under weeds or grasses or may be under tree roots or fallen trees. Often they are on a steep slope, under a rock ledge, or in a rock crevice; of 29 Black Hills nests, almost half were under logs, tree roots, or overhanging ledges. The nest is built of grasses, rootlets, twigs, and so on, with a lining of finer grasses, rootlets, and hair.

Clutch Size and Incubation Period: From 3 to 6 eggs, usually 4-5. The eggs are grayish to pale bluish white, with dark markings concentrated around the larger end. The incubation period is 12-13 days. Double-brooded.
Time of Breeding: Minnesota egg records are from May 18 to July 18. In South Dakota the breeding season is from late May to late July; egg dates are from May 20 to July 22.

Breeding Biology: Juncos are notable for their sociable winter flocking behavior, which persists until the birds return to their breeding areas. In the Black Hills, territorial singing sometimes can be heard in early March. When a female enters a male's territory he follows her with tail lifted and fanned and wings drooping. Several days are spent in establishing and strengthening the pair bond, during which the birds remain close together and the male continues to display frequently by wing-drooping and tail-fanning. The female builds the nest over a period of several days, and she apparently does all the incubation and brooding. Both parents bring food to the young, which fledge in 10-13 days. The young continue to be semidependent on their parents for about 3 weeks after leaving the nest, and juveniles have been seen with their father as late as 46 days after fledging. Presumably by that time the female might be incubating a second clutch, if not feeding young.


Chipping Sparrow
*Spizella passerina*

Breeding Status: Breeds in suitable habitats throughout the northern half of our region, extending south into Colorado (possibly widespread, but specific records are lacking), eastern Kansas (west at least to Barber and Shawnee counties), and eastern Oklahoma (west regularly to Osage and Pushmataha counties, sometimes to Comanche County). Uncommon to scarce in the Texas panhandle; no breeding records. Formerly also bred in Cimarron County, Oklahoma.

Breeding Habitat: This is a forest-edge species, found in the margins of deciduous forests, in parks, gardens, or residential areas, and in farmsteads, orchards, and grassland habitats with scattered trees. Generally, trees surrounded by an open area with only herb stratum vegetation and some open ground for foraging provide the best environmental combination.

Nest Location: Nests are usually elevated from 1 to 10 feet in shrubs or trees, rarely to 30 feet, and are generally near the trunk and top of smaller trees, or lower in the branches and farther from the trunk in larger open-grown trees. Nest placement seems to be determined primarily by accessibility, concealment, and a low density of overhead vegetation. The nest is built of grasses, forbs, and rootlets, lined with fine grasses and often hair.
Clutch Size and Incubation Period: From 2 to 5 eggs, usually 4. The eggs are pale greenish blue, with brown to blackish spotting, streaking, or blotches near the larger end. The incubation period is 11–14 days. Double-brooded.

Time of Breeding: North Dakota egg dates are from May 25 to June 20, and dependent young have been seen as late as August 24. In Kansas, egg records are only for early May, but laying probably extends into June or July. Oklahoma breeding dates are from April 25 (nest-building) to early July (fledglings).

Breeding Biology: Territorial establishment begins almost immediately after the males return to their breeding grounds in spring, and the males spend a good deal of time each day in singing and chasing intruders. Territories average about an acre in area but sometimes are as small as half an acre. The female gathers all the nesting material and constructs the nest. Usually she also does all the incubating, but an exceptional instance of male incubation has been reported. The female broods the young, but both sexes feed them, and they fledge in about 10 days, with an observed range of 8–12 days among 52 broods. By the time they are 14 days old the young are able to fly several feet.

Suggested Reading: Walkinshaw 1944; Tate 1973.

Clay-colored Sparrow
*Spizella pallida*

Breeding Status: Breeds in suitable habitats virtually throughout North Dakota and western Minnesota, extending southward through northeastern South Dakota (one nesting record from the Black Hills). There is one breeding record for south-central Nebraska (Hall County) and also a probable breeding record for southwestern Kansas (Morton County), but no other indications of breeding in the southern half of the region seem to exist.

Breeding Habitat: The optimum habitat consists of mixed-grass prairie with scattered low thickets of shrubs such as wolfberry or silverberry, but grasslands with taller shrubs or small trees are also utilized. Brushy woodland margins or successional stages of forests following fires or logging are used, as are disturbance habitats such as retired croplands and shelterbelts on agricultural land.

Nest Location: Nests are on or near the ground, often in low shrubs at heights of up to about 3 feet. The nest is usually well hidden, either on a shrub branch or in a clump of dead grass, and is usually concealed by leaves. In North Dakota, 34 nests averaged only 11 inches above ground, and none was more than 30 inches. The nest is built of grasses, weeds, and rootlets, lined with
finer grasses, rootlets, and sometimes hair. The nest and eggs resemble those of chipping sparrows, but in this species hair is less frequently used and the nest is somewhat more bulky.

**Clutch Size and Incubation Period:** From 3 to 5 eggs (20 North Dakota clutches averaged 3.8). The eggs are pale bluish green, with blackish spots or scrawls near the larger end. The incubation period is 10 to 11½ days. Normally single-brooded, though sometimes two broods are raised; a persistent renester.

**Time of Breeding:** North Dakota egg dates are from May 29 to July 22, with a peak of records during the first half of June. Minnesota records are from May 22 to June 13, with a majority between May 31 and June 6.

**Breeding Biology:** These plain-colored prairie-adapted sparrows begin to establish territories a week or two after they arrive in spring, selecting grassy areas containing at least one clump of shrubbery, and defending areas varying from ¼ acre to 1 acre in extent. Field sparrows and sometimes other sparrows also are threatened by territorial males. The female constructs the nest; and the male often accompanies her on her material-gathering trips. Incubation usually begins with the laying of the third egg, and reportedly both sexes participate. Both sexes feed the young, which leave the nest at a surprisingly early age of 7-8 days. However, they are unable to fly until they are about 2 weeks old. Up to four nesting attempts are sometimes made, and a few cases of definite double-brooding have been reported.

**Suggested Reading:** Salt 1966; Bent 1968.

**Brewer Sparrow**

*Spizella breweri*

**Breeding Status:** Breeds locally in southwestern North Dakota (Bowman, Slope, Golden Valley, and Billings counties), the western edge of South Dakota (excluding the Black Hills), northwestern Nebraska (breeds in Sioux County and probably elsewhere, and there is one record from Howard County), possibly northeastern Colorado (nesting record for Hereford, Weld County, is just beyond this book's limits), probably northeastern New Mexico (no specific breeding records), Cimarron County, Oklahoma (irregularly), and the Texas panhandle (locally; breeding records for Randall, Armstrong, and Briscoe counties). Nesting also occurs in Morton County, Kansas, where numerous territorial males were observed in 1978.

**Breeding Habitat:** In our region this species is especially characteristic of short-grass prairies with sage or other semiarid shrubs such as rabbitbrush; in New Mexico the species' range is almost
coextensive with those of big sagebrush and rabbitbrush. Elsewhere, the species also occurs in timberline areas of Canada.

**Nest Location:** Nests are in sage or similar shrubs, almost always less than 4 feet above the ground and averaging about 6 inches. Rarely, nests have been found on the ground, in slight depressions. The nest is built of grass and plant fibers, lined with finer grass and sometimes hair. Concealment above the nest seems to be an important criterion for site selection.

**Clutch Size and Incubation Period:** From 3 to 5 eggs (20 North Dakota clutches averaged 3.8). The eggs are bluish, with dots, spots, and blotches of dark brown, mostly near the larger end. The incubation period is 12–13 days.

**Time of Breeding:** In North Dakota, eggs have been found in early June. In Colorado, eggs have been found between May 28 and July 21, and in New Mexico the egg records extend from May 20 to July 10.

**Breeding Biology:** This species occurs in two widely different climatic zones—the arid sage-dominated western states and the arctic timberline of northern Canada—and in both is dependent upon open, shrub-dominated habitat. There is little information on breeding biology, and yet in eastern Washington as many as 47 pairs may occur in 100 acres of favorable habitat. In a Montana study, spray-killing all the sagebrush on a study area reduced the Brewer sparrow population by about half. The sparrows will nest in dead sagebrush, but it provides considerably less concealment than do live plants.

**Suggested Reading:** Bent 1968; Best 1972.

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**Field Sparrow**

*Spizella pusilla*

**Breeding Status:** Breeding occurs locally in western and southeastern North Dakota (mostly Missouri and Little Missouri drainages, also the southern Lake Agassiz basin), southwestern Minnesota (Pope County, probably elsewhere), most of South Dakota excepting the Black Hills, western Iowa, and Nebraska (rare in the panhandle), eastern Colorado (probably a local resident, but no specific records), virtually all of Kansas, Oklahoma except for the panhandle, and probably the Texas panhandle (scarce and local; nearest breeding record is for Wilbarger County).

**Breeding Habitat:** Brushy, open woodland, forest edge, brushy ravines or draws, sagebrush flats, abandoned hayfields, forest clearings, and similar habitats offering a combination of low, grassy areas and shrubs or low trees are utilized by this species. It
uses habitats rather similar to those of the chipping sparrow but occurs at an earlier successional stage than does that species.

**Nest Location:** Nests are on the ground (early spring nests) or in thick shrubs (later nests) to as high as about 3 feet. Nests are built of dead grass stems and leaves, with a lining of rootlets and hair.

**Clutch Size and Incubation Period:** From 2 to 5 eggs, usually 3–4 (21 Kansas clutches averaged 4.1). The eggs vary from creamy to pale greenish or bluish white, with dots and spots of brown usually concentrated around the larger end. The incubation period is 11–12 days. Often double-brooded, sometimes three broods.

**Time of Breeding:** North Dakota egg dates are for June, but young have been seen in Minnesota as early as May 21, and nest-building has been seen as late as July 28. Iowa egg records are from May 12 to July 30, and those from Kansas are from April 21 to September 10. Oklahoma egg dates are from April 20 to July 31.

**Breeding Biology:** Males establish territories as soon as they return to their breeding areas; these average about 3 acres but range from less than 2 to about 6 acres. Older males are the first to return and usually reoccupy exactly the same territories they held the previous year. Females return somewhat later than males, and if a female's former partner has already found a new mate she may settle on a nearby territory with a new mate. Singing drops off sharply as soon as mates have been found, and nest-building soon begins. The female chooses the site and does the building, often closely accompanied by the male. Early nests may take 3–7 days to construct, compared with 2–3 days for later ones. Incubation is entirely by the female, who is sometimes fed on the nest by her mate. Both sexes tend the young, which leave the nest in 7–8 days and 5 days later are able to fly short distances. The young become independent at 26–34 days of age, by which time the adults are likely to have begun a second nesting.

**Suggested Reading:** Best 1977; Crooks and Hendrickson 1953.

*White-throated Sparrow*

*Zonotrichia albicollis*

**Breeding Status:** Breeding in our region is limited to north-central and northwestern Minnesota (Clearwater and Marshall counties), and to the Turtle Mountains and Pembina Hills of northeastern North Dakota.

**Breeding Habitat:** In our region the species is associated with various semiopen wooded habitats, such as coniferous forests with well-developed woody undergrowth, aspen groves with a
shrubby understory, willow-bordered marshes, and sometimes planted conifer groves.

**Nest Location:** Nests are typically on the ground, in areas of small trees or clumps of shrubs, with extensive ground cover. The nest is usually at the edge of a clearing, well concealed by the ground vegetation, but, rarely, may be off the ground in a bush, a brush heap, or under tree roots. Blueberries frequently serve for nest cover, and there is usually also a large object such as a tree or stump nearby that apparently serves as a lookout perch. The nest is constructed of diverse materials such as grasses, rootlets, needles, and mosses, lined with finer grasses, rootlets, and hair.

**Clutch Size and Incubation Period:** From 3-6 eggs, usually 4. The eggs are grayish, heavily dotted or spotted with brown. The incubation period is about 12-14 days. Usually single-brooded, but sometimes two broods.

**Time of Breeding:** Minnesota egg records are from May 30 to August 4, and dependent fledglings have been seen as early as June 30 and as late as August 21.

**Breeding Biology:** Almost as soon as they return to their breeding areas, males establish and defend territories, which they advertise by singing from a few favored singing posts, usually 20-40 feet above the ground in spruces. Territories range from less than an acre to more than 2 acres, the size apparently varying with the habitat. The female builds the nest without help from the male, and only the female incubates. Both sexes care for the young, which leave the nest in 8-9 days and are able to fly a few days later. Second broods are evidently rare, but up to three nesting attempts have been observed.

**Suggested Reading:** Bent 1968.

**Swamp Sparrow**

*Melospiza georgiana*

**Breeding Status:** Breeds throughout most of western Minnesota and locally in eastern North Dakota (Turtle Mountains, northern Agassiz Lake basin, Drift Plain, and Missouri Coteau), as well as southward through eastern South Dakota, western Iowa, and northwestern Missouri. Breeding in Nebraska is apparently highly local but includes the vicinity of Neligh in Antelope County, Smith Lake in Sheridan County (Rosche 1977), the Loup Valley in Howard County (*Nebraska Bird Review* 38:18), and Crescent Lake N.W.R., Garden County.

**Breeding Habitat:** In North Dakota the species generally frequents alkaline bogs (fens), especially those having cattails,
phragmites, and shrubs or small trees. It also breeds in wet meadows, along swampy shorelines of lakes or streams, and to a limited degree in coastal meadows.

**Nest Location:** Nests are rarely on the ground but instead are built about a foot above the substrate, often in water up to 24 inches deep. They are constructed among the stalks of cattails or in bushes and are rather bulky structures of grass with a finer grass lining.

**Clutch Size and Incubation Period:** From 3 to 6 eggs, usually 4-5. The eggs are pale green with dots, spots, and blotches of brown. The incubation period is 12-13 days. Normally single-brooded, sometimes two broods.

**Time of Breeding:** Egg records in Minnesota are from May 18 to June 17, and in North Dakota adults carrying food have been seen as late as August 8.

**Breeding Biology:** Probably because it is restricted to wet and inaccessible habitats, rather little is known of the breeding biology of this relatively insectivorous sparrow. A breeding density of 2 pairs in 9 1/2 acres of Maryland bog has been reported, but territory size and other aspects of breeding remain essentially unstudied. Apparently the female incubates alone, although the male has been observed feeding his brooding mate. The nestling period was judged to be about 12-13 days by one early observer, and about 9 days by a more recent one, which seems more realistic.

**Suggested Reading:** Bent 1968.

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**Song Sparrow**

*Melospiza melodia*

**Breeding Status:** Breeds in suitable habitats virtually throughout the Dakotas, western Minnesota, and western Iowa, but becomes relatively local and uncommon in Nebraska, and apparently rarely breeds south of the Platte River (recent records for Hall and Lancaster counties, early records to Webster and Nemaha counties, *Nebraska Bird Review* 43:3). Although common at Squaw Creek National Wildlife Refuge in northwestern Missouri, it is apparently only a local breeder in northeastern Kansas, and there are no breeding records for more southerly areas of our region. However, there are several breeding records for eastern Colorado (Kingery and Graul, 1978).

**Breeding Habitat:** This is a typical edge species, breeding in thickets of shrubs and trees among grasslands, brushy margins or
openings of forests, brushy edges of ponds or lakes, in shrub swamps, shelterbelts, farmsteads, and sometimes in parks or suburbs.

**Nest Location:** Nests are elevated from a few inches to about 10 feet in shrubs or saplings or may be on the ground under bushes, clumps of grass, or brush piles. The nest is built of grasses, weeds, and bark fibers, lined with fine grasses, rootlets, and sometimes hair.

**Clutch Size and Incubation Period:** From 3 to 5 eggs (11 North Dakota clutches averaged 4.4). The eggs are greenish white with extensive spotting or blotching of reddish brown to purple tones. The incubation period is 12-13 days. Regularly double-brooded, sometimes three broods.

**Time of Breeding:** North Dakota egg dates are from May 25 to July 11, with dependent young seen as late as September 17. In Minnesota, eggs have been reported from April 27 to August 14.

**Breeding Biology:** The song sparrow is one of America's best-studied songbirds, thanks to the classic banding efforts of M. M. Nice. Males are highly territorial and often maintain the same territories year after year. Females return to their old territories about half the time but only infrequently (8 of 30 cases in one study) remate with their previous partners. They often settle into adjacent territories if their males have found new mates or may move as far as a mile from their place of hatching. Usually the female builds the nest alone, but there are cases of unmated males building nests, and of helping mates in nest construction. About 3-4 days are needed for nest-building, and the female incubates alone. Both sexes feed the young, which remain in the nest for about 10 days and become independent when 28-30 days old. Periods between the fledging of two successful broods range from 30 to 41 days.

**Suggested Reading:** Bent 1968; Nice 1943.

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**McCown Longspur**

*Calcarius mccownii*

**Breeding Status:** Breeding is now largely limited to the western quarter of North Dakota, east to Renville and eastern Bowman counties, rarely to McLean County. Breeding also once occurred in northwestern South Dakota, but apparently there have been no authenticated nesting records since 1949. Formerly, breeding occurred as far east as Pipestone County, Minnesota, and as far south as western Nebraska. Recently; birds have been found
Breeding in southern Sioux County, northwestern Nebraska (Nebraska Bird Review 34:75). Breeding also occurs in Weld County, Colorado.

**Breeding Habitat:** The species is associated with short-grass prairies and grazed mixed-grass prairies, as well as stubble fields or fields with newly sprouting grains in North Dakota.

**Nest Location:** Nests are placed in small depressions in the ground, usually amid sparse plant cover. Of 40 Wyoming nests, 19 were beside grass clumps and the rest were associated with rabbitbrush or horsebrush cover. The nests are usually constructed entirely of grasses, with a lining of finer grasses and sometimes wool where it is available.

**Clutch Size and Incubation Period:** From 3 to 6 eggs, usually 3-4. The eggs are white to greenish white with dark brown to black lines, streaks, spots, and dots. The incubation period is 12 days. Probably single-brooded.

**Time of Breeding:** North Dakota egg dates are May 17 to July 22, with most between May 27 and June 10. Dates of clutches from eastern Wyoming are from May 17 to June 29, and Colorado egg dates range from May 23 to July 11, with fledged young seen as early as May 27.

**Breeding Biology:** Male longspurs arrive on their breeding grounds of eastern Wyoming in late April and soon begin to select territories. These are marked by flight songs as well as by singing from shrubs or rocks. As competition increases, territories gradually decrease in size to an area about 250 feet in diameter. The courtship display is remarkable; the male moves around the female in a narrow circle, holding the nearer wing erect and thus exposing the white lining. The female gathers the nesting material and makes any nest excavation that may be necessary. She also performs all the incubation and does most of the brooding, though she is occasionally relieved by the male during the later brooding stages. The young leave the nest at 10 days and 2 days later are able to fly for short distances.

**Suggested Reading:** Mickey 1943; Bent 1968.

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Chestnut-collared Longspur
*Calcarius ornatus*

**Breeding Status:** Breeds in suitable habitats virtually throughout North Dakota (rare in southern Agassiz Lake basin) and in adjacent western Minnesota (recent records for Wilkins and Clay counties, an old record for Polk County), extending southward through much of South Dakota except the Black Hills and southeastern South Dakota, and through the northwestern corner of
Nebraska (Sioux, Dawes, Sheridan, and Box Butte counties). Also breeds in Weld County of northern Colorado. Breeding probably formerly extended to western Kansas, in the vicinity of Ellis, Trego, and Logan counties.

Breeding Habitat: In North Dakota, the prime habitat consists of grazed or hayed mixed-grass prairies, but the birds also use transitional areas between short-grass and mixed-grass habitats, meadow zones of salt grass around ponds and lakes, and disturbance habitats such as mowed hayfields, heavily grazed pastures, and other similar low-stature grassy areas.

Nest Location: Nests are on the ground, in depressions under sparse vegetative cover and often under grass tufts. The nests are built of grasses, with a lining of fine grasses, rootlets, and hair or feathers when these are available.

Clutch Size and Incubation Period: From 3 to 6 eggs (45 North Dakota clutches averaged 4.2). The eggs are creamy white with spots, scrawls, and blotches of dark brown or black tones. The incubation period is 12-13 days. At least occasionally double-brooded.

Time of Breeding: North Dakota egg dates are from May 6 to July 25, and those from South Dakota range from May 20 to June 17, with most before June 5. Minnesota records are from May 19 to June 16.

Breeding Biology: Males establish territories shortly after their spring arrival; they prefer grassy plains that have sparse vegetation and at least one large rock or fencepost to serve as a singing post. Such singing points are often a central part of the territory; the nest is usually within 25 feet, and the total territory is about 100 feet in diameter. In some marginal areas, however, territories up to 10 acres have been estimated. Although flight songs are used in territorial advertisement, they are not as frequent or as formalized as in the McCown longspur. Both species gradually gain altitude with rapid wingbeats, but the McCown longspur sails downward quickly with wings upstretched, whereas the chestnut-collared longspur circles and undulates while singing more softly before gradually descending. The female builds the nest alone and also does the incubation. Both sexes feed the young, which leave the nest in 9-11 days or rarely as late as the 14th day. By the 14th day the young can fly very well, and by about 26 days they are independent of their parents.

Suggested Reading: Moriarty 1965; Bent 1968.