

# CLAPPER RAIL - RALLUS LONGIROSTRIS

**Taxonomy:** Kingdom: Animalia Phylum: Chordata Class: Aves Order: Gruiformes Family: Rallidae Genus: Rallus Species: R. crepitans

## **Habitat:**

**Biomes:** Clapper Rails live in saltmarshes with extensive vegetation, which they use as refuges, especially at high tide. These birds prefer low portions of coastal wetlands dominated by cordgrass (spartina), pickleweed, mangroves, and other vegetation.

## **Distribution:**

**In US:** The clapper rail is found along the Atlantic coasts of the eastern U.S., Gulf of Mexico, eastern Mexico, some Caribbean islands, and south through eastern Central America, as well at several inland locales.

**In Other Countries:** ^^^^^

**Holistic Description:** The large Clapper Rail is abundant in saltwater marshes and mangrove swamps from the U.S. East Coast to Central America and the Caribbean. This secretive bird lives most of its life concealed in dense vegetation. In 2014, the species was split into three: Clapper Rail; Ridgway's Rail of California, Arizona, and Nevada; and Mangrove Rail of South America.

**Species Richness:** 8 SUBSPECIES.

**Population Dynamic:** Populations are stable on the East Coast of the U.S., although the numbers of this bird have declined due to habitat loss. Clapper rails are saltmarsh specialists, and are highly mobile across their range, with females showing weak philopatry and a lack of philopatry in males.

## **Evolution and Systematics:**

**Evolution:** Fossils of rails (*Rallus elegans* or *R. longirostris*) have been reported from late Pliocene or early Pleistocene (early Blancan); (3.5 million yr ) Hagerman local fauna of Idaho. Three other fossil species have been described that are closely related to or synonymous with *R. elegans* and *R. longirostris*: *Rallus philippsi*, from upper Pliocene deposits in Mohave County, Arizona, described from right tarsometatarsus, was smaller than *R. longirostris*, but falls within lower size range of modern material.

**Systematics:** Plumage coloration and body size and proportions vary considerably across this species' wide geographic range. In general, birds are darker and more richly colored from north to south along the coast of the eastern United States. Plumage on the Atlantic Coast of the United States and in the Caribbean varies from gray to dull gray brown or buff, with grayer plumage to the north. Populations from eastern Mexico, Central America, and the northern Caribbean are paler than those farther north, although it may be that insular populations in the western Gulf of Mexico and southern Caribbean tend to be darker than those on nearest mainland. 8 SUBSPECIES.

**Number of Species:** 8 SUBSPECIES.

**Number of Genera:** 8 SUBSPECIES.

## **Physical Characteristics:**

**Size and Length:** Length: 12.6-16.1 in (32-41 cm) Weight: 9.2-14.1 oz (260-400 g)

**Wingspan:** 20 inches (50.8 cm)

**Coloration:** Large, gray-brown to dull cinnamon rail with slender, slightly decurved bill. Adult coloration is highly variable, ranging from grayish brown to cinnamon brown. Back-feathers have blackish or dusky centers of varying width. Flanks marked with alternate white and dusky to dull black bars.

**General Body Features:** Medium-sized, chicken-like marsh bird. Compact body. Short tail. Strong legs. Long, slightly down-curved bill. Rounded wings. Gray or reddish; considerable variation in plumage color within many subspecies. Dull stripes on flanks.

**Special Features of the Body:** A Ridgway's Rail has a strangely shaped body, with a bulging breast and a rather saggy rear. If you catch a head-on view, though, you'll see that the bird is laterally compressed—looking surprisingly thin, as if it had walked into a closing vice. Both configurations make it easier for the bird to slip through dense vegetation without being seen or creating a noisy distraction.

**Special Features of the Head and Sensory Organs:** Rails have a highly developed olfactory process with many mucous cells, and a large olfactory bulb in the brain, suggesting they may use smell to assist in locating prey; deserves further study.

DOWN CURVED BEAK PROVIDES FOOD ADVANTAGE

**Dentition:** BEAK/LAMELLAE/GIZZARD

**Special Features of the Limbs and Digits:** NONE

Any Special Internal Anatomy: Ridgway's Rails can produce large clutches (5-14 eggs) and can even raise a second brood after a successful first nesting. If things don't go that well, pairs may renest up to five times following a series of nesting failures. Overall, nesting success can be high in high-quality habitats.

Sexual Dimorphisms: Males average larger than females, but the sexes are alike in plumage.

Differences Between Juvenile Stage and Adult: Downy chick black, with pied bill. Juvenile similar to adult, but marking indistinct and with variable amount of black on sides.

### **Behavior:**

Diurnal, Nocturnal, or Crepuscular:

Activity: Clapper Rails live most of their lives on the ground, concealed amid dense vegetation. They occasionally climb into tall vegetation to investigate a sound or call of another animal. They rarely fly; they instead walk in an often irregular path with neck outstretched, and tail erect, jerking up and down if agitated. Birds may run in response to a threat, holding tail and head straight out and body horizontal. These birds spend much of their time foraging for prey, which they capture by gleaning from the surface or from shallow probes with their bills into the substrate. Clapper Rails are territorial during nesting season, but may form loose colonies, though this is less because they are social, and more because habitat availability and high water levels concentrate individuals onto higher ground. Birds respond to alarm calls and behaviors of other species. They swim well, and will dive if threatened. Clapper Rails are monogamous during the breeding season. Pairs work together to raise young. Adults may use a "broken wing" display to lead predators away from nests. They may compete directly with gulls for nest sites.

Locomotion: Prefers walking or running to other forms of locomotion. Walks upright unless forced to crouch to avoid vegetation. Confines most activity to dense vegetation, thus appearing "wary" or "secretive." Walking is slow and deliberate; often darts head. Holds feathers compacted, neck outstretched, and tail erect, and moves in irregular path. May jerk tail up and down when walking, especially if agitated. Seldom flies during summer or winter. When flushed, short-distance flight is slow and labored, with legs dangling below body. Swims well, sitting high on water and holding head and neck up. Swimming used for locomotion only to cross channels or escape immediate threat, especially at high tide. Dives only if wounded or in response to immediate threat. Holds onto submersed vegetation in such cases. Uses wings for propulsion underwater.

Communication and Perception: Call a short series of clacking or grunting notes.

Home Range: The Clapper Rail is territorial during the nesting season. Territory established by male giving kek call; defense by kek and Clapper vocalizations and by chases. Defends territory against all other calling Clapper Rails except mate and brood, but may tolerate silent or passive individuals in the territory. Nature of interspecific territoriality is poorly known, but is known to defend against Laughing Gull. Smallest territory size in Virginia was 0.1 ha.

Degree of Sociality: Tend to form loose colonies, although this tendency may be associated with quality of habitat and not sociality. Social groups rarely form outside the family unit, and usually only at high tide when individuals concentrate on high ground.

Level of Aggression: Male-male interactions consist of chasing and attempting to peck each other and flapping wings. Attacking birds in territorial interactions chase intruders and give Clapper vocalization when intruder has left territory.

Migration: Resident to short-distance migrant. Food availability may determine seasonal movements.

### **Predators:**

Predators: Fish Crows, Laughing Gull, Raccoon, Great Blue Heron, Bald Eagle, Northern Harrier, Harris' Hawk, Red-Shouldered Hawk, Red-tailed Hawk, White-tailed Hawk, Peregrine Falcon, Barn Owl, Great Horned Owl, Short-eared Owl, American Mink, Coyote, Virginia Opossum, Feral Dog, Cat, and Rattlesnake.

Anti-Predator Defenses: Avian predators near nests late in incubation period evoke Screech alarm call. Adults emit sharp kek to warn chicks of predators. Adults escape from avian predators by seeking cover in dense herbaceous vegetation or diving underwater. Usually walk into vegetation if threat is moderate; if threat is immediate, run while holding tail and head straight out and body horizontal. May rapidly jerk conspicuous tail up and down to signal predator that it has been detected.

### **Diet and Nutrition:**

Adult Diet: Clapper Rails are opportunistic and omnivorous, eating whatever's available including crabs, crustaceans, fish, eggs, and plant matter. Fiddler crabs are a favorite item if they can be found. They eat vegetation and seeds more often in the winter than in the summer. Clapper Rails forage while hidden in vegetation, or along the edges between marshes and mudflats. They find prey by sight and possibly by smell, usually grabbing food items from the surface or making shallow probes into the ground. Many prey are swallowed whole, and pellets of indigestible material (such as clam shells) are later regurgitated. Clapper Rails sometimes wash debris from clams before eating.

Juvenile Diet: ^^^^^

Special Adaptations for Getting Prey: CHECK FEATURES

**Reproduction:**

Mode of Reproduction: Monogamous

Mating System: Monogamous, because both sexes are needed to complete incubation.

Mating Season: April to September

Courtship: At least 2 displays given by male are for maintenance of pair bond. First, male lowers tail to horizontal position, extending white undertail coverts and pointing bill toward ground and holding it slightly open, then slowly moving it from side to side. Second, male stretches neck with bill open, approaches female, and pursues her for up to 1 m. Both displays last < 1 min. Courtship-feeding of female by male occurs during egg-laying and incubation.

Territoriality: HOME RANGE

Mating: The female has tail raised and bill pointed downward, while the male has feet resting on the back of the female, bill pointed downward and wings outstretched.

Nesting: Nest site selection involves a compromise between sites at higher elevation (to avoid flooding) with less dense cover, and sites at lower elevation with denser cover and tall grasses, to remain hidden from predators. Nests are placed in clumps of vegetation or in shrubs, from just above ground level to about 4 feet off the ground. Sites with diverse vegetation are preferred. Males do most of the nest building and may continue to add to the nest after the female has started incubating eggs. Nests are bulky platforms of marsh vegetation, and are tall to protect them from tidal flooding and camouflaged to keep them concealed. Nests may have domes to help keep them hidden, and ramps to enable entry and exit in habitats with high or fluctuating water levels. The outside of the nest is 7–14 inches in diameter, with an inside cup 5–6 inches across and 1.5–3 inches deep. Domes are 6–8.5 inches higher than the rim of the nest. The male may add material during periods of high water. Both sexes incubate the eggs—usually the female during the day and the male at night—and raise the young. Pairs may renest up to 5 times after the failure of previous nests.

Egg-Laying: Clutch Size: 2-16 eggs Number of Broods: 1-2 broods Incubation Period: 18-24 days Egg Description: Creamy white to buff, with irregular brown to lilac blotches.

Hatching and Incubation/Gestation: Covered with black down and a pied bill, leave nest within one day. Fed by parents.

Development: Covered with wet, long, black down; bill color pied, ranging from pinkish white with black base to blackish with pinkish white area around nostrils and tip; irides dark brown. Stomach and cloaca rich orange pink or salmon. Eyes open, and emit faint cheeps. Length 75–80 mm. Semiprecocial; incapable of moving from nest for at least 1 h after hatching and brooded by adult for several days

Parental Care: First-hatched chicks are led from nest by one parent while other parent continues incubating newly hatched chicks and remaining eggs. Brooded continually for first few days, on original nest, brood nest, or floating debris. One brood was brooded by both parents for first 7 d in Florida; only 1 chick seen with 1 parent thereafter. Chicks eat fragments of prey broken up by adults; foods do not differ from those eaten by adults. Parental care usually extends until fifth or sixth week after hatching, but brooding may continue until eighth to tenth week.

Lifespan: Up to 7.5 years.

**Conservation:**

Official Federal Status: Least Concern

Special Statutes in Individual States: NONE

Threats: Clapper Rails are abundant but secretive, so it's hard to estimate their population trends with long-term surveys. The North American Breeding Bird Survey suggests numbers declined between 1966 and 2015 (likely due in part to loss of coastal wetland habitat), but there's not enough data to be certain of the trend. Clapper Rails rate a 13 out of 20 on the Continental Concern Score, and the North American Waterbird Conservation Plan lists it as a Species of Moderate Concern. Clapper Rail is not on the 2016 State of North America's Birds' Watch List. Clapper Rails are threatened by habitat development and degradation, and high tides associated with storms. Sand deposition from storms may destroy marsh grasses, and this can affect Clapper Rail populations. Land development that alters vegetation, water levels or salinity can cause local population declines. Toxic materials settle in coastal wetlands, and this might compromise Clapper Rails; the species has served as an indicator for estuary health. They are listed as game birds in all coastal eastern states from Rhode Island to Texas, except New York. It is unclear whether hunting pressure causes declines in populations.

Conservation Efforts: ^^^^^^

**Extra Facts:**

1. Clapper Rails have special salt glands that enable them to drink sea water.
2. Eggs submerged in up to 18 inches of water during high tide are still capable of hatching.

3. After leaving the nest, young are continually brooded by parents until they are about a week old. The parents may use the original nest, construct a temporary brood nest, or use floating debris.
4. Chicks less than two weeks old are carried on the adults' backs during periods of high water or when the birds move across open water.
5. When chicks are about a week old, the parents divide the brood and each look after half the offspring.
6. The oldest recorded Clapper Rail was a male, and at least 7 years, 6 months old when he was shot in New Jersey in 1977. He had been banded in the same state in 1971.

**Notable Species:**

1. *Rallus c. caribbaeus*—Caribbean clapper rail
2. *Rallus c. crepitans*, nominate
3. *Rallus c. grossi*
4. *Rallus c. insularum*
5. *Rallus c. pallidus*
6. *Rallus c. saturatus*—Gulf Coast clapper rail; U.S. Gulf Coasts of southwest Alabama through Texas, and of Tamaulipas (México).
7. *Rallus c. scottii*
8. *Rallus c. waynei*