

# CAROLINA WREN - THRYOTHORUS LUDOVICIANUS

**Taxonomy:** Kingdom: Animalia Phylum: Chordata Class: Aves Order: Passeriformes Family: Troglodytidae Genus: Thryothorus Vieillot, 1816 Species: T. ludovicianus

## **Habitat:**

**Biomes:** Carolina Wrens frequent vegetated habitats such as brushy thickets, lowland cypress swamps, bottomland woods, and ravines choked with hemlock and rhododendron. They gravitate toward shrubby, wooded residential areas, overgrown farmland, dilapidated buildings, and brushy suburban yards.

## **Distribution:**

**In US:** Resident in the eastern half of the United States of America, the extreme south of Ontario, Canada, and the extreme northeast of Mexico.

**In Other Countries:** NONE

**Holistic Description:** In summer it can seem that every patch of woods in the eastern United States rings with the rolling song of the Carolina Wren. This shy bird can be hard to see, but it delivers an amazing number of decibels for its size. Follow its teakettle-teakettle! and other piercing exclamations through backyard or forest, and you may be rewarded with glimpses of this bird's rich cinnamon plumage, white eyebrow stripe, and long, upward-cocked tail. This hardy bird has been wintering farther and farther north in recent decades.

**Species Richness:** 10 SUBSPECIES

**Population Dynamic:** In Virginia, some Carolina wrens populations show high levels of mercury in their blood and this is acquired from feeding all-year-round on spiders. Spiders being at a higher trophic levels contain a higher concentrations of mercury (through biomagnification) than herbivorous invertebrates. As these wrens are year-round residents, they are at a higher risk than other species to acquire mercury in its blood. Nest abandonment and failure to raise young were more common with higher mercury content. Exposure, and prolonged periods of cold, ice, and snow is thought to affect the wren nestling and adult populations, respectively. Wrens that outlast those winters reside in sheltered areas during the season.

## **Evolution and Systematics:**

**Evolution:** NONE

**Systematics:** Body size varies across the species' range, generally with larger birds farther north, but size overlaps broadly among populations. Dorsal color and saturation varies from dark and rich chestnut to pale and dull gray-brown, with various combinations in between. In general, the color of the supercilia and ventrum becomes whiter (less buffy or tawny) from north to south, whereas the presence or extent of gray barring on the flanks increases from north to south.

**Number of Species:** 10 SUBSPECIES

**Number of Genera:** 10 SUBSPECIES

## **Physical Characteristics:**

**Size and Length:** Length: 4.7-5.5 in (12-14 cm) Weight: 0.6-0.8 oz (18-22 g)

**Wingspan:** 11.4 in (29 cm)

**Coloration:** Both males and females are a bright, unpatterned reddish-brown above and warm buffy-orange below, with a long white eyebrow stripe, dark bill, and white chin and throat.

**General Body Features:** The Carolina Wren is a small but chunky bird with a round body and a long tail that it often cocks upward. The head is large with very little neck, and the distinctive bill marks it as a wren: long, slender, and downcurved.

**Special Features of the Body:** Also the size of the bird gives it the ability to hide from its predators.

**Special Features of the Head and Sensory Organs:** NONE, CHECK OTHER WREN.

**Dentition:** BEAK/LAMELLAE/GIZZARD

**Special Features of the Limbs and Digits:** NONE, CHECK OTHER WREN.

**Any Special Internal Anatomy:** Influenced by a hormone, many female C. wrens would either lose their belly feathers, or else pluck them during springtime (breeding season). Termed as a 'brood patch', this featherless part of their body then becomes highly efficient in transferring heat to the eggs, and later, the babies.

**Sexual Dimorphisms:** Male-biased size dimorphism. Sexes similar.

**Differences Between Juvenile Stage and Adult:** Juvenile plumage (April and August) is duller and paler, wing coverts with buff tips, and undertail coverts unbarred and more loosely textured.

## **Behavior:**

**Diurnal, Nocturnal, or Crepuscular:** Diurnal

**Activity:** Carolina Wrens usually go about their business alone or in pairs; after nestlings have fledged, you may see family groups feeding together. Feeding on or near the ground, the wrens run, hop, and flit around leaf litter and tangled vegetation;

they dodge in and out of dark spaces created by downed trees, decaying logs, old stumps, and upturned roots. They climb up vines, trunks, and branches, poking into squirrel nests and probing nooks and crannies in search of insects. Carolina Wrens use their curved bills to turn over decaying vegetation and to hammer and shake apart large bugs. They roost in bird boxes, abandoned hornet nests, hanging plants, garages, barns, old nests, and other shelters. A weak flyer, this wren makes brief, quick aerial forays over short distances. Pairs stay bonded year-round, with no vacation from singing or defending territory. **Locomotion:** Runs, hops, and flits about on or near ground. Dodges in and out of dark spaces created by decaying logs, old stumps, and vegetation tangles. Occasionally hops and flits up standing tree trunks and branches assisted by wings. Also hitches up tree trunks like a nuthatch or creeper. Flies weakly, short distances.

**Communication and Perception:** Only male Carolina Wrens sing—a series of several quick, whistled notes, repeated a few times. The entire song usually lasts less than 2 seconds and the notes are usually described as three-parted, as in a repeated teakettle or germany. Each male has a repertoire of up to several dozen different song variations. He'll sing one of these about 15 times before changing his tune.

**Home Range:** Territories are maintained year-round using songs and calls, which are most often issued between ground and understory levels. Males respond strongly to playback during the nonbreeding season. Mean territory size in Tennessee 4.1 ha.

**Degree of Sociality:** Usually solitary or in pairs except for family groups during the fledgling period. On 2 occasions, 3 individuals foraged together during winter.

**Level of Aggression:** Not uncommon, but occur quickly and are difficult to follow and interpret. On one occasion in fall, territorial male interacted with individual on territory in canopy. Male gave short, sharp cheer, wings held out, tail fanned, and body held horizontally except for depressed tail; bill and head pointed in direction of intruder which was a few meters away. Male remained motionless for a few seconds then flew at intruder, gave growl call. A chase ensued, and the pair flew out of view.

**Migration:** Resident (nonmigratory).

#### **Predators:**

**Predators:** Blue Jay, Cooper's Hawk, Sharp-shinned Hawk, Raccoons, Black Rat Snakes, Gray Fox, Eastern Chipmunks, Mink.

**Anti-Predator Defenses:** Chipmunks near nest are chased and pecked. Wrens give alarm calls when predators are near their nests. Alarm calls also given in response to presence of Barred Owl.

#### **Diet and Nutrition:**

**Adult Diet:** Insects and spiders make up the bulk of this wren's diet. Common foods include caterpillars, moths, stick bugs, leafhoppers, beetles, grasshoppers, crickets, and cockroaches. Carolina Wrens occasionally eat lizards, frogs, or snakes. They also consume a small amount of plant matter, such as fruit pulp and seeds from bayberry, sweetgum, or poison ivy.

**Juvenile Diet:** Nestlings fed butterfly and moth larvae, crickets and grasshoppers, spiders, beetle larvae and adults.

**Special Adaptations for Getting Prey:** Gleans from surface of ground and from tree trunks and branches. Moves slowly and deliberately, often using bill to move and turn over decaying vegetation. Curved culmen aids in lifting litter while allowing bill to remain in forward position and jab at prey. Large prey items are dismembered by strong hammering by beak, followed by shaking until small pieces break off; these often fly off and are retrieved.

#### **Reproduction:**

**Mode of Reproduction:** Monogamous

**Mating System:** Long-term monogamy.

**Mating Season:** March to August

**Courtship:** Courting males hop stiffly around females, plumage fluffed, with tail spread and raised in a turkey-like pose. Courtship also involves loud singing, calling (see Sounds: vocalizations), frequent perch changes by male, and possibly nest-building.

**Territoriality:** HOME RANGE

**Mating:** NO DATA.

**Nest Placement:** Carolina Wrens nest in open cavities 3–6 feet off the ground, in trees, overhangs and stumps. The first nest is sometimes built on vegetation-shaded ground. Near homes, they're versatile nesters, making use of discarded flowerpots, mailboxes, propane-tank covers, and a variety of other items. Their nests have even been found in old coat pockets and boots. Males often build multiple nests before the pair makes a final selection.

**Nest Description:** Male and female Carolina Wrens build their nests together. One member of the pair may stay at the site while the other gathers material. The first nest can take a week or more to build, but later ones take shape in as few as 4 days. The bulky nest is cup-shaped, usually domed, with a side entrance and often a woven extension like a porch or entrance

ramp. It's loosely constructed of a great variety of materials such as bark strips, dried grasses, dead leaves, pine needles, hair, feathers, straw, shed snakeskin, paper, plastic, or string). The female lines the nest's inner bowl and may add nest material after incubation has begun. Nests may range from 3 to 9 inches long and 3 to 6 inches wide.

Egg-Laying: Clutch Size: 3-7 eggs Number of Broods: 1-3 broods Egg Length: 0.7-0.8 in (1.7-2.1 cm) Egg Width: 0.6-0.6 in (1.4-1.6 cm) Incubation Period: 12-16 days Nestling Period: 10-16 days Egg Description: White, cream, or pinkish white, with fine rusty-brown spots.

Hatching and Incubation/Gestation: Eyes closed, with pale grayish down.

Development: Altricial. Eyes closed. Skin orange-pink and translucent. Pale grayish down in most feather tracts. Mouth lining red, and bill yellowish. Soft seee call given. Slowly lifts head and gapes straight up.

Parental Care: Only females brood. Feeding begins on hatching day. Both parents feed young directly by placing food into gaping mouths. Male sometimes delivers food to brooding female who then delivers it to young.

Lifespan: Survival rates differ by region. A male captured in Arkansas lived to be at least 73 months old, and in Alabama, the oldest female and male captured were six and ten years old, respectively. A mark-and-recapture analysis of the wrens analyzing survival probability within the Southeastern United States captured was monitored from 1992 to 2003. Roughly 90 percent of the banded wrens died within 10 years.

#### **Conservation:**

Official Federal Status: Least Concern

Special Statuses in Individual States: NONE

Threats: Carolina Wrens are common across their range and their populations are increased between 1966 and 2015, according to the North American Breeding Bird Survey. Partners in Flight estimates a global breeding population of 14 million, with 89% living in the U.S., and 10% in Mexico. This is a U.S.-Canada Stewardship species. It rates a 7 out of 20 on the Continental Concern Score. Carolina Wren is not on the 2016 State of North America's Birds' Watch List. These birds thrive over much of the eastern United States. Icy, snowy winters can abruptly reduce local populations, but they soon recover. In fact, the Carolina Wren has been pushing northward with rising average winter temperatures over the past century or so. The species has probably benefited from forest fragmentation in some areas and from reforestation in others—both processes create the tangled, shrubby habitat these birds use. In recent decades the Carolina Wren has also profited from a proliferation of backyard bird feeders. This is especially true in northern portions of the bird's range, where natural food sources can disappear beneath winter snow and ice.

Conservation Efforts: ^^^^^^^

#### **Extra Facts:**

1. The Carolina Wren is sensitive to cold weather, with the northern populations decreasing markedly after severe winters. The gradually increasing winter temperatures over the last century may have been responsible for the northward range expansion seen in the mid-1900s.
2. Unlike other wren species in its genus, only the male Carolina Wren sings the loud song. In other species, such as the Stripe-breasted Wren of Central America, both members of a pair sing together. The male and female sing different parts, and usually interweave their songs such that they sound like a single bird singing.
3. One captive male Carolina Wren sang nearly 3,000 times in a single day.
4. A pair bond may form between a male and a female at any time of the year, and the pair will stay together for life. Members of a pair stay together on their territory year-round, and forage and move around the territory together.
5. The oldest recorded Carolina Wren was at least 7 years, 8 months old when it was recaptured and rereleased during banding operations in Florida in 2004. It had been banded in the same state in 1997.

#### **Notable Species:**

1. T. l. ludovicianus (Latham, 1790) – Southeast Canada (Southern Ontario, irregularly in Eastern and Southern Quebec) and the eastern United States (Southern Wisconsin and New England southward to Texas and northern Florida).
2. T. l. miamensis Florida wren (Ridgway, 1875) – Florida from approximately 30 degrees (Gainesville) region southward through the rest of the state.
3. T. l. nesophilus (Stevenson, 1973) – Dog Island in Northwestern Florida.
4. T. l. burleighi – Burleigh's Carolina wren (Lowery, 1940) Offshore islands off of the Mississippi coast: Cat Island, Ship Island (Mississippi), and Horn Island.
5. T. l. lomitensis – Lomita wren (Sennett, 1890) southern Texas to the extreme northeast of Mexico (Tamaulipas).
6. T. l. berlandieri – Berlandier's wren (S. F. Baird, 1858) Northeastern Mexico (eastern Coahuila, Nuevo León, and southwestern Tamaulipas)

7. *T. l. tropicalis* – Northeastern Mexico (eastern San Luis Potosí and southern Tamaulipas).
8. *T. ludovicianus* is traditionally placed within its own genus as its only representative of North America, but recent DNA work suggests it is closely allied with the Bewick's wren. A distinct population in the Yucatán Peninsula of Mexico, Belize, Nicaragua, and in Guatemala is treated as a separate species, either known as Cabot's wren or white-browed wren (*Thryothorus albinucha*). It is considered a subspecies of *T. ludovicianus* by some authors, however.