

NORTHERN CARDINAL - CARDINALIS CARDINALIS

Taxonomy: Kingdom: Animalia Phylum: Chordata Class: Aves Order: Passeriformes Family: Cardinalidae Genus: Cardinalis
Species: C. cardinalis

Habitat:

Biomes: Look for Northern Cardinals in dense shrubby areas such as forest edges, overgrown fields, hedgerows, backyards, marshy thickets, mesquite, regrowing forest, and ornamental landscaping. Cardinals nest in dense foliage and look for conspicuous, fairly high perches for singing. Growth of towns and suburbs across eastern North America has helped the cardinal expand its range northward.

Distribution:

In US: Northern cardinals are numerous across the eastern United States from the southern half of Maine to Minnesota to the Texas-Mexico border and in Canada in the southern portions of Ontario, Quebec, New Brunswick and Nova Scotia. Its range also extends south through Mexico to the Isthmus of Tehuantepec, northern Guatemala, and northern Belize.

In Other Countries: ^^^^^^^

Holistic Description: The male Northern Cardinal is perhaps responsible for getting more people to open up a field guide than any other bird. They're a perfect combination of familiarity, conspicuousness, and style: a shade of red you can't take your eyes off. Even the brown females sport a sharp crest and warm red accents. Cardinals don't migrate and they don't molt into a dull plumage, so they're still breathtaking in winter's snowy backyards. In summer, their sweet whistles are one of the first sounds of the morning.

Species Richness: 19 SUBSPECIES

Population Dynamic: It is listed as a species of least concern by the IUCN Red List, with an estimated global range of 5,800,000 km² (2,200,000 sq mi) and a global population of some 100 million. Populations appear to remain stable and not threatened to reach the threshold of inclusion as a threatened species, which requires a decline of more than 30% in ten years or three generations. It was once prized as a pet due to its bright color and distinctive song.

Evolution and Systematics:

Evolution: From Hohokam, upper San Pedro River, s. Sonora, Mexico: Premaxilla dated 550–700 at Big Ditch Site; another dated about 1200 at Alder Wash Ruin.

Systematics: Varies in overall size, shape, and relative size of bill; length and stiffness of crest-feathers; relative lengths of wings, tail, and feet; relative extent of face-mask (including forehead, lores, base of chin, and throat); and coloration, including color of face-mask in females.

Number of Species: 19 SUBSPECIES

Number of Genera: 19 SUBSPECIES

Physical Characteristics:

Size and Length: Length: 8.3-9.1 in (21-23 cm) Weight: 1.5-1.7 oz (42-48 g)

Wingspan: 9.8-12.2 in (25-31 cm)

Coloration: Male cardinals are brilliant red all over, with a reddish bill and black face immediately around the bill. Females are pale brown overall with warm reddish tinges in the wings, tail, and crest. They have the same black face and red-orange bill.

General Body Features: The Northern Cardinal is a fairly large, long-tailed songbird with a short, very thick bill and a prominent crest. Cardinals often sit with a hunched-over posture and with the tail pointed straight down.

Special Features of the Body: However, only the males of the species have this kind of coloring, whereas the females are light brown or green-brown with only a slight hint of dark red. Females have what is known as cryptic coloration -- plumage that allows them to camouflage themselves in their surroundings and potentially avoid predation

Special Features of the Head and Sensory Organs: Since cardinals are primarily seed eaters -- although they do also eat fruits and insects -- they have specially adapted beaks to help them with their diet. Their short, thick and conical beaks allow them to easily crack seeds, getting through the husk and allowing them access to the nutritious meat inside.

Dentition: BEAK/LAMELLAE/GIZZARD

Special Features of the Limbs and Digits: NONE

Any Special Internal Anatomy: NONE

Sexual Dimorphisms: The male averages slightly larger than the female. The adult male is a brilliant crimson red color with a black face mask over the eyes, extending to the upper chest. The color becomes duller and darker on the back and wings. The female is fawn, with mostly grayish-brown tones and a slight reddish tint on the wings, the crest, and the tail feathers. The

face mask of the female is gray to black and is less defined than that of the male. Both sexes possess prominent raised crests and bright coral-colored beaks.

Differences Between Juvenile Stage and Adult: Sexes similar, but males may show some red on breast and flanks. Scott suggested that Juvenile rectrices are more pointed than adult rectrices, but Wiseman cautioned that damaged feathers in adults are also replaced by more pointed feathers.

Behavior:

Diurnal, Nocturnal, or Crepuscular: Diurnal

Activity: Northern Cardinals hop through low branches and forage on or near the ground. Cardinals commonly sing and preen from a high branch of a shrub. The distinctive crest can be raised and pointed when agitated or lowered and barely visible while resting. You typically see cardinals moving around in pairs during the breeding season, but in fall and winter they can form fairly large flocks of a dozen to several dozen birds. During foraging, young birds give way to adults and females tend to give way to males. Cardinals sometimes forage with other species, including Dark-eyed Juncos, White-throated Sparrows, other sparrow species, Tufted Titmice, goldfinches, and Pyrrhuloxias. They fly somewhat reluctantly on their short, round wings, taking short trips between thickets while foraging. Pairs may stay together throughout winter, but up to 20 percent of pairs split up by the next season.

Locomotion: Hops on ground and in vegetation. Undulating flight in open areas; short flights between adjacent branches when foraging. During courtship, male flight display includes short, rapid wing beats as he slowly descends.

Communication and Perception: Both male and female Northern Cardinals sing. The song is a loud string of clear down-slurred or two-parted whistles, often speeding up and ending in a slow trill. The songs typically last 2 to 3 seconds. Syllables can sound like the bird is singing cheer, cheer, cheer or birdie, birdie, birdie. Males in particular may sing throughout the year, though the peak of singing is in spring and early summer.

Home Range: Defended territory sizes during breeding season range from 0.21 to 2.60 ha. Older males establish territories before first-year males, and often obtain approximately same territory as that of the previous year. Territory boundary locations in a given area may be similar from year to year, even when different individuals occupy some of the territories. Territory is established by singing, postures, pursuit, and combat. Each mate chases out members of its own sex, but does not assist its mate in pursuing individuals of opposite sex. Both males and females leave territory, usually quietly and near the ground, to feed and bathe.

Degree of Sociality: Solitary, compared with many songbirds; highly territorial during breeding season. Winter flocks not strongly cohesive. Rare cooperative breeding; no cooperative foraging or obvious play behavior. Pairs will mob predators near nest.

Level of Aggression: Agonistic interactions seen in 2 main contexts: maintaining distance between individuals and defense of territory during breeding season. Interactions are usually limited to displays and chases. When individuals fight, they grapple with feet and strike with beaks, either in air or on ground; these encounters are rare and usually last a few seconds. Continual chases between males lasting 10-30 min with little rest have also been observed.

Migration: NONE

Predators:

Predators: Northern cardinals are preyed upon by a wide variety of predators native to North America, including falcons, all Accipiter hawks, shrikes, bald eagles, golden eagles and several owls, including long-eared owls, and eastern screech owls. Predators of chicks and eggs include milk snakes, coluber constrictors, blue jays, eastern gray squirrels, fox squirrels, eastern chipmunks, and domestic cats.

Anti-Predator Defenses: In controlled experiments with predator models, females responded more strongly at egg stage than males, giving chip calls and flying toward predator. Similar responses were given by both parents at nestling stage, although females gave more alarm calls. No evidence for predator-specific defense.

Diet and Nutrition:

Adult Diet: Northern Cardinals eat mainly seeds and fruit, supplementing these with insects (and feeding nestlings mostly insects). Common fruits and seeds include dogwood, wild grape, buckwheat, grasses, sedges, mulberry, hackberry, blackberry, sumac, tulip-tree, and corn. Cardinals eat many kinds of birdseed, particularly black oil sunflower seed. They also eat beetles, crickets, katydids, leafhoppers, cicadas, flies, centipedes, spiders, butterflies, and moths.

Juvenile Diet: ^^^^^^^

Special Adaptations for Getting Prey: Bill highly adapted for extracting seeds by cutting or crushing shells. Takes fruits from trees, shrubs, and vines; commonly peels grapes in bill to remove pulp and seed, and discards skin.

Reproduction:

Mode of Reproduction: Monogamous

Mating System: Socially monogamous, but polygyny observed, perhaps because of persistence of unmated female staying on mated male's territory.

Mating Season: February to April

Courtship: Pair bond is initiated with various courtship displays. During Lopsided Display, male twists and rotates his body to display breast, and holds crest low, wings spread, and feathers flat. Song-Dance Display is similar to Lopsided Display, but more upright, with crest erect. Male sings, swaying back and forth. During Song-Flight Display, male fluffs breast feathers, raises crest, sings, and descends slowly toward female, beating wings in short, rapid strokes.

Territoriality: HOME RANGE

Mating: Male continues courtship with feeding. Female may assume begging posture to obtain food, quivering wings like a juvenile. When ready to mate, female gives Precopulatory Display: Points beak and tail upward, lowers and quivers wings, fluffs breast feathers, and separates ventral feathers to expose cloacal opening.

Nest Placement: A week or two before the female starts building, she starts to visit possible nest sites with the male following along. The pair call back and forth and hold nesting material in their bills as they assess each site. Nests tend to be wedged into a fork of small branches in a sapling, shrub, or vine tangle, 1-15 feet high and hidden in dense foliage. They use many kinds of trees and shrubs, including dogwood, honeysuckle, hawthorn, grape, redcedar, spruce, pines, hemlock, rose bushes, blackberry brambles, elms, sugar maples, and box elders.

Nest Description: Males sometimes bring nest material to the female, who does most of the building. She crushes twigs with her beak until they're pliable, then turns in the nest to bend the twigs around her body and push them into a cup shape with her feet. The cup has four layers: coarse twigs (and sometimes bits of trash) covered in a leafy mat, then lined with grapevine bark and finally grasses, stems, rootlets, and pine needles. The nest typically takes 3 to 9 days to build; the finished product is 2-3 inches tall, 4 inches across, with an inner diameter of about 3 inches. Cardinals usually don't use their nests more than once.

Egg-Laying: Clutch Size: 2-5 eggs Number of Broods: 1-2 broods Egg Length: 0.9-1.1 in (2.2-2.7 cm) Egg Width: 0.7-0.8 in (1.7-2 cm) Incubation Period: 11-13 days Nestling Period: 7-13 days Egg Description: Grayish white, buffy white, or greenish white speckled with pale gray to brown.

Hatching and Incubation/Gestation: Naked except for sparse tufts of grayish down, eyes closed, clumsy.

Development: Altricial; naked except for sparse fine gray down along feather tracts. Eyes closed. Able to hold head up and open mouth. Skin transparent, giving chicks a yellowish coloration. Gape red-orange, with yellow edge. Young Brown-headed Cowbird nestlings remarkably similar, but down light buffy yellow to white; rictal flanges white in eastern and central subspecies.

Parental Care: Commences soon after hatching. As during incubation, male brings food to female either at or away from nest.

Lifespan: Up to 16 years.

Conservation:

Official Federal Status: Least Concern

Special Statuses in Individual States: NONE

Threats: Northern Cardinal populations slightly increased between 1966 and 2014, according to the North American Breeding Bird Survey. Partners in Flight estimates a global breeding population of 120 million with 77% living in the U.S., and 22% in Mexico. They rate a 5 out of 20 on the Continental Concern Score and are not on the 2014 State of the Birds Watch List. The expansion of people and their backyards over the last two centuries has been good for cardinals. However, habitat loss in southeastern California, at the edge of the cardinal's range, may cause the disappearance of the cardinal population there.

Conservation Efforts: ^^^^^^^

Extra Facts:

1. Only a few female North American songbirds sing, but the female Northern Cardinal does, and often while sitting on the nest. This may give the male information about when to bring food to the nest. A mated pair shares song phrases, but the female may sing a longer and slightly more complex song than the male.
2. Many people are perplexed each spring by the sight of a cardinal attacking its reflection in a window, car mirror, or shiny bumper. Both males and females do this, and most often in spring and early summer when they are obsessed with defending their territory against any intruders. Birds may spend hours fighting these intruders without giving up. A few weeks later, as levels of aggressive hormones subside, these attacks should end (though one female kept up this behavior every day or so for six months without stopping).

3. The male cardinal fiercely defends its breeding territory from other males. When a male sees its reflection in glass surfaces, it frequently will spend hours fighting the imaginary intruder.
4. A perennial favorite among people, the Northern Cardinal is the state bird of seven states.
5. The oldest recorded Northern Cardinal was a female, and was 15 years, 9 months old when she was found in Pennsylvania.

Notable Species:

1. *C. c. cardinalis* (Linnaeus, 1758)
2. *C. c. affinis* Nelson, 1899
3. *C. c. canicaudus* Chapman, 1891
4. *C. c. carneus* (Lesson, 1842)
5. *C. c. clintoni* (Banks, 1963)
6. *C. c. coccineus* Ridgway, 1873
7. *C. c. flammiger* J.L. Peters, 1913
8. *C. c. floridanus* Ridgway, 1896
9. *C. c. igneus* S.F. Baird, 1860
10. *C. c. littoralis* Nelson, 1897
11. *C. c. magnirostris* Bangs, 1903
12. *C. c. mariae* Nelson, 1898
13. *C. c. phillipsi* Parkes, 1997
14. *C. c. saturatus* Ridgway, 1885
15. *C. c. seftoni* (Huey, 1940)
16. *C. c. sinaloensis* Nelson, 1899
17. *C. c. superbus* Ridgway, 1885
18. *C. c. townsendi* (van Rossem, 1932)
19. *C. c. yucatanicus* Ridgway, 1887