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Birds of the Great Plains: Family Paridae (Titmice, Verdins, and Bushtits)

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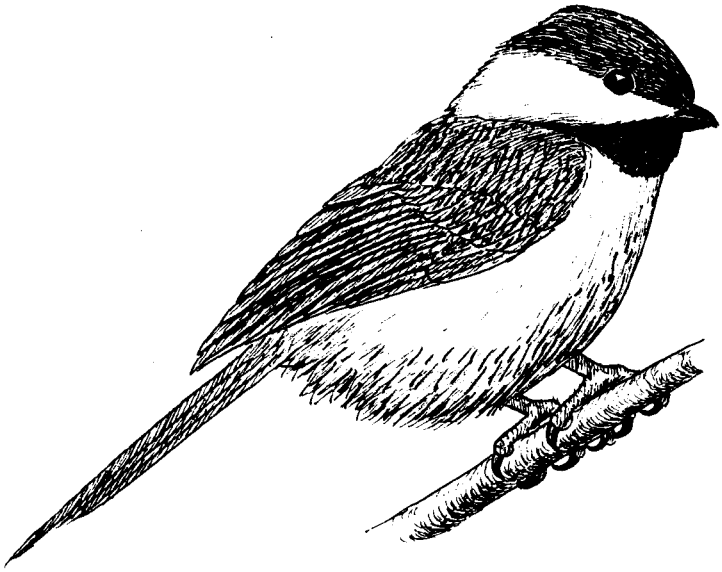
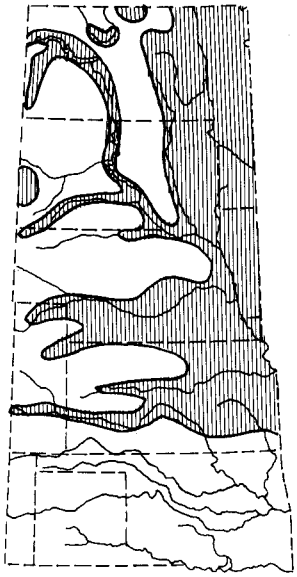
FAMILY PARIDAE (TITMICE, VERDINS, AND BUSHTITS)



Black-capped Chickadee

Black-capped Chickadee
Parus atricapillus



Breeding Status: Breeds in suitable habitats nearly throughout the region, becoming less common southward and reaching its southern limits in the southernmost tier of counties in Kansas. It is not known to breed in Oklahoma, northeastern New Mexico, or the Texas panhandle.

Breeding Habitat: This chickadee breeds both in deciduous and coniferous forests, as well as in orchards and woodlots, wherever suitable nesting cavities exist.

Nest Location: Nests are usually in edge situations or open areas of forest. Old woodpecker holes are most often used, but the birds also excavate cavities in rotted wood of dead stubs. Excavated holes are usually within 10 inches of the stub tip. Birdhouses are sometimes also used. Entrances of excavations are about 1 3/8 inches in diameter and 4-20 feet above ground. The cavity is usually lined with hair, feathers, or cottony materials.

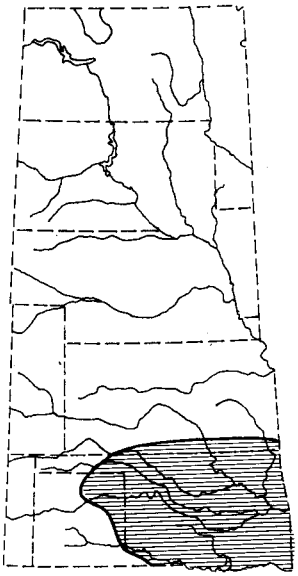
Clutch Size and Incubation Period: From 4 to 7 eggs (10 Kansas clutches averaged 5.4). The eggs are white, rather evenly spotted with reddish brown. The incubation period is 12-13 days. Occasionally double-brooded.

Time of Breeding: Breeding activity in North Dakota has been reported from late April (nest excavation) to late July (flying dependent young). Kansas egg records are from March 21 to June 10, with a peak in mid-April and most eggs laid between April 11 and 30.

Breeding Biology: Chickadees are largely nonmigratory, but winter flocking does occur. Pair bonds are weak or absent during this time, although there is enough contact to allow frequent re-pairing with past mates. Courtship is apparently simple, consisting mainly of the loud *phoebe* song by males. Territories are not established until later, when the pair begins to excavate a nest site. Both sexes excavate, the female taking the lead, and both birds work intermittently during daylight. Eggs are laid daily and are covered with nesting material by the female, who also sleeps in the nest but does not begin incubating until the clutch is complete. Only the female incubates, but the male feeds her at intervals. During the first week after hatching the behavior of adults is similar to their behavior during incubation, but the male stops feeding the female and both parents feed the young. After brooding is terminated both sexes feed the young at about an equal rate, and the young birds leave the nest at 16-17 days of age. Fledglings are able to forage for themselves about 10 days after leaving the nest, but they remain with their parents for 3-4 weeks. A small proportion of adults attempt a second brood.

Suggested Reading: Odum 1941-42; Brewer 1963.

Carolina Chickadee
Parus carolinensis



Breeding Status: Breeds from the southernmost tier of counties in Kansas southward through Oklahoma at least as far west as Harper County. Also breeds in the northeastern panhandle of Texas.

Breeding Habitat: Associated with deciduous and coniferous woodlands, the Carolina chickadee's habitat (forest and forest edge) is identical to that of the black-capped chickadee, though the two species normally do not overlap. Hybridization may occur in areas of contact between these species.

Nest Location: Generally the same as that of the black-capped chickadee; the nests and eggs of these species cannot be distinguished.

Clutch Size and Incubation Period: From 4 to 9 eggs, averaging about 7, significantly more than the black-capped chickadee. Like those of that species, the eggs are white with reddish brown spots. The incubation period is 13 days. Single-brooded.

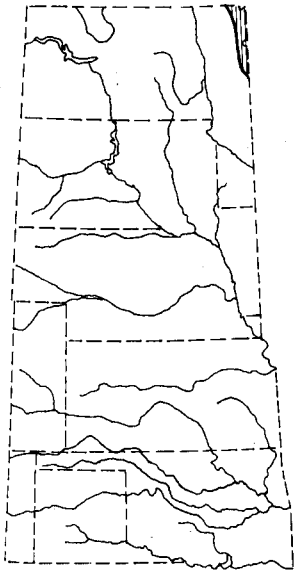
Time of Breeding: Oklahoma egg dates are from April 3 to April 29, but nest-building has been observed as early as February 21 and recently fledged broods as late as May 26.

Breeding Biology: In nearly all major aspects of their biology, the Carolina and black-capped chickadees appear to be nearly identical. The black-capped chickadee is clearly adapted to breeding in cooler and perhaps drier habitats, whereas the Carolina chickadee can attain higher densities in more southerly and perhaps moister forests. Hybrids do occur where the species meet, but apparently they are less well adapted than either of the parental types, thus maintaining a genetic barrier between the species. Wintering birds form small flocks, consisting of at least partially paired birds and organized in a linear social hierarchy with paired birds at the top. Pairs are apparently formed when a female persistently associates with a male and endures his attacks on her until he accepts her presence. This can occur at any time during the year. Territories are established by singing, territorial skirmishes, and patrolling, and by restriction of a pair's activities to a particular area. About a month is spent in looking for suitable nest sites. Both sexes participate but the female evidently makes the final choice. Males often assist with excavation, but the female gathers nest-lining materials and does all the incubating. Males often feed females during the excavation period and continue to feed them while they are incubating. Fledging takes approximately 17 days, and for the first few days afterward the family remains in dense vegetation and the young birds beg vigorously. They continue to beg for at least 5 weeks after fledg-

ing but are fed only rarely during that time, and the parents may eventually make abortive attacks on them, causing dispersal.

Suggested Reading: Smith 1972; Brewer 1963.

Boreal Chickadee (Brown-capped Chickadee)
Parus hudsonicus



Breeding Status: Limited to northwestern Minnesota (nests in Clearwater County, possibly Roseau and Beltrami counties).

Breeding Habitat: The species is found in coniferous forests, boggy areas, and muskegs.

Nest Location: Nests are in trees or stumps with soft and decayed heartwood but hard outer layers. The entrance cavity frequently faces upward, rather than opening laterally like the nests of other chickadees, and is usually 1-12 feet above the ground. The cavity is lined with fur, cottony plant material, feathers, or similar soft materials.

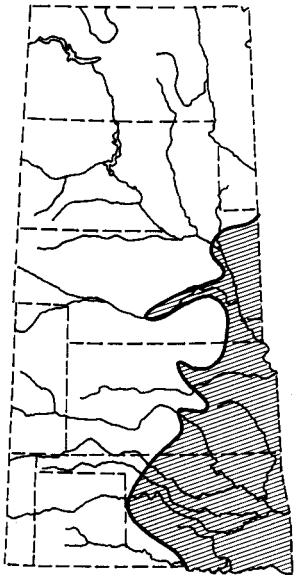
Clutch Size and Incubation Period: From 4 to 9 eggs, usually 5-7. The eggs are white with small reddish brown spots. The incubation period is usually 15 days but ranges from 11 to 16. Single-brooded.

Time of Breeding: In Minnesota, nest excavation has been seen as early as May 13, and active nests have been seen as late as July 6.

Breeding Biology: The winter is spent in flocks, that tend to break up late in the season as aggressive activity increases. Several kinds of chases and attacks are common, including chases by either sex, short chases of a female by a male, and downward spiraling chases of a male by a female from a treetop, with the male uttering musical calls. Pair-formation may involve some of these chases, but hole-inspection is perhaps also a part of pair-forming behavior. Once pairing occurs it is probably for life. The birds soon establish a territory and the female begins food-begging. Both sexes search for suitable nesting sites, and they usually do not nest in the same cavity in succeeding years. The pair may spend anywhere from a day to at least 10 days excavating, and the nest lining is added by the female alone. Egg-laying begins before the nest is complete, and the male continues to feed his mate during egg-laying and incubation. The usual length of the nestling period is 18 days, and after fledging the family leaves the vicinity of the nest. However, for about 2 weeks the young remain within the nesting territory and are fed with decreasing frequency.

Suggested Reading: McLaren 1975; Bent 1946.

Tufted Titmouse
Parus bicolor



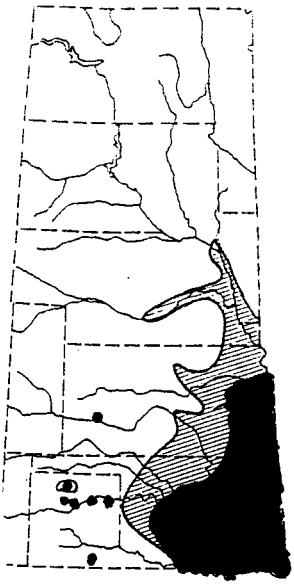
Breeding Status: Breeds in the Missouri Valley of South Dakota (north at least to Walworth County), in the Missouri and Platte valleys of Nebraska (west at least to Buffalo County), southward through the eastern half of Kansas (east of Cloud, Harvey, and Sumner counties) and most of Oklahoma except the panhandle. Occurs locally along the eastern border of the Texas panhandle, but there are no definite breeding records.

Breeding Habitat: The species breeds in coniferous and deciduous forests, orchards, woodlots, and suburban areas. At the western edge of the range it is limited to bottomland forests.

Nest Location: Nests are in natural tree cavities, old woodpecker holes, fenceposts, and sometimes pipes or birdhouses. Openings are usually 10-20 feet above the ground but have been reported from 2 to nearly 90 feet high. The nest is lined with fur, soft vegetation, or other soft materials including snakeskins.

Clutch Size and Incubation Period: From 4 to 8 eggs (6 Kansas clutches averaged 4.5). The eggs are white with small brownish spots. The incubation period is 13-14 days. Normally single-brooded, but a few instances of double-brooding are known.

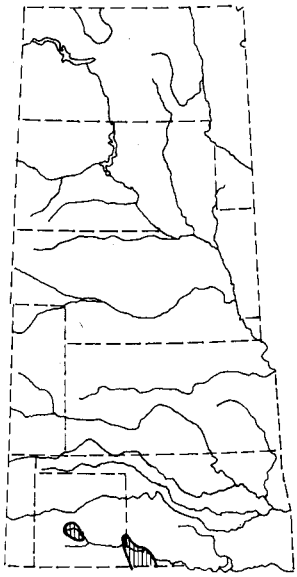
Time of Breeding: Kansas egg records are from March 21 to June 10, with a peak in late April and most eggs laid between April 11 and 30. Oklahoma breeding dates range from March 18 (nest under construction) to June 10 (nestlings).



Breeding Biology: As in other members of this family, pair bonds seem to be permanent and may be formed as early as the first fall of life or well before territories are established in the spring. Females are subordinate to their mates and to other males, and pair-formation is at least partly related to chases of females by mates or potential mates. After pairs are formed the mates may spend considerable time searching for suitable nest cavities. Unlike chickadees, no excavation of cavities is typical, and both sexes help in locating a suitable site. From nest-site selection through the hatching period the male performs courtship feeding, feeding his mate either in the nesting cavity or away from it during the incubation period. Apparently only the female brings nesting material, and she may continue this through the egg-laying period. The female incubates alone, but when the eggs hatch she attracts the male by calling and wing-quivering, which stimulates him to begin bringing food to the brood. The nestling period is 17-18 days, but the young continue to beg for food from their parents until they are nearly 2 months old. A very few nstances of second broods (in Pennsylvania and Tennessee) have been encountered.

Suggested Reading: Brackbill 1970; Offutt 1965.

Black-crested Titmouse
*Parus atricristatus**



Breeding Status: Breeds in southwestern Oklahoma (Tillman, Jackson, and Harmon counties) and the central part of the Texas panhandle (Randall and Armstrong counties), especially in canyon areas. These two populations are apparently now not in contact.

Breeding Habitat: In Oklahoma this species is limited to bottomland woods along the Red River, while the subspecies breeding in the Texas panhandle is found in cottonwood groves of river canyons. In Texas it generally occurs widely in mesquite, open live oak groves, and oak-juniper woodlands.

Nest Location: Apparently the nesting needs of this species are the same as those of the tufted titmouse, but few nests have been described. Abandoned woodpecker holes are favored sites, and nests are usually in groves of open timber.

Clutch Size and Incubation Period: From 4 to 7 eggs, usually 6, resembling those of the tufted titmouse. The incubation period is also probably the same. Believed to be double-brooded.

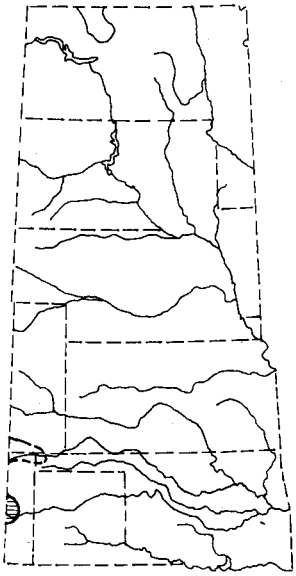
Time of Breeding: In Texas, egg records extend from February 24 to June 11.

Breeding Biology: During the winter, these titmice may be found in flocks, pairs, or as single birds, but presumably pair bonds are relatively permanent. Territories are established by pairs, and territorial encounters seem to be settled by bluffing more frequently than by actual fighting. The calls and songs of black-crested and tufted titmice are very similar, and the similarities of their ecology and behavior are emphasized by the hybridization that occurs in areas of contact. Evidently the black-crested titmouse is more tolerant of foraging among open plant cover than is the tufted titmouse, and its calls are more nasal and extended. No obvious display differences have been noted between the two species, although male tufted titmice tend to be more aggressive toward their conspecifics as well as toward other species. Only the female incubates, but the males remain nearby during incubation and undoubtedly feed their mates. Nestling periods have not been established for this species but no doubt are the same as for the tufted titmouse.

Suggested Readings: Dixon 1955; Bent 1946.

*The A.O.U. has recently (*Auk* 93:878) recommended merging this form with *P. bicolor*.

Plain Titmouse
Parus inornata



Breeding Status: Breeds in northeastern New Mexico (east to Colfax and probably Quay counties) in southeastern Colorado (Baca County), and in extreme northwestern Oklahoma (Cimarron County). Not reported from the Texas panhandle.

Breeding Habitat: In this region the plain titmouse is limited to upland habitats of piñons, junipers, and scrubby oaks. In other parts of its range it also occurs in river-bottom groves and suburban areas.

Nest Location: Nests are usually in natural cavities or woodpecker holes in trees between 3 and 30 feet above the ground. At least sometimes the birds excavate their nests in rotted heartwood, or even in clay banks, and birdhouses are sometimes also used. The nest is lined with fur, hair, feathers, or other soft materials.

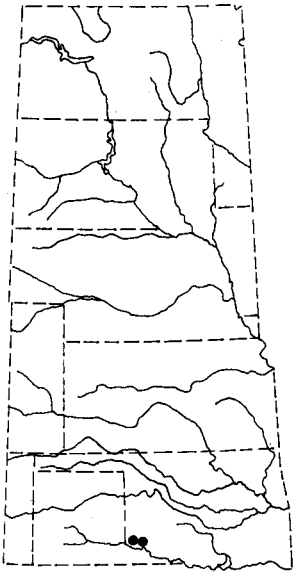
Clutch Size and Incubation Period: From 6 to 8 white eggs, usually 7. The incubation period is 14–16 days, and there is probably only a single brood.

Time of Breeding: Active nests have been reported from Furnish Canyon, Baca County, Colorado, in late April and late May. A nest with young nearly ready to fledge was found in Oklahoma in early June.

Breeding Biology: At least in the interior populations of this species, a certain amount of winter flocking seems typical, although coastal populations remain on territories during this period. Apparently pairs are formed during the flocking period and before territories are established. Pair-formation is marked by singing and males' making "approach threats" toward females and chasing them in a sexual flight that represents attempted copulation. A submissive display by females, involving wing-quivering and a soft call, stimulates feeding by the male and helps to establish a pair bond. Apparently only the female searches for a nest site, and she also is the only one that gathers materials to fill the chosen cavity. But the male continues to feed her during this period and during incubation, and both sexes help feed the young, about equally, at least after the female terminates her brooding. The nestling period is approximately 20 days, and after leaving the nest the young birds continue to forage within a narrow radius of their nest for some time. By the time they are 5 weeks old they are foraging for themselves, and they gradually begin to disperse from their parental territory. In some cases they establish temporary territories of their own while still juveniles, but they may be nearly a year old before they successfully obtain suitable breeding territories.

Suggested Reading: Dixon 1949, 1956.

Verdin
Auriparus flaviceps



Breeding Status: Breeding is apparently restricted to an area of mesquite woodland along Sandy (=Lebos) Creek in Jackson County, Oklahoma (*Bulletin of the Oklahoma Ornithological Society* 5:32). A nest has also been found in Harmon County (G. M. Sutton, pers. comm.). This is some distance to the north of typical verdin habitat in southern New Mexico and the southern Staked Plain of Texas, and the only other possible breeding record for our region is from Wilbarger County, Texas.

Breeding Habitat: The species breeds in brushy valleys, oak slopes, and other semiarid habitats where there are stiff-twigged and thorny bushes or trees, often far from surface water. Although arid-adapted, it prefers brushy areas over open deserts and also avoids dense timber areas.

Nest Location: Nests are built in a variety of shrubs or trees, including mesquites, hackberries, catclaws, palo verdes, live oaks, and many other thorny trees and shrubs. The nest is very firmly constructed of as many as 2,000 thorny twigs, forming an oval or globular structure up to 8 inches in diameter, with the thorns projecting upward. It is well anchored to a limb, from as low as 2 feet above the ground to nearly 20 feet up. The cavity is lined with leaves, grass fibers, and abundant feathers.

Clutch Size and Incubation Period: From 3 to 6 eggs, usually 4. The eggs are pale greenish to bluish with fine dark spots, either scattered or concentrated. The incubation period is from 14 to 17 days. Double-brooded.

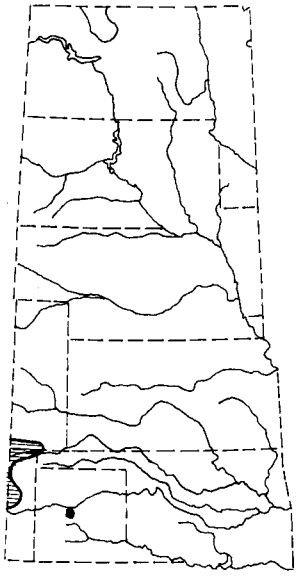
Time of Breeding: Egg records in Texas are from March 25 to September 15, with a clustering between April 18 and May 6.

Breeding Biology: Based on studies in Arizona, verdins appear to occupy rather large home ranges of nearly 25 acres, but they defend only the area near the nest site. However, males do become more aggressive in spring; one researcher reported that unpaired birds construct display nests—incomplete nests that may serve to attract females. Unpaired males frequently utter *tseet* notes that likewise attract females and that later serve as contact notes between paired individuals. According to another observer, nests are not made until after pair bonds are formed, and nest-building apparently reinforces the pair bond. Two types of nests are constructed, breeding nests and roosting nests, and the latter are typically built from late summer through winter. Both sexes help build the breeding nests, and the male does much of the early work. Male roosting nests are usually some distance from the breeding nest, and males apparently never feed incubating females. The male does begin to feed the young about a week after they hatch, and from then until they fledge (about 17-19 days

after hatching) he actively feeds them. After fledging, the young are cared for by one or both parents for about 18 more days. Males assume most of the postfledging care and roost with the fledglings while females often begin a second clutch.

Suggested Reading: Taylor 1971; Bent 1946.

Common Bushtit
Psaltriparus minimus



Breeding Status: Breeds locally in southeastern Colorado (to Baca County), extreme northwestern Oklahoma (Cimarron County), and northeastern New Mexico (east at least to Folsom, Union County).

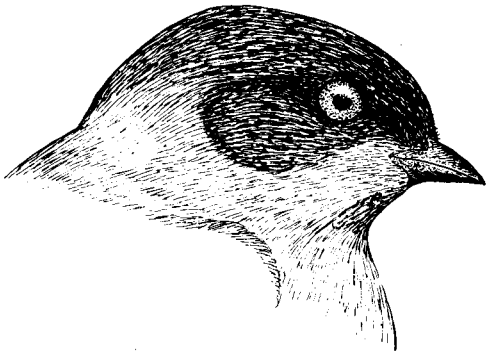
Breeding Habitat: In this region bushtits are essentially confined to piñon-juniper habitats, but they occur elsewhere in tall sagebrush, mountain mahogany, brushy or tree-lined river bottoms, and in hillside aspen groves.

Nest Location: Nests hang on shrubs or trees up to 15 feet above the ground, being woven from mosses, spider webs, lichens, oak leaves, cottony plant fibers, and the like. Nests average nearly 10 inches in length and about 4 inches in width. The entrance is normally near the top and to one side and is about an inch in diameter. The bowl is lined with feathers, plant down, or spider webs.

Clutch Size and Incubation Period: From 4 to 6 white eggs, with a few clutches of 12–14 reported that presumably are laid by two females. The incubation period is 12–13 days. Single-brooded, but known to renest.

Time of Breeding: In Colorado, eggs have been found as early as April 26 and nestlings reported as late as May 18. In Oklahoma, eggs have been found as late as June 10 and young seen as early as May 4. Active nests in New Mexico have been seen from April 10 to June 6.

Breeding Biology: Bushtits are found in small flocks during the nonbreeding period, moving about in close-knit groups from about mid-September until the first of April. Courtship begins in the flocks and consists of sexual posturing, trills, and excited location notes. Territories are poorly defined and rather variably defended, probably depending on the abundance of nesting materials and food they contain. Nests are built by both members of a pair, and in one case a third bird of unknown sex was seen helping with nest-building and incubation. Nest-building is a long and intricate process, requiring from 13 to as many as 51 days in

eight observed instances. Rarely, nests from the past year are usable, and even in renesting efforts a new nest might be built, often using materials from the first nest. In renesting efforts the pairs often dissolve and the members may take new mates. Incubation apparently is equally shared by the two sexes, and both birds sleep in the nest at night. Both sexes feed the young and remain in the nest at night during the entire nestling period, which lasts about 14 days. After leaving the nest the family forms a small flock, with the adults initially doing all the foraging for the young, but about 14 days after leaving the nest the young birds are independent.

Suggested Reading: Addicott 1938; Bent 1946.