

CAROLINA CHICKADEE - POECILE CAROLINENSIS

Very similar to the black-capped chickadee, the Carolina chickadee is distinguished by the slightly browner wing with the greater coverts brown (not whitish fringed) and the white fringing on the secondary feathers slightly less conspicuous; the tail is also slightly shorter and more square-ended. Carolina chickadees are able to lower their body temperatures to induce an intentional state of hypothermia called torpor. They do this to conserve energy during extremely cold winters. In extremely cold weather conditions they look for cavities where they can hide in and spend up to fifteen hours at a time in torpor; during this time they are awake but unresponsive; they should not be picked up and handled at this time, as the stress of being held may cause their death.

Taxonomy: Kingdom: Animalia Phylum: Chordata Class: Aves Order: Passeriformes Family: Paridae Genus: Poecile
Species: *P. carolinensis*

Habitat:

Biomes: Carolina Chickadees may be found in deciduous and mixed deciduous-coniferous woodlands, swamps, riparian areas, open woods and parks, and also in suburban and urban areas.

Distribution:

In US: Their breeding habitat is mixed or deciduous woods in the United States from New Jersey west to southern Kansas and south to Florida and Texas; there is a gap in the range at high altitudes in the Appalachian Mountains where they are replaced by their otherwise more northern relative, the black-capped chickadee.

In Other Countries: NONE

Holistic Description: John James Audubon named this bird while he was in South Carolina. The curious, intelligent Carolina Chickadee looks very much like a Black-capped Chickadee, with a black cap, black bib, gray wings and back, and whitish underside. Carolina and Black-capped chickadees hybridize in the area where their ranges overlap, but the two species probably diverged more than 2.5 million years ago.

Species Richness: 4 SUBSPECIES

Population Dynamic: CHECK THREATS

Evolution and Systematics:

Evolution: No known Pleistocene fossils.

Systematics: Geographic variation noted in plumage coloration, size, and genetics. Morphological variation is relatively weak and clinal, with body size increasing with latitude and plumage coloration varying from more brownish tones in eastern populations to darker gray in western populations.

Number of Species: 4 SUBSPECIES

Number of Genera: 4 SUBSPECIES

Physical Characteristics:

Size and Length: Length: 3.9-4.7 in (10-12 cm) Weight: 0.3-0.4 oz (8-12 g)

Wingspan: 5.9-7.9 in (15-20 cm)

Coloration: Carolina Chickadees have a black cap and bib separated by stark white cheeks. The back, wings, and tail are soft gray.

General Body Features: This tiny, approachable bird has a short neck and large head, giving it a distinctive spherical body shape. Its tail is fairly long and narrow. Its bill is a bit thicker than a warbler's but thinner than a finch's.

Special Features of the Body: NONE

Special Features of the Head and Sensory Organs: BILL MORPHOLOGY.

Dentition: BEAK/LAMELLAE/GIZZARD

Special Features of the Limbs and Digits: NONE

Any Special Internal Anatomy: Carolina chickadees are able to lower their body temperatures to induce an intentional state of hypothermia called torpor. They do this to conserve energy during extremely cold winters. In extremely cold weather conditions they look for cavities where they can hide in and spend up to fifteen hours at a time in torpor; during this time they

are awake but unresponsive; they should not be picked up and handled at this time, as the stress of being held may cause their death.

Sexual Dimorphisms: Sexes do not differ in plumage, and plumages do not vary throughout year, except as a function of wear (whitish edges most pronounced following summer molt). Males average larger in size. Mean lengths of tail and wings greater for males, but considerable overlap between the sexes.

Differences Between Juvenile Stage and Adult: Juvenile plumage similar in appearance to adults that have completed Definitive Prebasic molt, except juveniles may have a slightly duller (sootier) black cap, and more loosely textured undertail coverts.

Behavior:

Diurnal, Nocturnal, or Crepuscular: Diurnal

Activity: BELOW.

Carolina Chickadees associate in flocks during winter. Each flock member has a rank; once spring arrives, the highest ranking individuals will nest within the flock's territory; lower ranking birds must travel farther to successfully claim a territory and many don't nest that season. Throughout the year, members of pairs, families, and flocks communicate with one another constantly.

Nesting female Carolina Chickadees sleep in the nest cavity while males sleep in a nearby sheltered branch in a tree, vine, or shrub. The rest of the year, birds may sometimes sleep in sheltered branches; usually they sleep in cavities, some which they excavated, others which may be natural or excavated by woodpeckers. Carolina Chickadees sleep individually, but from night to night different members of a flock may sleep in the same cavity. They compete with Downy Woodpeckers, Brown Creepers, and Tufted Titmice for these cavities.

Carolina Chickadees actively defend an individual space, keeping at least 2.2 feet, and sometimes at least 5 feet, between individuals; when two are closer than that, the dominant bird may make gargle calls. At feeders, each bird typically takes a seed and carries it to a branch somewhat isolated from other chickadees to eat.

During migration and winter, other species associate with Carolina Chickadees, which are found with other species about 50 percent of the time. Tufted Titmice, which are dominant over them, are the most common flock associates. Black-capped Chickadees, Ruby-crowned and Golden-crowned kinglets, Red-breasted, White-breasted and Brown-headed nuthatches, Brown Creepers, and Downy and Hairy woodpeckers tend to gravitate to these flocks, which are led by the Carolina Chickadees, Tufted Titmice, or both.

Locomotion: Usually arboreal, uncommonly on the ground. Hops along substrate; climbs rarely. Short undulating flights. Movement most rapid in morning and before roosting; least active in midday. Winter flocks move horizontally at an average rate of 6 m/min, with a daily pattern of rapid movement in early morning.

Communication and Perception: Often a four-note whistle. One pattern is fee-bee-fee-bay with first and third notes higher in pitch, but at least 35 other songs heard.

Home Range: Defended by male late winter/early spring–late summer, but intensity of defense wanes dramatically after spring (late May/early Jun). Exclusive use of territory by the breeding pair, sometimes “extra males” or “floaters,” and offspring. Size: 1.6–2.4 ha. Highest-ranking males and their mates obtain breeding territories that were part of wintering flock's range. Dominant males actively evict most lower-ranking males from territory.

Degree of Sociality: Annual social cycle includes nonbreeding flocks (late summer–late winter/early spring) alternating with socially monogamous breeding pairs (late winter/early spring–early summer) and families (early summer–late summer).

Level of Aggression: Carolinas supplant, chase, and physically attack each other at, or away from, feeders in an attempt to gain access to food or in defense of their winter flock territory, their individual breeding territory, or their mates. Aerial and ground fights may escalate to include feet-kicking, bill-jabbing, and wing-fluttering. Physical interactions often accompanied by numerous calls, especially T-Slink, Click-Rasp, and T-Rasp. Submissive behaviors include waiting nearby as another chickadee feeds and retreating, accompanied by calls.

Migration: Resident.

Predators:

Predators: Sharp-shinned Hawk, Cooper's Hawks, House Wren, Red-bellied Woodpecker, Small Mammals, Southern Flying Squirrel, Raccoon, Opossum, Domestic Cat, Rat Snakes.

Anti-Predator Defenses: Mobbing: Short, rapid flights directed toward the predator; often accompanied by rapid series of Chick-a-dee Calls, with especially short dees. Wing Flicks when mobbing. Both members of a mated pair mob in breeding season; during winter, most members of the flock join in.. Alarm calls: High See Notes in response to aerial predators. When predator detected, adopts Sleeked Posture and remains motionless. Female defends nest against predators using Snake Display and Hiss vocalization.

Diet and Nutrition:

Adult Diet: In winter, the Carolina Chickadee's diet is about half plant, half animal. The rest of the year about 80–90 percent of their diet is animal (mostly insects and spiders). Carolina Chickadees glean insects from foliage and tree bark, often hanging upside down to do so. They hold seeds and insects in their feet, wedged against the branch they're perched on, to peck into them. They readily use bird feeders.

Juvenile Diet: ^^^^

Special Adaptations for Getting Prey: Probes with bill to capture prey. If food item small enough (small arthropods), consumption often immediately follows capture. If food item relatively large (larger arthropods, seeds), chickadee flies to a perch and pins prey with one or both feet and uses bill to hammer or rip prey. Caterpillars (Lepidoptera larvae) are held in bill and beaten against branch.

Reproduction:

Mode of Reproduction: Monogamous

Mating System: Socially monogamous.

Mating Season: April through June

Courtship: In courtship displays, female begs and Wing Quivers and gives T-Slink Call; male feeds female, gives T-Slink Call, and also Wing Quivers. Male usually remains near mate during egg-laying and actively repels other males. Precopulatory displays same as courtship displays, except female spreads wings preceding brief copulation. Female may erect crown feathers during copulation.

Territoriality: NONE, HOME RANGE

Mating: CHECK COURTSHIP

Nest Placement: Carolina Chickadees excavate or find an unused cavity, usually 2-25 feet up in a tree. When a territory is near a forest edge, half of all cavities used face the nearby clearing.

Nest Description: Both members of a pair excavate a cavity or choose a cavity or nest box. Carolina Chickadees don't seem to have a preference for nest boxes filled with or without sawdust. The female builds the nest base with moss and sometimes strips of bark. Then she adds a thick lining of hair and/or plant fibers.

Egg-Laying: Clutch Size: 3-10 eggs Number of Broods: 1 brood Egg Length: 0.6 in (1.5 cm) Egg Width: 0.4 in (1.1 cm) Incubation Period: 12-15 days Nestling Period: 16-19 days Egg Description: White with fine dots to small blotches of reddish brown.

Hatching and Incubation/Gestation: Naked except wisps of down on head, wings, and rump.

Development: Naked except wisps of down on head, wings, and rump. ALTRICIAL.

Parental Care: Young fed by both parents. Rate increases with age of nestlings, from 0.9 feeds/nestling/h on day 1 to 6.1 feeds/nestling/h on day 17. Parent carrying food to nest may fly directly to cavity entrance or, more often, perch first in vegetation <5 m from nest at about the same height as or just above the cavity entrance for several seconds before flying to nest.

Lifespan: 1.5 years for a female and 1.8 years for a male.

Conservation:

Official Federal Status: Least Concern

Special Statuses in Individual States: NONE

Threats: Carolina Chickadees are common across their range, but populations declined by 17% between 1966 and 2015, according to the North American Breeding Bird Survey. Partners in Flight estimates a global breeding population of 12 million, with 100% living in the U.S. The species rates a 9 out of 20 on the Continental Concern Score. Carolina Chickadee is not on the 2016 State of North America's Birds' Watch List.

Conservation Efforts: ^^^^

Extra Facts:

1. Where the two species ranges come in contact, the Carolina and Black-capped chickadees occasionally hybridize. Hybrids can sing the songs of either species, or might sing something intermediate.
2. In winter, Carolina Chickadees live in flocks of two to eight birds and defend areas against other flocks. Dominant birds in these flocks establish breeding territories in the summer that were part of the winter flock's range.
3. The pair bond between a male and female Carolina Chickadee can remain intact for several years. The probability that a pair will remain together seems to vary among populations, with nearly all pairs remaining together in subsequent years in a study in Texas, but only half staying together in a study in Tennessee. If a nest attempt fails, a female may seek out a new male on a different territory.

4. Most members of a winter flock stay in the same flock all season, but some birds are “flock switchers.” Some of these belong to one flock and then switch, joining another flock permanently and exclusively for the rest of the season. Other flock switchers regularly move between flocks. These flock-switchers may have different rankings in the hierarchy of each flock.
5. The oldest known Carolina Chickadee was at least 10 years, 11 months old when it was recaptured and rereleased during banding operations in West Virginia in 1974. It had been banded in the same state in 1963.

Notable Species:

1. *P. c. carolinensis* - Se. U.S. from n. Arkansas and e. Louisiana north to w. Tennessee, se. Kentucky, and se. Virginia.
2. *P. c. extima* - E. U.S. north of *P. c. carolinensis* west to central-e. Missouri and south to w. Tennessee and central N. Carolina.
3. *P. c. agilis* - S.-central Texas east to s. Arkansas and w. Louisiana.
4. *P. c. atricapilloides* - Se. and s.-central Kansas, Oklahoma, n.-central, and w. Arkansas, intergrading with *P. c. agilis* to the south.