

CACTUS WREN - CAMPYLORHYNCHUS BRUNNEICAPILLUS

Taxonomy: Kingdom: Animalia Phylum: Chordata Class: Aves Order: Passeriformes Family: Troglodytidae Genus: Campylorhynchus Species: C. brunneicapillus

Habitat:

Biomes: Cactus Wrens live in scrubby areas in the Chihuahuan, Sonoran, and Mojave Deserts as well as in coastal sage scrub in California and thorn-scrub areas in Tamaulipas, Mexico. They inhabit areas with cholla, saguaro, and prickly-pear cacti, catclaw acacia, mesquite, whitethorn, desert willow, yucca, palo verde, and other desert shrubs. Small patches of prickly-pear and cholla cacti mixed with short sagebrush and buckwheat are great spots for Cactus Wrens in coastal California and northwestern Baja California, Mexico.

Distribution:

In US: The cactus wren is a bird of arid and semi-desert regions. Its range includes the Sonoran and Chihuahuan Deserts, and generally requires spiny cactus to nest in. The cactus wren is not migratory, and carves out permanent territories which it defends vigorously. The cactus wren's range is bi-national, existing in only the United States and Mexico. In the U.S. it is present in California, Nevada, Utah, Arizona, New Mexico, and Texas. In California it is found mainly as southern coastal populations existing below 600 m (2,000 ft), but some have been found up to 950 m (3,120 ft).

In Other Countries: NONE

Holistic Description: No bird exemplifies Southwestern deserts better than the noisy Cactus Wren. At all hours of the day they utter a raw scratchy noise that sounds like they are trying to start a car. Cactus Wrens are always up to something, whether hopping around on the ground, fanning their tails, scolding their neighbors, or singing from the tops of cacti. They build nests the size and shape of footballs which they use during the breeding and nonbreeding season. Cactus Wrens are true desert dwellers; they can survive without needing to drink freestanding water.

Species Richness: 8 SUBSPECIES

Population Dynamic: The cactus wren is abundant in most of its native range, although its numbers may be declining in Texas and southern California. The IUCN classifies its population as "decreasing", but ranks the species conservation status as Least Concern. Current population estimates put the species at about seven million individuals, with slightly more than half residing in Mexico, and the rest in the United states.

Evolution and Systematics:

Evolution: NONE

Systematics: Variation is marked in plumage color and pattern, with phenotypic characters separating the species into two groups that "look like different species". One group is on the Baja California peninsula, the other on continental Mexico and the adjacent sw. United States.

Number of Species: 8 SUBSPECIES

Number of Genera: 8 SUBSPECIES

Physical Characteristics:

Size and Length: Length: 7.1-8.7 in (18-22 cm) Weight: 1.1-1.7 oz (32-47 g)

Wingspan: 11 inches

Coloration: The Cactus Wren is a speckled brown bird with bright white eyebrows that extend from the bill, across and above their red eyes, to the sides of the neck. They have pale cinnamon sides and a white chest with dark speckles. The back is brown with heavy white streaks, and the tail is barred white and black—especially noticeable from below. Males and females look alike, but juveniles are slightly paler and have a brown eye.

General Body Features: The Cactus Wren is a large chunky wren with a long heavy bill, a long, rounded tail, and short, rounded wings. The Cactus Wren is the largest wren in the United States and is similar in size to a Spotted Towhee.

Special Features of the Body: They live in the California desert year round, and build their nests in cacti or other prickly plants that make it difficult for predators to take their eggs or chicks.

Special Features of the Head and Sensory Organs: Increasing temperatures cause a shift in foraging behavior to shady and cooler microclimates, and activity slows during hot afternoon temperatures.

Dentition: BEAK/LAMELLAE/GIZZARD

Special Features of the Limbs and Digits: Almost all water is obtained from food, and free-standing water is rarely used even when found.

Any Special Internal Anatomy: While the female is incubating on clutch of eggs, the male wren builds another nest. This nest will be used or a second clutch of eggs as the parents may rear several broods of young in one year. Building the nest in

cactus provides some amount of protection for the young. The wrens also use these nest throughout the year as places to roost.

Sexual Dimorphisms: Sexes alike. Differ only slightly in measurements.

Differences Between Juvenile Stage and Adult: First-year birds with gray to reddish brown iris; compared with adult, bill shorter and straighter, crown darker, markings on back and wing with less contrast, underparts typically buffier, with sparser and less distinct spotting.

Behavior:

Diurnal, Nocturnal, or Crepuscular: Diurnal

Activity: Cactus Wrens are inquisitive wrens that make their presence well known, singing atop tall shrubs and hopping around on the ground in the open. Cactus Wrens are active all hours of the day and spend most of their time foraging in open areas, but they move into shady areas to forage when temperatures increase. Unlike most birds, they use their nests year-round, not just for breeding. After sunset they head back to their nests for the night. They are not particularly strong fliers and generally make jerky flights alternating between rapid wingbeats and short glides. Adults pair up for the breeding by first uttering a growling sound with their wings and tail spread before they gently peck each other. In extreme droughts some pairs may forgo breeding, but in normal conditions, Cactus Wrens breed every year and sometimes raise 3 broods in a season. They defend their territories year-round. When another bird enters their territory, they spread their tails, fluff up their feathers, scold, and even give chase. If they discover a predator such as a snake near their nest they will scold and mob the predator. Snakes, domestic cats, hawks, and Greater Roadrunners prey on adults, eggs, and nestlings.

Locomotion: Generally hops on ground to forage and move through brush, but also climbs trees. Short and jerky, not protracted.

Communication and Perception: The song of the Cactus Wren is a quintessential sound of the desert and sounds like a car that just won't start. Each attempt to start the car lasts for about 4 seconds with a 4–8 second pause before they try again. The raspy, harsh, loud series of harsh "char" notes, increases slightly in volume and pitch, and the sound carries through the heat of the desert, as far as 1,000 feet away. Females also sing, although their weaker and higher-pitched song is rarely heard. Males sing to attract females and to communicate with their mate and young as well as to warn potential intruders.

Home Range: Territories average 1.3 ha (0.013 km²) to 1.9 ha (0.019 km²). The size and shape of territories change very little throughout the season. Territory is defended from other birds by fluffing tails and feathers and vocal scolding. Persistent trespassers may cause the wrens to give chase.

Degree of Sociality: Normally found in pairs or family groups on established territories.

Level of Aggression: Observation of "fully developed agonistic behavior" between two hand-raised birds from different nests at 21 and 22 d suggests "rapid development of dominance/subordinance relationships among fledglings which may facilitate cohesion within the family group" At long-term study site in se. Arizona, territory boundaries generally tacitly accepted by neighboring pairs during early part of the nesting period; most boundary disputes occurred after first brood fledged; fledglings respected territory boundaries; disputes occurred most frequently when breeding nests of two pairs were close together; disputes not solved by stereotyped displays (see following paragraph) devolved into brief chases or fighting, in which individuals flew up facing each other, pecked and fluttered until they dropped; in some cases, fight continued with individuals grasping a foot or a wing with bills and claws; fights often ended with displacement behavior such as preening, feeding, or nest-building.

Migration: Resident (nonmigratory).

Predators:

Predators: Nests built in cactus provide a degree of protection to young, yet even in cactus, young wrens are vulnerable to predation by coachwhip snakes. When threatened, young in nests were observed to try to blend in with the nest, and flattened themselves against the nest walls. Adults are preyed upon by coyotes, foxes, hawks, bald eagles, domestic cats, and greater roadrunners. Upon detection of predators, cactus wrens will usually mob the predator and vocally scold it. They may also chase ground based predators and intruders. Predator alarm calls are usually a low buzz, or sometimes a staccato "tek" which is repeated. In response to birds of prey adults may attempt to move closer to the ground or leave calling spots.

Anti-Predator Defenses: Invariable response of Cactus Wrens to model (taxidermy) whipsnake placed near active nest involved vocalizing, flying, and running within a few meters of the model; aggressive/mobbing responses to actual snakes also recorded.

Diet and Nutrition:

Adult Diet: Cactus Wrens eat mostly spiders and insects such as beetles, ants, wasps, grasshoppers, and butterflies. They find these while hopping on the ground and turning over leaves or by searching bushes and tree bark. Cactus Wrens also eat fruit, particularly cactus fruits. They get the majority of their water from the food they eat and rarely drink free-standing water.

Juvenile Diet: In New Mexico (3-yr study), diet of nestlings <2 d old consisted of small arthropods (e.g., spiders) and small larvae; for older nestlings, grasshoppers and Lepidoptera larvae were, respectively, 95 and 5% of diet. Adults removed wings of grasshoppers delivered to nestlings <7 d old.

Special Adaptations for Getting Prey: Usually hops about on ground to forage; turns over leaves and other ground debris to locate insects and other prey items; capture usually made with bill.

Reproduction:

Mode of Reproduction: Monogamous

Mating System: Presumed socially monogamous.

Mating Season: March to June

Courtship: When male meets female, male spreads wings and tail while uttering low Growling sound; female displays similarly and may also Growl; duration only 2–3 s. Female is first to return wings to normal; male retains threatening posture a moment longer, then pokes head under female's chin or may peck under female's tail. Female may peck at male's toes while crouching.

Territoriality: HOME RANGE

Mating: NONE

Nest Placement: The female initiates nest building, but after she selects the spot, the male jumps in to help out. They build the nest 3–10 feet above the ground in a cholla, palo verde, acacia, mesquite, or other desert vegetation where the nest is surrounded by thorns.

Nest Description: Male and female Cactus Wrens build large football-shaped nests with tunnel-shaped entrances. The pair amasses coarse grass and plant fibers to create a nest about 7 inches in diameter and 12 inches long, which weighs in at 6 ounces. The entrance is around 3.5 inches in diameter—large enough for the parents to squeeze in but small enough to keep most potential predators out. They line the inside of the nest with feathers. The pair builds the nest in 1–6 days, but most of the construction takes place within the first 3 hours of each morning.

Egg-Laying: Clutch Size: 2-7 eggs Number of Broods: 1-3 broods Egg Length: 0.8-1.0 in (2-2.6 cm) Egg Width: 0.6-0.7 in (1.5-1.8 cm) Incubation Period: 16-17 days Nestling Period: 17-23 days Egg Description: Salmon pink to buff with reddish brown spots.

Hatching and Incubation/Gestation: Mostly naked with patches of fluffy white down along spine, wing edges, and head. Eyes closed.

Development: Altricial young. Once dry, down fluffy and white, varying in length from 4 to 8.5 mm; mass 2.6–4.1 g. Down present in tufts in capital, spinal, humeral, alar, femoral, crural, and ventral tracts. Bare crown surrounded by complete or incomplete ring of down extending from forehead, above eyes, and crossing at occiput; dense tuft of down in dorsal and pelvic regions.

Parental Care: While brooding, female will not accept food or allow male to feed nestlings.

Lifespan: 7-10 years

Conservation:

Official Federal Status: Least Concern

Special Statutes in Individual States: NONE

Threats: Cactus Wren populations declined by about 1.6% per year between 1966 and 2015, resulting in a cumulative decline of 55% over that period, according to the North American Breeding Bird Survey. Partners in Flight estimates the global breeding population at 7 million, with 43% in the U.S. and 57% in Mexico. The species rates a 12 out of 20 on the Continental Concern Score, and is a U.S.-Canada Stewardship species. Cactus Wren is not on the 2016 State of North America's Birds' Watch List. Urban and agricultural expansion threaten Cactus Wren habitat especially when cacti and desert shrubs are lost altogether.

Conservation Efforts: ^^^^^^

Extra Facts:

1. Most birds only build nests during the breeding season and use them just for rearing their young, but male and female Cactus Wrens build multiple nests and use them as roosting sites even during the nonbreeding season.
2. Juvenile Cactus Wrens start building nests early in life. They imitate their parents by picking up nesting material as soon as 12 days after leaving the nest, but they don't actually build their own nest until they've been out of the nest for about 63 days.
3. Adults often feed their nestlings grasshoppers, being careful to pluck off the wings before stuffing the insect into the chicks' mouths. The parents need to pluck a lot of grasshopper wings; one nestling needs to eat at least 14 grasshoppers a day to meet its nutritional requirements.

4. The Cactus Wren destroys the nests of other bird species, pecking or removing their eggs, and can lower the breeding density of Verdins (another desert bird).
5. Cold desert nights may have more of an impact on the success of Cactus Wren breeding than extremely hot daytime temperature.
6. Cactus Wrens rarely drink water. Instead they get all their liquids from juicy insects and fruit.
7. The Cactus Wren is the state bird of Arizona.
8. The oldest recorded Cactus Wren was a male, and at least 8 years, 1 month old when it was identified in California by a leg band in 2013. It had been banded in the same state in 2006.
9. The Cactus Wren is an active mobber of nest predators. A pair was observed attacking a Yuma antelope squirrel so vigorously that the squirrel became impaled on the thorns of a cactus. The wrens continued to peck the squirrel until it was knocked to the ground where it escaped.
10. Before heading back to the nest for the night, many Cactus Wrens take a dust bath. Several species also take dust baths to help reduce feather parasites and keep feathers looking good.

Notable Species:

1. *C. b. brunneicapillus* (Lafresnaye, 1835) – Range is in northern Mexico in Sonora and Sinaloa state. *C. brunneicapillus* is the oldest classification of cactus wren, and thus includes members of *C. b. couesi*. Its flanks are more buff colored and the spots on its abdomen are more delineated than the nominate race. Its distinction from other races is enhanced by its pure white chin.
2. *C. b. guttatus* (Gould, 1836) – Found in central and southern Mexico. It is duller and more grey than the nominate race; its upper parts have less noticeable white markings.
3. *C. b. affinis* (Xántus, 1860) – Found in southern Baja. Its underparts are paler, and it has less black marks than the nominate race. Its rectrices, excluding the middle pair, have white bars. *C. b. affinis* tends to lay less eggs than other races, generally two at a time instead of the more typical clutch of three to five, and those eggs are notably paler than that of other races. This race is sometimes further broken into *C. b. affinis* and *C. b. purus*, but this distinction is not widely recognized.
4. *C. b. couesi* (Sharpe, 1882) – Covers most of the cactus wren's range in the southern United States, including Nevada, Utah, Arizona, New Mexico, and Texas, as well as Sonora and Chihuahua states in Mexico. The American Ornithologists Union classifies all California subspecies as *C. b. couesi*. It is larger than the nominate race and has paler underparts. It is sometimes referred to as *C. b. anthonyi*, but *C. b. couesi* takes precedence.
5. *C. b. bryanti* (Anthony, 1894) – Found along the western coast of Baja California, it is separated from the range of *C. b. couesi* by at least 150 mi (240 km). *C. b. bryanti* has notable white markings on the rump and scapulars. Its upperparts are darker and more brown than those of the nominate race.
6. *C. b. purus* (van Rossem, 1930) – Present on the eastern and western coasts of Baja California. Its underparts are almost pure white, and its flanks are notably less cinnamon colored than the nominate race.
7. *C. b. seri* (van Rossem, 1932) – Found in the Gulf of California. Underparts are less cinnamon than nominate, and the spots on its abdomen are wider. Molecular DNA studies have shown that *C. b. seri* may not be a distinctive race.
8. *C. b. sandiegensis* (Rea, 1986) – Found in Baja California and parts of southern California. This subspecies is not accepted by the American Ornithologists union, which instead believes it to be an intermediate between *C. b. couesi* and *C. b. bryanti*, and classifies it as the former. Its crown lacks or has lessened red tinge on crown compared to the nominate race. Its eggs are darker than those of other races.