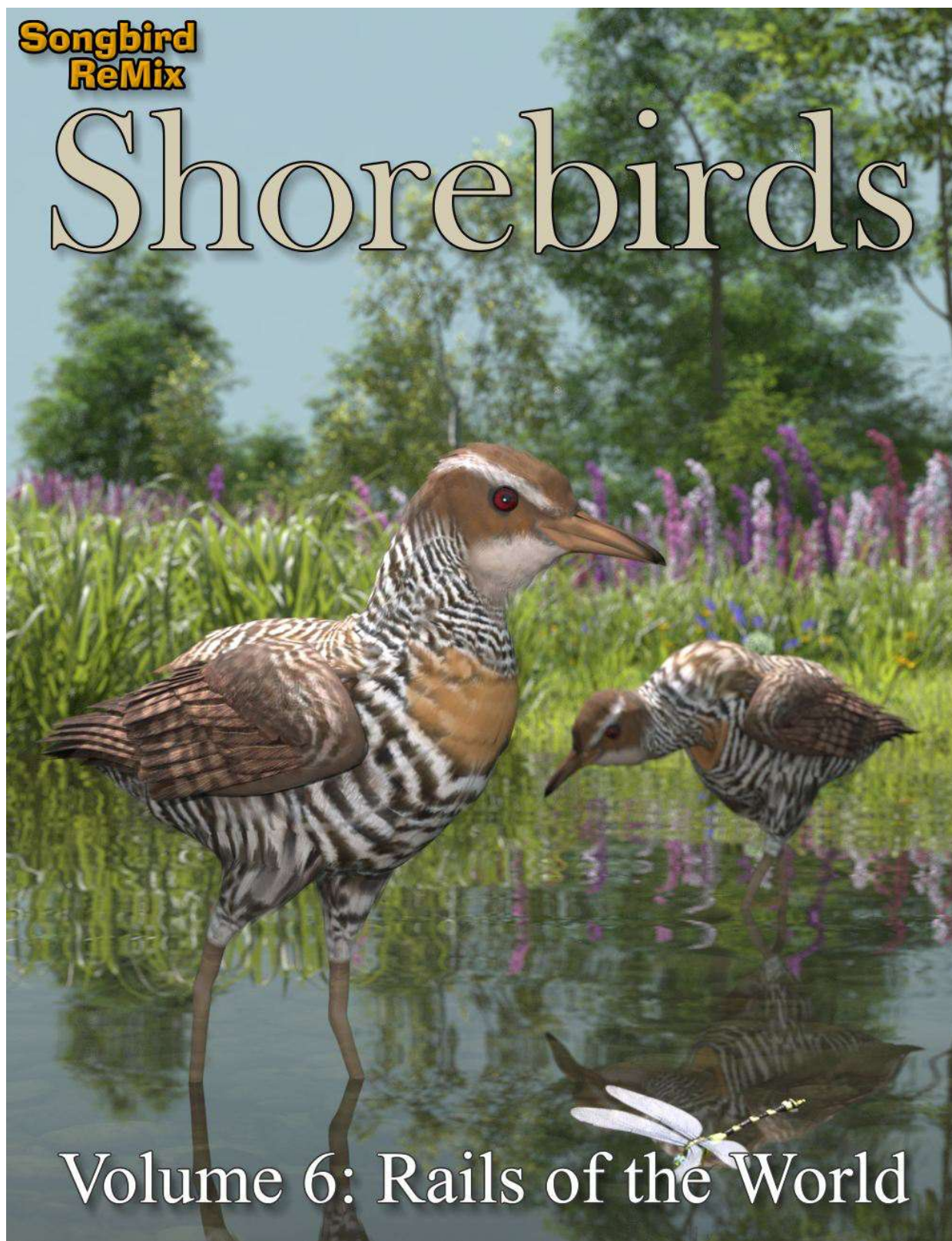


**Songbird
ReMix**

Shorebirds



Volume 6: Rails of the World

Avian Models for 3D Applications

Characters and Procedural Maps by Ken Gilliland

Songbird ReMix Shorebirds

Volume Six: Rails of the World

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Songbird ReMix Shorebirds

Volume Six: Rails of the World

Introduction

Rails (family *Rallidae*) are a large, cosmopolitan family of small- to medium-sized terrestrial or semi-amphibious birds. The family exhibits considerable diversity in its forms, and includes such ubiquitous species as the crakes, coots, and gallinules. Rails are found in every "wet" terrestrial habitat. They are strongly associated with wetland habitats with dense vegetation, usually salt or freshwater marshes. Most species are shy and reclusive. They have suffered disproportionally from human changes to the environment, and the threat of extinction is rampant.

This set has a good variety of rails found throughout the world and features both common and rare species and as well as some of the most visually interesting ones. All birds use the Songbird Remix model technology which has a fully articulated model with the ability to open/fold wings, open/close bill and over 100 other morphs to control behavior of shape of the bird.

There are two versions of this set; DAZ Studio and Poser, and they support Iray, Firefly and Superfly render engines.

Overview and Use

The set is located within the **Animals : Songbird ReMix** folder. Here is where you will find a number of folders, such as **Bird Library**, **Manuals** and **Resources**. Let's look at what is contained in these folders:

- **Bird Library:** This folder holds the actual species and poses for the "premade" birds. Birds are placed into a "type" folder (such as "Birds of Prey (Order Falconiformes)" which for example would hold falcons, hawks and eagles). The birds for this set can be found in the following folder(s):
 - **Cranes, Rails and relatives (Order Gruiformes)**
- **Manuals:** Contains a link to the online manual for the set.
- **Props:** Contains any props that might be included in the set
- **Resources:** Items in this folder are for creating and customizing your birds
 - **Bird Base Models:** This folder has the blank, untextured model(s) used in this set. These models are primarily for

users who wish to experiment with poses or customize their own species of bird. With using physical renderers such as Iray and Superfly, SubD should be turned to at least “3”. For DAZ Studios 3Delight renders, the SubD must be turned from the “High Resolution” setting to the “Base” setting (otherwise some areas will render incorrectly transparent).

Poser Use

Select **Figures** in the **Runtime** Folder and go to the **Animals : Songbird ReMix** folder. Select the bird from the renderer *Firefly or Superfly*) folder you want and simply click it to load. Some birds in the Songbird ReMix series may load with attached parts (*Conformers*) such as tail or crest extensions. Some of these parts have specific morphs. You will need to click on the attached part to access those controls. Associated poses can be found in the same folder- **Bird Library : (Type) : Poses**.

DAZ Studio Use

Go to the **Animals : Songbird ReMix** folder. Select the bird from the renderer (*3Delight or Iray*) folder you want and simply click it to load. Some birds in the Songbird ReMix series may load with attached parts (*Conformers*) such as tail or crest extensions. Some of these parts have specific morphs. You will need to click on the attached part to access those controls. Associated poses can be found in the same folder- **Bird Library : (Type) : Poses**. **Note:** Using the "Apply this Character to the currently selected Figure(s)" option **will not** properly apply the correct scaling to the bird selected. It is better to delete the existing character first and load the one you want to use.

Physical-based Rendering

Iray and **Superfly** requires more CPU and memory horsepower than the legacy renderers because of ray-trace bounces and higher resolution meshes needed for displacement. Poser’s **Superfly** renderer will require that the “Min Transparent Bounces” be set to **at least 16** and that the “Max Transparent Bounces” be set to **at least 32** in render settings. Superfly renders may show artifacts in the head area. This is a known Poser issue and may be addressed in the future. Increasing the SubD may minimize this issue.

Posing Tips

You may find some “Creation Tool” morphs useful in adding realism and variety to your poses. Rails often scrunch and extend their necks. The “Neck Length” morph in “Body Shapes” will allow you to do this. The “Thicker Neck” morph can be useful when the “Neck Length” morph is used to show compression and extension. The “Heavier Frame” morph can give you a look of diversity when grouping the same bird in a scene as well as the “Scale” dial. Remember with almost all Rails, females are about 10-15% smaller than males.

Where to find your birds

Type Folder	Bird Species
Cranes, Rails and relatives (Order <i>Gruiformes</i>)	Yellow Rail Tsingy Forest Rail Ridgeway's Rail Aztec Rail Mangrove Rail King Rail Clapper Rail Virginia Rail Water Rail Brown-cheeked Rail African Rail Snoring Rail Talaud Rail Lord Howe Rail Buff-banded Rail Guam Rail

Where to find your poses

Type Folder	For what species?
Cranes, Rails and relatives (Order <i>Gruiformes</i>)	All Rails

Songbird ReMix Shorebirds

Volume Six: Rails of the World

Field Guide

Yellow Rail
Tsingy Forest Rail
Ridgeway's Rail
Aztec Rail
Mangrove Rail
King Rail
Clapper Rail
Virginia Rail
Water Rail
Brown-cheeked Rail
African Rail
Snoring Rail
Talaud Rail
Lord Howe Rail
Buff-banded Rail
Guam Rail

Common Name: Yellow Rail

Scientific Name: *Coturnicops noveboracensis*

Size: 6-7.5 inches (15-19 cm); wingspan 11-14 inches (28-35 cm)

Habitat: North America; widely distributed in the United States and Canada, chiefly east of the Rocky Mountains. Within the breeding range, however, its presence is quite local.



Breeding birds generally inhabit fresh- and brackish-water marshes, preferring the higher (drier) margins. In autumn this rail is found in varied habitats such as hay fields, grain fields, and wet meadows, as well as in interior and coastal marshlands.

Status: **Endangered.** **Global Population:** 6,700-17,000 adult individuals with a declining population trend. Some individuals are lost to machinery during hay cutting and baling on wintering grounds, and some strike TV towers or other structures during nocturnal migration. Loss of wetlands to human activity is

probably the most serious factor affecting Yellow Rail populations, including the possible extinction of race *goldmani*.

Diet: Small snails, aquatic insects, and seeds.

It forages in areas of shallow water concealed by dense vegetation. It picks its food from the ground, from the surface of vegetation, and sometimes from below (3–4 cm) the surface of water. It usually walks or runs. It walks by placing 1 foot directly in front of the other, leaving a straight line of tracks; long toes are extended on the downstep and flexed when foot is lifted. It only flies when disturbed or migrating.

Nesting: Males are indistinguishable from females in plumage coloration, but the bill of the male becomes corn yellow during breeding season; at other times the bill is dark olive to black, like that of female. Males also are heavier than females, and body measurements are correspondingly larger. They are buff in coloration with a short, pointed bill. The crown is dark brownish black. The upper-parts are deep brown and black with prominent buffy striping. The feathers of the back, scapulars, and tertials have at least two distinctive white bars. The under-parts are buffy brown with the chin and upper throat nearly white. The primaries are pale brown and secondaries largely white, forming a white patch when wing is extended—a distinctive identification feature when this bird is flushed.

It is known to use two nests; one for incubation of eggs and one for brooding of young. Nests for incubation are about 2.5–4.0 cm thick, made of fine sedges and grasses woven into a cup 7–10 cm in diameter and 3–8 cm deep; materials apparently obtained near nest site. Nest covered with concealing canopy of dead vegetation. If canopy is disturbed, female will restore it. Nests for brooding of young have no canopies. The average egg clutch is 8 eggs and incubated for about 18 days.

Newly hatched chicks lie in nest, lifting only their heads and giving peeps for first few hours. Then sit up, supported on tarsi; peep louder and more frequently. Chicks completely black except for bright pink bill; wing-claw present on second digit. At about 18 days of age, Juvenile feathers more predominant than natal down. Pink bill becomes paler, then dark black as Juvenile plumage develops.

Cool Facts: This species also is called the Yellow Crake and Clicker. Two subspecies are recognized,

- *C. n. noveboracensis*. First reported by Gmelin in 1789. The nominate race is found in Canada and the United States
- *C. n. goldmani*. First reported by Nelson in 1904. This race is known only from the state of México, Mexico, and possibly extinct. It is similar to the nominate race, but with white stripes on dorsum; broad and edges to the dorsal feathers are richer brown.

Common Name: Tsingy Forest Rail
Scientific Name: *Mentocrex beankaensis*

Size: 12 inches (30 cm)

Habitat: Africa; endemic to Madagascar, where it is known only from a very limited area of lowlands in the central west of the country, in Beanka and Bemaraha massifs. The distance between the northernmost and southernmost known localities is 125 km, in a corridor rarely exceeding 5 km in width.

Known localities are between 100 and 320 m in areas of limestone karst with rock pinnacles. It occurs in dry deciduous forests, often in canyons or valleys closed or bordered by exposed rock, where it feeds on the forest floor.



Status: Vulnerable. **Global Population:** 2,500 - 9,999 adult individuals with a declining population trend. It is very susceptible to hunting, which may be the greatest threat. Much of the tsingy region is not thought to be vulnerable to human modification; however, limited habitat loss and degradation are thought to be taking place through shifting cultivation, conversion to pasture, wood

harvesting and extraction of other forest resources. These threats are further limited by the low human population density and alleviated by the legal protection of the Tsingy de Bemaraha in a national park and strict nature reserve. However, in 1984 oil prospectors created a seismographic trail through the tsingy by means of explosives, thus facilitating access to areas that were previously impenetrable. Fires are set in the nature reserve in order to stimulate the growth of grass for grazing and to clear trails. Such uncontrolled fires and tree-cutting for house construction, fences and firewood are the primary causes of forest destruction, but Beanka is now a protected area which may reduce this.

Diet: Small snails, aquatic insects, and seeds.

It forages in areas of shallow water concealed by dense vegetation.

Nesting: Its forehead to nape and lores are dark, dull smoke-gray and dark grayish-brown, slightly mottled in appearance, ear-coverts and fore face from beneath the eye to malar area dark cinnamon-rufous. The hind neck and mantle are a light raw umber with olivaceous tinge, becoming amber-colored on the lower back, scapulars and upper-wing coverts, and more rusty-tinged on rump to upper-tail. The remiges are blackish with white bars on the inner webs, plainer and more raw umber on the inner-most secondaries and tertials. Its chin and throat are off-white, bordered by a narrow dark line. The fore-neck down to the breast and upper flanks are dark cinnamon-rufous, its central belly is dark clay-colored with raw umber or olivaceous tinge, the lower flanks and thighs barred or spotted with dark brown, raw umber and light buff. The under-tail coverts are mixed tawny and cinnamon-rufous with dark bars. The under-wing coverts, axillaries and flight-feathers are barred blackish and white. Its iris is reddish-chestnut and the bill light bluish-gray with pale horn or ivory tip, dusky base of the upper mandible. The legs are blackish.

Breeding behavior is unknown.

Cool Facts: Limestone karst with rock pinnacles are known as “*tsingy*”, hence the bird’s name.

Common Name: Ridgeway's Rail
Scientific Name: *Rallus obsoletus*

Size: 12.6-16.1 inches (32–41 cm)

Habitat: North America; found along the western coasts of the United States and Mexico, disjunctly from San Francisco and San Pablo bays, California, south to Baja California Sur and southern Nayarit, Mexico, and westward into Arizona.

Major coastal habitat types include marshes dominated by California Cordgrass (*Sporobolus foliosus*) and a California Pickleweed (*Salicornia*) mix.



Status: Near Threatened. **Global Population:** 10,000 - 19,999 adult individuals with a declining population trend. This species was originally threatened by hunting, but more contemporary threats include development for industry,

agriculture, saltpans and urbanization, leading to a drastic reduction in its habitat. By the late 1980s, about 85% of the species' habitat in the 1850s had been lost, with much of the remaining habitat in a degraded state. Urban development, pollution and introduced predators continue to pose major threats. Population declines in the nominate form were accelerated (numbers dropped by nearly 50% over a nine-year period) when invasive *Spartina* vegetation was removed leading to habitat loss. Changes in agricultural water supply and management of agriculture water runoff may affect habitat availability at the Salton. Sea level rise poses a significant future threat. A recent novel and severe chigger mite infection is also threatening populations of race *yumanensis* in southwestern Arizona where upwards of 92% of some sub-populations are infested with the mite; such infestations may result in population declines of this.

Diet: Crustaceans, if available. It is highly opportunistic; eating small crabs, slugs, minnows, aquatic insects, grasshoppers, small vertebrates, seeds, amphipods, and occasionally immobilized small birds. Freshwater populations on lower Colorado River eat mostly crayfish, clams, isopods, water beetles and small fish. Saltwater populations in the mangroves on West Coast of Sonora and Nayarit (Mexico), eat crabs, marine snails, and insects.

It forages within emergent vegetation or mangroves, or along edges between marsh and mudflats. It regularly ventures onto mudflats and algal mats with gently sloping shorelines at low tide or after wind-driven low tides in the evening. It forages for crabs by searching along central drains of tidal creeks at low tide. It feeds during high tides on prey on grass stalks. In Arizona, it forages at sites with high mean coverage by water, low stem density relative to other sites in the marsh, and moderate water depth (about 7.5 cm)—traits of a newly formed marsh areas.

Nesting: Sexes alike in plumage, but males average 20% larger than females. It is a large, cinnamon-brown rail with slender, slightly decurved bill. The body laterally compressed, with its legs and toes appearing long relative to body size. The base and sides of the bill is brownish orange to bright orange in males, duller in females. Adult coloration is variable (light gray, dark gray, light brown, dark brown, and gray-breasted). Its ventral coloration is uniform, typically cinnamon brown; darker on back. The back-feathers have blackish or dusky centers of varying width. The flanks are marked with alternate white and dusky to dull black bars. Juveniles have a paler bill and their plumage brownish-gray below and darker above, with blackish flanks and sides. The streaking on the flanks and under-tail coverts are indistinct. Hatchlings are downy black and difficult to distinguish from Virginia Rail chicks.

Males begin advertising in February in Arizona; pair formation begins shortly thereafter. Nests are placed to avoid flooding by tides, yet in dense enough cover to be hidden from predators and to support the relatively large nest. Males perform most of the nest building and egg-laying often begins before nest is

completed. The clutch size varies depending on the subspecies. The nominate race averages 8 eggs. Incubation is performed by both sexes and lasts for 23 to 28 days.

Cool Facts: There are six subspecies.

- *R. o. obsoletus*. First reported by Ridgway in 1874. The nominate race is a resident in coastal salt marshes of California from Humboldt Bay south to Monterey Bay, although now extirpated from much of its former range. Its cheeks are brownish. The flanks are blackish with bold white barring. The breast is an ochre-buff with the dorsal feathers edged an olive-gray. It is large compared to the other races.
- *R. o. levipes*. First reported by Bangs in 1899. It is a resident in coastal salt marshes from Santa Barbara, California, south to at least Estero de Punta Banda, Baja California. It is similar to the nominate race, but its breast is pinkish cinnamon, the dorsum is darker, and its body size averages smaller.
- *R. o. beldingi*. First reported by Ridgway in 1882. It is found in coastal salt marshes and mangroves on both coasts of the Baja California peninsula, from San Quintín southward on the Pacific Coast and Isla Espíritu Santo on the Gulf Coast. It is similar to Race *levipes*, but its breast is rich hazel and the dorsum paler.
- *R. o. yumanensis*. First reported by Dickey in 1923. It is a resident in freshwater, brackish, and salt marshes, both inland and coastal, from southeastern California and southwestern Arizona (Salton Sea and lower Colorado River valley) south through northeastern Baja California and northwestern Sonora to the Colorado River delta. It is similar to Race *levipes*, but its cheeks ashy gray and dorsal feathers paler brown and edged grayish. Its wing are most pointed than other subspecies.
- *R. o. rhizophorae*. First reported by Dickey in 1930. This race is a resident in coastal salt marshes in northwestern Mexico from central Sonora south to central Sinaloa. It is like Race *yumanensis*, but is pale gray overall and its wing is rounded.
- *R. o. nayaritensis*. First reported by McLellan in 1927. The subspecies is a resident in coastal salt marshes and mangroves in western Mexico from central Sinaloa to southern Nayarit. It is like Race *rhizophorae*, but is dark gray overall.

Common Name: Aztec Rail
Scientific Name: *Rallus tenuirostris*

Size: 13-16.5 inches (33–42 cm)

Habitat: North America; it is found in highland freshwater marshes in central Mexico, from southern Nayarit, Jalisco, Guanajuato and southern San Luis Potosí, south to Guerrero, Morelos and Puebla.



It is restricted to highland freshwater marshes, and has been recorded at 800-2,500 m at least. The species has also been recorded in smaller seasonal areas of marsh, probably through dispersal from permanent wetlands in the rainy season.

Status: Near Threatened. **Global Population:** 15,000 adult individuals with a declining population trend. Permanent wetlands in central Mexico are reported to

be in a degraded condition and the total area of habitat available to this species becomes very limited towards the end of the typical dry season. Furthermore, these habitats have been reported as under threat from increasing agricultural, industrial and urban development. It is apparently tolerant of nearby humans.

Diet: Crustaceans, especially crayfish, as well as mollusks, aquatic and terrestrial insects (mostly in the rainy season), and likely some spiders, fish, and amphibians.

It usually forages in areas with dense plant cover, shallow waters, or around marsh borders.

Nesting: Sexes have similar plumage coloration but males are larger. The upper-parts are clay brown with broad dark brown central streaks. The face is dark with a variable pale whitish or orange-rufous washed supercilium and chin and throat. The under-parts are bright rufous, with the flanks barred dark brown with narrow whitish edges, and the undertail coverts are plain whitish. The orange bill is medium length with a dusky culmen and tip. The legs are rufous and brownish. Juveniles are duller and darker in upper-parts than adult, while being paler with a whitish, pinkish-cinnamon wash below.

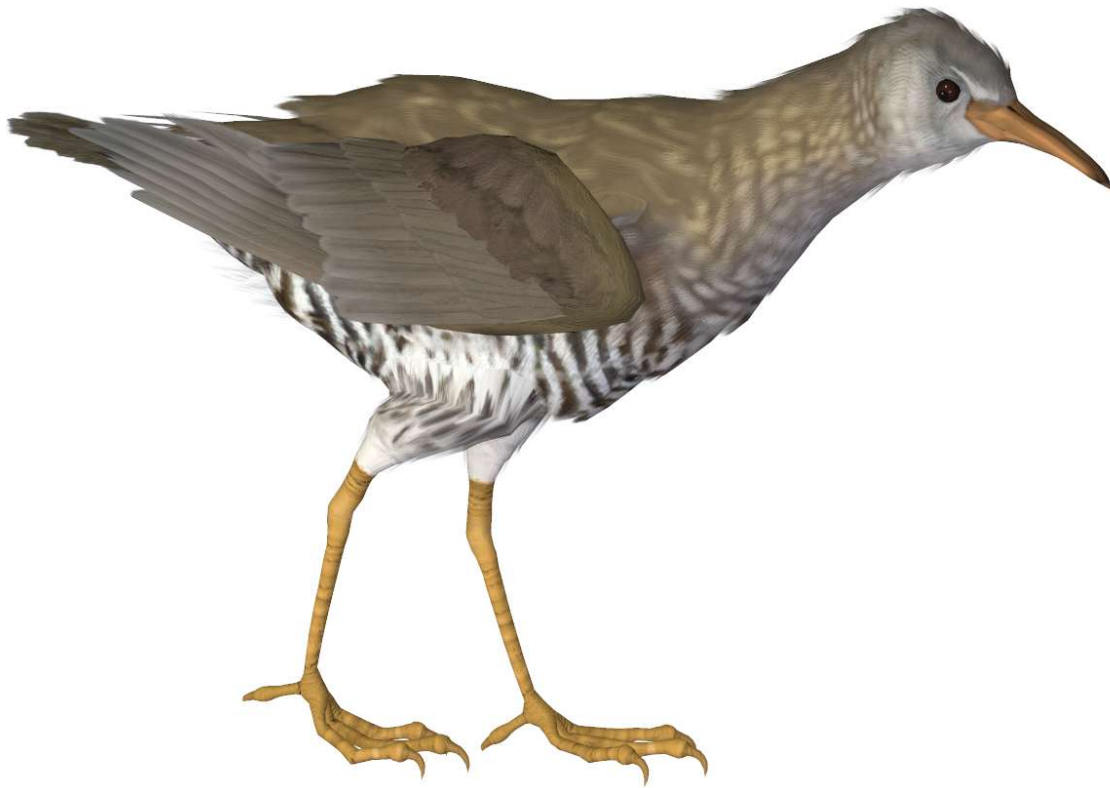
Breeding season begins in May and continues into July but can extend from April to August. Nests are constructed in wet pastures, often within shallow seasonal wetlands. One nest was located in a stand of spikerush (*Eleocharis* sp.) about 45–60 cm tall. The clutch size is usually about 5 eggs. Like other rails, chicks are semiprecocial. Due to the rapid development of the chicks and extended breeding season, the juvenile plumage of grown young has been recorded as early as July and as late as September.

Cool Facts: It is also known as the Mexican Rail. It is heard more frequently than seen. Vocalizations closely resemble those of the King Rail (*Rallus elegans*), Clapper Rail (*Rallus crepitans*), and Ridgway's Rail (*Rallus obsoletus*).

Common Name: Mangrove Rail
Scientific Name: *Rallus longirostris*

Size: 13 inches (33 cm)

Habitat: South America; this species has a discontinuous distribution. There is population, only recently discovered, on the Pacific coast of Central America (El Salvador to northwestern Costa Rica); another population occurs on the Pacific coast of South America, from southern Colombia to extreme northwestern Peru; and it occurs along the Atlantic Coast of South America, from northeastern Colombia to eastern Brazil, south to Santa Catarina.



Status: Least Concern. **Global Population:** 50,000 - 500,000 adult individuals with a declining population trend. The overall population trend for this species, based on the Waterbird Populations Portal, is considered to be fluctuating. However, as its wetland habitats are being lost and degraded, the global population is considered to be decreasing.

Diet: Mollusks, leeches, crustaceans (including crayfish and many crabs), aquatic insects (especially dytiscid beetles), grasshoppers, spiders, small fish, frogs and tadpoles, and mice; also seeds, berries, green plant material and

tubers of woody plants. It feeds opportunistically (eats more vegetable matter in winter).

It hunts by sight; probes exposed and shallowly flooded mud and sand. It takes crabs from burrows by probing, sometimes inserting its head and neck into burrow. It gleans items from the substrate, throwing aside surface litter with its bill and seizes small invertebrates hiding under it. It catches fish while wading, swimming and sometimes diving. It will scavenge dead fish and forages at grassy edges of mangroves. It forages mostly on substrates adjacent to cover and is most active at low tide, and during morning and early evening.

Nesting: Sexes are similar. It is a large rail with long, slender, slightly decurved bill. The nominate race is dull grey-brown above, upper-parts with darker feather centers, white loreal streak contrasting with pale gray face. The throat is whitish, the foreneck and breast is tawny-buff, the flanks are conspicuously barred black and white. The center of the belly is whitish. The iris is reddish-brown and the bill is brownish above and orange-yellow below. The legs light are orange-red. The juvenile is like adult, but darker and duller.

The nest of Mangrove Rail is made of twigs and is placed, appropriately enough, among mangrove roots, very close to the water. The clutch is 3–7 pale buffish eggs with dark purplish spots and blotches. Incubation is performed by both sexes and lasts 18–29 days.

Cool Facts: The populations that make up Mangrove Rail formerly were classified as subspecies of Clapper Rail (*Rallus crepitans*), but a phylogenetic analysis of all populations of the Clapper/King (*Rallus elegans*) rail complex revealed that Mangrove and Clapper Rails are separate species.

There are 8 subspecies:

- *R. l. berryorum*. This race is found along the Pacific coast of eastern El Salvador, Honduras, and northern Nicaragua; a population in northwestern Costa Rica presumably also refers to this subspecies.
- *R. l. cypereti*. This race is found along the coasts from extreme southwestern Colombia (Nariño) through Ecuador to extreme northwestern Peru (Tumbes). It has feather edgings above that is paler than the nominate race. It has dark bars on the flanks and is also paler.
- *R. l. phelpsi*. It is found on the extreme northeastern coastal Colombia and extreme northwestern Venezuela. It is rather pale, like the nominate but darker on the crown and upper-parts; it is also brighter below.
- *R. l. dillonripleyi*. This race is found along the coast of northeastern Venezuela (Sucre)

- *R. l. margaritae*. Endemic to Margarita Island (off northern Venezuela). It is the darkest race, with bolder barring on flanks, also it is smaller.
- *R. l. pelodramus*. This race is endemic to Trinidad. It is as small as race *margaritae*, but paler.
- *R. l. longirostris*. The nominate race is found on the coasts of Guyana, Suriname and French Guiana.
- *R. l. crassirostris*. This race is found in coastal Brazil from Amazon estuary to Santa Catarina. It resembles the nominate, but darker on the head and upper-parts. It is darker and more cinnamon below, with bill shorter, stout and more reddish.

Common Name: King Rail
Scientific Name: *Rallus elegans*

Size: 15.5–19 inches (39-48 cm)

Habitat: North America; This bird breeds in marshes in eastern North America. Birds along the southeastern coasts of the United States are permanent residents. Other birds migrate to the southern United States and Mexico; in Canada, they are found in southern Ontario. An adult king rail will molt completely after nesting and it becomes flightless for almost a month.

Status: Near Threatened. **Global Population:** 69,000 adult individuals with a declining population trend. Despite this broad geographic range, King Rail populations have declined alarmingly in the past 50 years with the species now listed as threatened or endangered in 12 eastern and Midwestern states, as well as in Canada. In response to these declines, research has shown that populations in the Upper Mississippi and Illinois River valleys, as well as the Midwestern U.S., are particularly scarce. These population declines likely related to the direct loss of wetlands, but evidence also indicates that King Rails are sensitive to broad-scale changes in hydrological regimes, such as the



impoundment or stabilization of water levels, that have a profound influence on wetland vegetation.

Diet: Mainly aquatic insects and crustaceans.

It forages by probing the mud while moving around in shallow water.

Nesting: Sexes are roughly similar in plumage, but male is larger and averages deeper orange on breast while female averages drabber overall. It is a large rusty rail with a slender bill that is longer than the head and slightly decurved. The body is laterally compressed and the toes are long. The upper-parts are olive brown, the breast is rufescent orange, and the flanks are barred with black and white. Its tail is short and often uplifted. The back of the neck has diffuse dark brown and pale orange stripes that give way to a well-streaked back—black centers to scapulars with pale orange-buff edges. In juveniles, the iris is brownish to dull orange through the first winter; adults have an orange to reddish-orange iris, the pupils grayish black.

The nest is a raised platform built with marsh vegetation and covered by a canopy. This is to hide the eggs of this bird from predators that are searching from above. The king rail interbreeds with the clapper rail (*Rallus crepitans*) where their ranges overlap; It can be argued that these two birds belong to the same species according to the biological species concept. The king rail lays a clutch of 6 to 14 pale buff eggs with brown spotting. Both parents incubate the eggs for 21 to 23 days. When the eggs hatch, the young are covered in down and are able to leave the nest. They are not able to feed themselves, though, and thus must rely on their parents for food for up to six weeks after they hatch.

Cool Facts: King rails Vs. Clapper rails... both species are very similar but King rails prefer freshwater marshes while Clapper rails are more at home in saltwater marshes. King rails are also brighter in color, more cinnamon, and have more defined barring on their rumps. King rails and Clapper rails have been known to interbreed and their offspring are referred to as “Cling Rails”.

Vernacular names for the King Rail include marsh hen, mud hen, and rice chicken. At least two subspecies of King Rail are now recognized:

- *R. e. elegans*. First reported by Audubon in 1835. The nominate race is found along the southern and eastern coast of North America.
- *R. e. ramsdeni*. First reported by Riley in 1913. This race is endemic to Cuba. Like the pale morph of the nominate, but smaller and with the ventrum more extensively white and auriculars grayer.

Common Name: Clapper Rail
Scientific Name: *Rallus crepitans*

Size: 13-16 inches (32-41 cm)

Habitat: North America; found along the Atlantic coasts of the eastern United States, the Gulf of Mexico, eastern Mexico, some Caribbean islands, and south through eastern Central America, as well at several inland locales.

Clapper rails are saltmarsh specialists, and are highly mobile across their range.

Status: Least Concern. **Global Population:** Unknown number of adult individuals with a declining population trend. Populations are relatively stable on the East Coast of the United States, although the numbers of this bird have declined due to habitat loss.

Diet: Crustaceans, aquatic insects, and small fish.



They search for food while walking, sometimes probing with their long bills, in shallow water or mud.

Nesting: The clapper rail is a chicken-sized bird that rarely flies. It is grayish brown with a pale chestnut breast. Males and females have similar plumage. The

bill which curves slightly downwards is orange yellow at the base in males and duller in females.

The nest is a large platform of dry grasses and is usually placed on the ground in dense vegetation. The clutch size varies between four and sixteen eggs with an average of nine. The eggs are incubated for 20 days by both parents with the male incubating at night. The young are brooded by the adults for several days. They become independent of the adults when six weeks old and can fly when 10 weeks old.

Cool Facts: The taxonomy for this species is confusing and still being determined. The clapper rail was formerly treated as a subspecies of the mangrove rail (*Rallus longirostris*). The decision to treat the clapper rail as a separate species was based on the results of a molecular phylogenetic study that was published in 2013.

Eight subspecies of the clapper rail are recognized. There is considerable variation in plumage color within subspecies; described as color phases or morphs; not related to age, sex, or adventitious coloring. Five color morphs are light gray, dark gray, light brown, dark brown, and gray-breasted (upper-parts like dark brown morph). Possible other explanations for color morphs include different hormonal levels in different birds, hybridization with King Rail, or previously undescribed variations in plumage progression due to wearing of feather fringes. Clarification of color morphs and their significance will depend on detailed study of birds of different age, sex, season, and genetic background.

- *R. c. crepitans*. First reported by Gmelin in 1789. The nominate race is found along coastal Connecticut to northeast North Carolina in the United States.
- *R. c. waynei*. First reported by Brewster in 1899. It is found along coastal southeast United States.
- *R. c. saturatus*. First reported by Ridgway in 1880. It is a resident of the Gulf Coast from southwest Alabama to northeast Mexico
- *R. c. scottii*. First reported by Sennett in 1888. It is endemic to coastal Florida in the United States.
- *R. c. insularum*. First reported by Brooks in 1920. It is found along the Florida Keys in the United States.
- *R. c. coryi*. First reported by Maynard in 1887. It is endemic to the Bahamas.
- *R. c. caribaeus*. First reported by Ridgway in 1880. It is found from Cuba to Puerto Rico, Lesser Antilles to Antigua and Guadeloupe.

- *R. c. pallidus*. First reported by Nelson in 1905. It is a resident of the north Yucatán Peninsula, islands off Quintana Roo (southeast Mexico), Ycacos Lagoon (Belize).

Common Name: Virginia Rail
Scientific Name: *Rallus limicola*

Size: 8.7-10.6 inches (22-27 cm)

Habitat: North America; it breeds locally in North America from southern British Columbia, southeastern Alberta, central Saskatchewan, central Manitoba, southwestern Ontario, northeastern Minnesota, southeastern Ontario, southern Quebec, New Brunswick, Prince Edward Island, and Nova Scotia south to northern Baja California (at least formerly), southern Arizona, central New Mexico, Kansas, northern Iowa, northern Illinois, northern Indiana, northern Ohio, southern Pennsylvania, eastern Virginia, and coastal North Carolina; very locally in northern and southeastern Texas, Oklahoma, central Louisiana, and northern Alabama and casually in other southeastern states. It is a resident in central Mexico (Puebla, Tlaxcala, and México and from central Chiapas to central Guatemala; probably also central Veracruz and Oaxaca).

Its non-breeding range includes the East, West, and Gulf coasts, with large interior populations. From southwestern British Columbia south through southern Baja Peninsula and central Mexico (recorded south to Jalisco and Veracruz). Along the Gulf Coast and coastal New England south locally through southern Florida, rarely in Cuba, and in interior North America north to Montana, Colorado, Wyoming, Nebraska, Illinois, Michigan, and southern Ontario.

It breeds predominantly in freshwater wetlands, but nests have been reported in salt marshes. Shallow water, emergent cover,



and substrate with high invertebrate abundance are thought to be the most important features of Virginia Rail habitat.

Status: Least Concern. **Global Population:** 100,000 - 499,999 adult individuals with a stable population trend. The species' population in North America (United States and Canada) is estimated to have increased over the long term, but shown a slightly negative recent annual trend. However, there is an increasing trend is estimated for Canada. Wetland loss has caused population declines, but the species is now considered relatively stable.

Diet: Includes slugs, snails, small fish, insect larvae, aquatic invertebrates, caterpillars, beetles, flies, earthworms, amphipods (*Gammarus* spp.), crayfish, frogs, and small snakes. Mainly adult insects, insect larvae, worms, other invertebrates. Beetles, snails, spiders, true bugs, and diptera larvae are the items taken most frequently; also eats various crustaceans, dragonfly and damselfly nymphs, ants and other Hymenoptera, grasshoppers and crickets, bryozoans, and small fish. It also will eat a variety of aquatic plants and seeds of emergent plants. During the non-breeding season its diet consists of invertebrates, a variety of aquatic plants, and seeds of emergent plants. Seeds of marsh plants (wild rice, bulrush, spikerush, sedge, buttonbush, cyperus, pondweed, cowliily, smartweed, cordgrass, marestalk, burreed).

A habitat generalist, this species probes mudflats and shallow water with its long, slightly decurved bill searching for invertebrates, small fish, and the occasional seed. The Virginia Rail is agile on its feet and most often escapes danger by running, but it may also dive and swim, using its wings to propel itself underwater.

Nesting: Females smaller than males, but this is not noticeable in the field. It is a small, laterally compressed, reddish rail with gray cheeks and a long, slightly decurved bill. The wings are chestnut colored. Its legs and bill are reddish and its flanks are banded black and white.

Courtship starts around May. The male will raise his wings and run back and forth next to the female. Both sexes bow, and the male feeds the female. Before copulation, the male approaches the female while grunting. Virginia rails are monogamous. Both parents build the nest and care for the young, whereas only the male defends the territory. The nest is built as the first egg is laid and consists of a basket of woven vegetation. The nest is made using plants like cattails, reeds and grasses. They also build dummy nests around the marsh. They nest near the base of emergent vegetation in areas with vegetation creating a canopy above the nest.

This bird lays a clutch of 4 to 13 white or buff eggs with sparse gray or brown spotting. They are incubated by both parents for a period of 20 to 22 days, in which the parents continue to add nesting material to conceal the nest. They can carry eggs in their bill to move the clutch to an alternate nest. Chicks hatch

precocial, and can walk almost immediately and swim once dry. After hatching, the chicks are brooded by their parents for their first four to seven days, at which time they become capable of foraging for themselves. They leave their nest within three to four days of hatching, but their parents continue to defend them after this. The young may become independent when they learn to fly, which occurs at 4–7 weeks of age.

Cool Facts: The Virginia Rail is a secretive freshwater marsh bird that is more often heard than seen.

Two subspecies are recognized:

- *R. I. friedmanni*. First reported by Dickerman in 1966. It is endemic to the volcanic belt of central-southern Mexico and extreme southern Mexico to central Guatemala. The coloration is described as being similar to that of the nominate race but paler, less richly colored; dorsally, with paler and more olivaceous edges to the interscapulars and tertials; ventrally, more pinkish, less cinnamon. The rufous wing bend of the wing averages paler.
- *R. I. limicola*. First reported by Vieillot in 1819. The nominate race is found in southern Canada and west, central and the northeast United States. It winters from southwest Canada and eastern Great Lakes through the southern United States to Mexico.

Common Name: Water Rail
Scientific Name: *Rallus aquaticus*

Size: 9.8-11 inches (25-28 cm)

Habitat: Eurasia and Africa; breeds in well-vegetated wetlands across Europe, Asia and North Africa. Northern and eastern populations are migratory, but this species is a permanent resident in the warmer parts of its breeding range.

It occupies almost any type of dense riparian and aquatic vegetation at still or slow-moving water. It usually requires muddy ground for foraging. The breeding habitat includes reedbeds and other emergent vegetation of swamps, marshes and fens, and at fringes of open water. It also occurs on floating islands, rice paddies, lotus ponds and at both fresh and saline lakes and marshes.



Status: Least Concern. **Global Population:** 628,000 - 1,300,000 adult individuals with a declining population trend. The species is vulnerable to severe conditions (such as ice or severe floods). In some areas it suffers from habitat destruction through land reclamation and wetland drainage.

Diet: Worms, leeches, mollusks, shrimps, crayfish, spiders, many terrestrial and aquatic insects and their larva, small vertebrates (killed or as carrion) including amphibians, fish, birds and mammals. Plant foods include shoots, roots, seeds, berries and fruits. It eats more plant material in autumn and winter.

It forages on dry ground or mud near water. It also wades in shallow water, taking items on and below surface, and from emergent vegetation. Sometimes, it will feed while swimming, but rarely by diving. It leaps up to take insects from vegetation and climbs in vegetation to take berries. It will fly into apple trees to remove fruit.

Nesting: The female is smaller, with a shorter bill. In about 60% of nominate race individuals, the variable number of greater and median upper-wing-coverts have white bars, black-bordered or on black feathers. The white markings may also occur on alula, primary-coverts and even remiges, while some have white speckles on the mantle, back or rump. The under-tail-coverts usually appear white but may have variable amounts of buff, and sometimes show black barring. The iris is red. The bill is orange-red, the culmen and tip are reddish black. The legs are flesh-brown, often tinged reddish or green. The juvenile may have duller upper-parts, as well as gray on the head and under-parts replaced by buff or white with brown to black bars and feather tips. The flanks are buff with dark brown to black bars. The under-tail-coverts often appear entirely buff and the bare parts dull.

It is monogamous and highly territorial when breeding. Two broods are normal. In western and central Europe breeding season occurs late March through August; in Morocco and Algeria, May–June; Tunisia, June; Egypt, April–June; former USSR, May; Kashmir, June–August. The nest is a cup of dead leaves and plant stems; usually in thick vegetation of reeds or rushes on ground near or in water. It is rarely on a tree stump or in open. Both sexes build the nest. Usually 6–11 eggs are laid at daily intervals; replacements may be laid after egg loss. The incubation period lasts 19–22 days and is performed by both sexes.

Cool Facts: There are three subspecies:

- *R. a. hibernans*. It is endemic to Iceland (possibly extinct). It is paler than the nominate on the under-parts.
- *R. a. aquaticus*. The nominate race is found in Europe, northern coastal Africa and western Asia to the upper basin of the Ob River. It winters south to northern Africa and eastward to the Caspian Sea.
- *R. a. korejewi*. This race is found in the Aral Sea and Lake Balkhash southward to Iran, Kashmir and west-central China. It winters patchily from Iraq to central China and possibly to coastal eastern China. It is paler than the nominate on the under-parts and upper-parts.

Common Name: Brown-cheeked Rail
Scientific Name: *Rallus indicus*

Size: 9-11.4 inches (23-29 cm)

Habitat: Asia; found in northern Mongolia and eastern Siberia (upper Yenisey River area and middle Lena River) to Manchuria, Sakhalin and northern Japan. It winters from eastern Bengal and Assam, Myanmar, northern Thailand and northern Laos eastward to southeastern China and Hainan, Taiwan, Korea and southern Japan.

It inhabits mainly freshwater marshes, swamps and wet fields. On Japanese offshore islands, it is found among grasses and stands of dwarf bamboo.



Status: Least Concern. **Global Population:** Unknown number of adult individuals with a declining population trend. It has reasonably large range,

though in many parts of which, its status is unclear. It appears to be uncommon throughout Japan. It was formerly regarded “locally common”.

Diet: Small insects, mollusks, worms and the like, supplemented by vegetable matter (seeds).

Nesting: Sexes are alike. It has a broad brown eyestripe, a white preocular superciliary stripe with markedly darker brown crown. It has extensive white on the throat, pale gray under-parts with brown tinge (especially on breast), and bold black bars on under-tail-coverts. The juvenile is duller than the adult.

Egg laying occurs from April to May. The nest is a cup made from dead leaves and stems of marsh plants. It is well concealed on ground, near or in water, in thick vegetation of reeds or rushes, often with canopy consisting of surrounding vegetation. The clutch is generally 5–12 eggs.

Cool Facts: It is also known as the Eastern Water Rail.

Common Name: African Rail
Scientific Name: *Rallus caerulescens*

Size: 10.6-11 inches (27-28 cm)

Habitat: Africa; Sub-Saharan Africa, principally from Ethiopia, South Sudan and Uganda to eastern Democratic Republic of the Congo and Kenya and southward to Cape of Good Hope. Its status is uncertain in western Africa, where recorded in Gambia, Sierra Leone, Cameroon, Central African Republic, northeastern Gabon and Congo, but apparently rare and erratic. There has been reported occurrences in coastal Kenya but they require confirmation.



It prefers reedbeds and dense rank growth in permanent and temporary swamps and marshes, and beside lakes, pools, rivers and streams. It tolerates brackish conditions. In breeding season, it moves out into seasonally inundated dense hygrophilous grassland and sedge meadow adjoining permanent cover, and occupies seasonally wet sugar cane adjacent to marshes. In western Africa also

in paddy fields. In Sudan, it is found in thick secondary growth along rivers. It prefers shallowly flooded areas with mud and/or floating vegetation for foraging. Recorded from sea-level to 3000m, but occurrence at low altitude and in coastal areas mainly confined to regions S of 20° S.

Status: Least Concern. **Global Population:** Unknown number of adult individuals with a declining population trend. Habitat destruction is a threat.

Diet: Worms, crabs, spiders, aquatic and terrestrial insects (and their larvae), small fish and small frogs; also, some vegetable matter, including seeds; occasionally carrion (crayfish, crabs, small mammals).

It forages mainly on moist to shallowly flooded ground, sometimes on dry ground. It probes mud, clumps of wet grass and mats of floating vegetation. While wading takes food from water surface and also by immersing head and neck. It takes prey from low vegetation. It climbs readily in tall reedbed vegetation to forage. It feeds both within and outside cover and is most active in early morning and late afternoon.

Nesting: Sexes similar but the female is smaller. It is unpatterned; deep vinous brown upper-parts are unique character within genus. Its face to breast may be grayer, less slaty blue, with some pale markings. It may have a little brown on the sides of the neck and breast and less regular barring on the flanks. Immature are similar to adults but duller. The chin and throat are white; the sides of the neck and breast are brown. The flanks are brownish black barred rufous buff to white. The outer under-tail-coverts tipped rufous buff. The eye, bill, legs and feet are brown, becoming redder with age. Juveniles have darker upper-parts; the face, sides of the neck and breast are dark brown. The breast is brown, mottled pale, the flanks to under-tail-coverts are blackish brown, barred rufous. The center of the breast and belly are buff. The eyes are brown. The bill, legs and feet are dark brown.

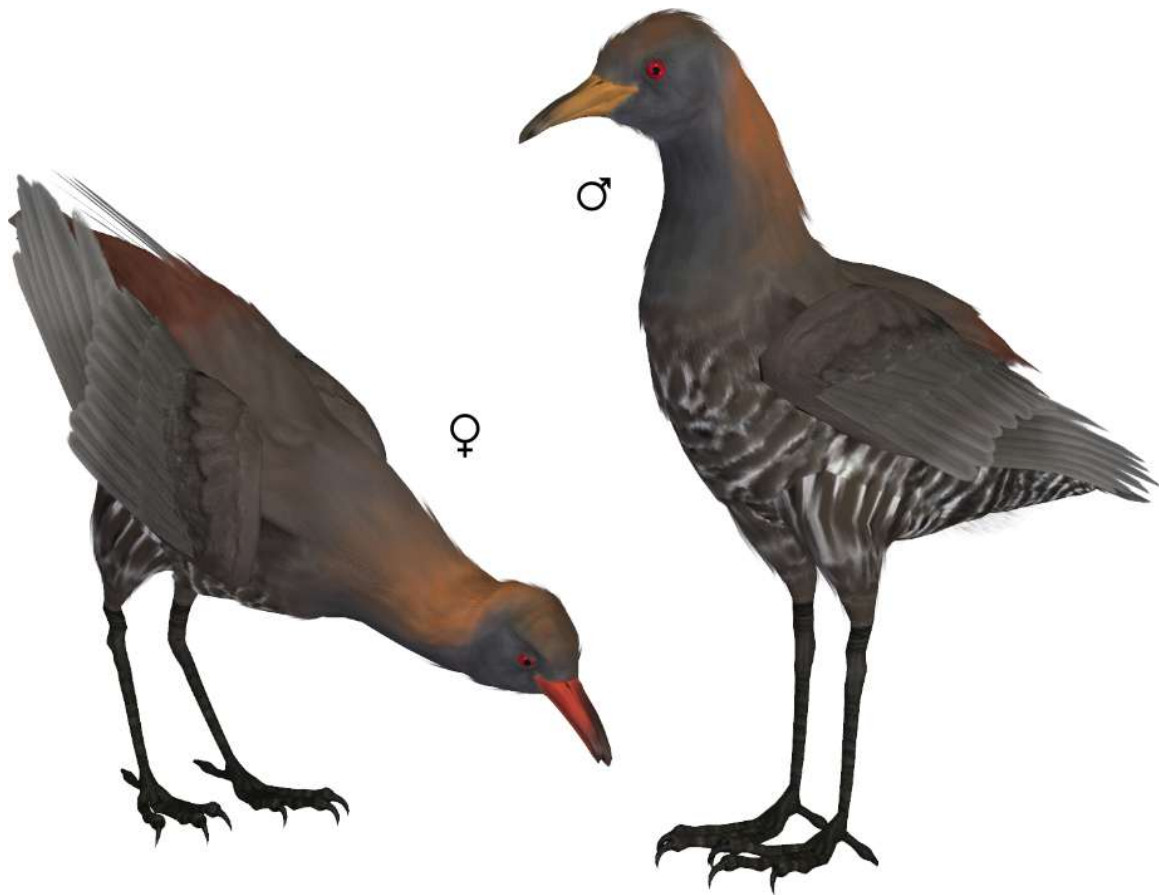
Breeding season in Ethiopia occurs August; in southwestern Zaire, “dry season”; Kenya, May–June; Malawi, February–March; Zambia, January, breeding condition May; Zimbabwe, January–May; Mozambique, January; South Africa, July–March, in suitable habitat winter breeding possibly occurring more frequently than is known. It is monogamous and strongly territorial when breeding. The nest is a shallow cup of aquatic plants (reeds, sedges, rushes); well concealed in aquatic vegetation, usually over water. Both sexes build the nest and the clutch is 2–6 eggs. The incubation period lasts about 20 days, and is performed by both sexes. Chicks leave the nest soon after hatching.

Cool Facts: Territorial calls are mainly heard during the breeding season. Birds are mainly vocal during early morning and at dusk, but may also be heard at other times of the day. Only occasionally does it vocalizes at night.

Common Name: Snoring Rail
Scientific Name: *Aramidopsis plateni*

Size: 11.8 inches (30 cm)

Habitat: Asia; endemic to Sulawesi (Indonesia) where it is known from the lowlands and hills in north, central and south-eastern parts of the island.



This flightless rail inhabits tropical, lowland evergreen and lower montane rainforest, especially densely vegetated, forest-edge habitats or thick understoreys of primary forest, from sea-level to 1,300 m. Streams, damp gullies and thick secondary growth (in places dominated by rattans, lianas and bamboo) appear to be important habitat features. This species has been protected under Indonesian law since 1972. It is known to occur in some protected areas (e.g. Lore Lindu National Park).

Status: Vulnerable. **Global Population:** 3,500–15,000 adult individuals with a declining population trend. Its numbers are thought to be decreasing, and its restricted range and small population mean that the species is classified as Vulnerable. It may always have been thinly spread, but there has been widespread deforestation within its range resulting in loss and fragmentation of

suitable habitat. The rail has been protected under Indonesian law since 1972, and the large Lore Lindu and Bogani Nani Wartabone National Parks are within its range, but logging and rattan cutting occurs even in these protected areas, and human encroachment is also a problem at Lore Lindu. The rail has been trapped for food in the past, and is sometimes killed by dogs, cats and other introduced predators.

Diet: Possibly largely crabs; lizards also recorded. Captive bird survived on crabs for some time.

It forages for crabs in mountain streams and has also been seen foraging in a shallow muddy gulley.

Nesting: Sexes are similar but the female has a brighter rufous hindneck and often less white on its chin. Also, the base of the bill and iris are reddish (yellowish in male). The rail has grey underparts, a white chin, brown wings and a rufous patch on the hind-neck. It has heavy legs and feet. It appears tailless in the field, with slightly downcurved bill.

There are no studies on its breeding habits.

Cool Facts: The typical call is the 'ee-orrrr' sound that gives the bird its common name.

It is locally distributed, rare and elusive. It is known from 11 specimens, all but one collected before 1940, from 4 sightings between 1983 and 1992 and a handful since then. Its secretive habits of this species make assessment of its status very difficult.

Common Name: Talaud Rail

Scientific Name: *Gymnocrex talaudensis*

Size: 13–14 inches (33-35 cm)

Habitat: Asia; endemic to the Talaud Islands of Indonesia.

The species is known from damp areas within primary and secondary forest and in swampy grasslands immediately adjacent to forests.



Status: **Endangered.** **Global Population:** 500-2,500 adult individuals with a declining population trend. The species depends on primary forest habitat, and ongoing forest cover loss from smallholder agricultural encroachment, commercial plantations, and commercial logging is likely the primary threat. Even if the species' wetland/grassland habitat is not directly lost from land-use change, the loss of bordering forests and encroaching settlements are likely to increase the species' exposure to subsistence hunting. The introduced Ricefield Rat may also threaten the species by feeding on its eggs.

Diet: Worms, crabs, spiders, aquatic and terrestrial insects (and their larvae), small fish and small frogs; also, some vegetable matter, including seeds; occasionally carrion (crayfish, crabs, small mammals).

Nesting: Sexes are similar. It is a robust rail. Its head, neck and breast are maroon-chestnut in color. It is glossier on its mantle, brownish on the rump, blackish on rearmost upper-parts. The upper-wing is similar to rest of upper-parts, the primaries are partially grayer. The chin and area around the gape are dark gray. Its under parts are mostly blackish with some pale brown admixed, and olive-green flanks. The under-wing-coverts blackish, feathers broadly tipped white. Its iris is bright red, contrasting pink bare orbital ring becoming a conspicuous silvery-white patch behind the eye. Its bill is yellowish, grayer on longitudinal line across nostril and on distal third, with an off-white tip. The legs and feet are dull pink to yellow (possibly some variation related to breeding condition).

There are no studies on breeding habitats.

Cool Facts: A call of 15 fast and high pitched "'peet-peet-peet" sound is may come from this bird. A deep "ump-ump-ump" call are said by local people also to come from the Talaud rail.

Common Name: Lord Howe Rail

Scientific Name: *Gallirallus sylvestris*

Size: 13.4-16.5 inches (34-42 cm)

Habitat: Oceania; endemic to Lord Howe Island.

A resident of the subtropical forest. Before human settlement, it probably occurred over most of island at low to high altitudes, but subsequently restricted to highest parts of mountains, up to 825 m, in gnarled moss-forest (not a preferred habitat) dominated by *Bubbia*, *Dracophyllum*, *Negria*, *Leptospermum* and palms, with understorey of tree-ferns and litter-covered floor. Now, it has



been re-established in some lowland forest areas, where it inhabits closed megaphyllous broad sclerophyll forests, particularly stands of palm *Howea forsteriana* on igneous soils, and also *Ficus*, *Drypetes* and *Cryptocarya*. It occurs in forest bordering pasture and gardens, and such open areas may be included in territories. It rarely occurs in the rain forest, the most widespread vegetation on the island, possibly because there is less food available near soil surface. It

occurs on boulder-covered slopes, steep scree, in valleys, on plateaux, often near cliffs and sometimes near the coast.

Status: **Endangered.** **Global Population:** 220–230 adult individuals with a declining population trend. When the island was first discovered in 1788, the species was apparently widespread and common, particularly in the lowlands, but in 1853, only 19 years after settlement, it was restricted to the mountainous regions, and by 1930, occurred only in the summit regions of Mt Lidgbird and Mt Gower, where about 30 birds (at most 10 breeding pairs) survived in 1980. The reason for virtual extinction was combination of habitat degradation by introduced pigs and goats, and predation by introduced cats, dogs, pigs, and possibly, people. Land clearance occurred over only small part of island, so unlikely to have had major effect. In 1980, 3 pairs were removed for captive breeding and over the next 4 years 85 captive-bred birds were released into the wild, where they have become re-established in some lowland areas; effective predator control measures were also introduced. Within 5 years of threats having been removed population reached total carrying capacity of the island, estimated at 220 individuals.

Major current threat to population is predation by Masked Owl (*Tyto novaehollandiae castanops*), introduced in 1920s to control rats. Efforts are now being made to eliminate owls from the island since rats are not considered a problem anymore. It has also been suggested that Buff-banded Rails (*H. philippensis*) may outcompete Lord Howe Rail; the former, which re-colonized the island in the 1970s, have temporarily expelled Lord Howe Rails from territories and have been observed in breeding season conflicts with them. The Lord Howe Rail is population small, vulnerable, largely derived from limited genetic pool, and may be limited by suitable habitat, so constant monitoring is recommended. It is intended to set up a captive breeding colony to provide reservoir of birds to augment wild population, if necessary. It is considered “Endangered” at the national level in Australia.

Diet: Mainly worms, crustaceans and insect larvae. It will also feed on mollusks, myriapods, spiders and Hemiptera. It will take eggs and chicks of shearwaters, petrels and domestic fowl. It also eats lichens, fungi, pteridophytes, and flowers and fruits of vascular plants.

It forages on the forest floor among leaf litter, palm leaves, rotten logs, moss and lichens, raking litter aside with bill but not using feet. It chisels wood; enlarges holes in soil with bill and probes to 10 cm deep. Also, it will frequent areas inhabited or regularly visited by people. It obtains water from streams, pools and droplets on moss.

Nesting: Sexes are alike. Predominantly plain olive brown rail, with the oldest individuals developing white cheeks and occasionally white nape. It has rufous and dark brown barring on the remiges.

Normally, it lays eggs August through January. It is monogamous and permanently territorial. The pair-bond is normally permanent. The nest is a shallow depression in ground, lined with dry grass, ferns, moss, palm fronds and leaves well hidden in thick vegetation, under tree roots or log, or in petrel burrow. The nest is built by both sexes. The clutch is 1-4 eggs and are incubated 20–23 days by both sexes. Chicks are fed and cared for by both parents and are moved from the nest to a nursery (brood nest) within 2 days of hatching. The chicks are fully feathered at 28 days and almost fully grown at 65 days, when in heavy post-juvenile molt. Young of previous brood often feed and defend young of next brood and assist in territorial defense.

Cool Facts: It has been sometimes placed in *Tricholimnas*, *Gallirallus* or *Rallus*. Includes *H. (Tricholimnas) conditicius*, known from one specimen and sometimes thought to be a distinct species, but now it is generally regarded as an immature of present species.

Common Name: Buff-banded Rail
Scientific Name: *Gallirallus philippensis*

Size: 9.8-13 inches (25-33 cm)

Habitat: Oceania; it occurs in the Cocos (Keeling) Islands (to Australia), the Philippines, Indonesia, Palau, Papua New Guinea, the Solomon Islands, Australia, Norfolk Island (to Australia), New Zealand, New Caledonia (to France), Vanuatu, Fiji, Tonga, Samoa and Niue (to New Zealand). The subspecies *macquariensis*, of Australia's Macquarie Island, went extinct in the late 1800s.

It can be found in many types of wetlands, including marshes, swamps, lakes, pans, rivers, streams, temporary inundations, estuaries, coastal lagoons, mangrove swamps, saltmarsh and tidal mudflats. It also frequents sewage ponds, farm dams and drainage channels. It occurs on beaches, reef flats, sandbanks and coral cays. Also, it can be found in wet to dry grass, bushed grassland, heathland, scrub, woodland, forest, and rocky and grassy uplands, as well as in crops, pasture, gardens and parks. It favors dense, rank vegetation such as tall grass, rushes, reeds, etc. From sea-level up to 3600 m.

Status: Least Concern. **Global Population:** 10,600 - 141,000 adult individuals with a stable population trend. It is threatened by introduced predators, such as rats and cats. This is particularly important for subspecies which occur on only a few islands, such as the Cocos Buff-banded Rail of the Cocos (Keeling) Islands.

Diet: Worms, mollusks, crustaceans (including crabs), insects, spiders, small fish, frogs and tadpoles, eggs of birds and turtles, young of Sooty Tern (*Onychoprion fuscatus*), fruits, seeds, young plants and other vegetable matter. It may also feed on carrion from road kills, chicken feed, bread and grain.



It feeds all times of day and night, but mostly crepuscular. It feeds on the ground edges of reedbeds and other dense cover, among bushes and mangroves, and in pastures. It scavenges along the strandline and will forage at rubbish dumps.

Nesting: Sexes are similar although males are larger. The tail is all relatively long for a rail. Its head pattern is variably spotted and it has barred upper-parts and upper-wing-coverts. There are rufous and blackish bars on all remiges except outer two, which are barred black and white. It has a white chin, gray throat and buff breast-band (most races). It has barred under-parts, including under-tail-coverts along with a pink bill and pinkish-gray legs. Immatures are like the adult but retains worn juvenile remiges. They also have a narrow or obscured nuchal collar. The iris is yellow-brown. Juveniles are duller than the adult. The head pattern is less distinct and with little chestnut. The throat is mottled. There are smaller spots, usually olive-buff, on the upper-parts. The breastband, if present, is less distinct and the under-parts are barred gray, not gray-black. The bill is gray-black and the iris brown.

Breeding on Cocos (Keeling) occurs in January, May, June; the Philippines, May, November; Lesser Sundas, April, August, but all year on Flores; Moluccas, July/August; New Guinea, mainly in rains but also in dry season; Australia, mainly August–March, but eggs and chicks recorded all months in tropics (northern Queensland); Norfolk Island, December; New Zealand, September–December, March; Vanuatu, mainly October–March; Samoa, January, March–April, July–September, but breeds all year on Apia; Niue Island, July; Tonga, February, July.

It is monogamous and territorial. The nest is a cup of dry grass and stems, sometimes with interwoven dead rooted stems; or roughly woven platform of grass and rushes with depression on top. It sometimes has a flimsy canopy of growing vegetation. It is placed on or above ground (sometimes above water) in long grass, marsh vegetation or crops; in sheltered position under a bush, tree, banana leaf, or in hollow. Usually 4–8 eggs are laid at daily intervals. The incubation is 18–19 days and is performed by both parents. Chicks leave the nest soon after hatching. They are fed and cared for by both parents, possibly largely by female.

Cool Facts: Races are separated on plumage pattern, including: the extent of breastband which is variable even within the races; the darkness of the upper-parts; the extent of spotting on the upper-parts; the pattern of upper-tail-coverts, spotted, barred or plain; and the pattern and extent of barring on the under-parts.

- *G. p. andrewsi*. Endemic to the Cocos (Keeling) Islands.
- *G. p. philippensis*. The nominate race is found in the Philippines; Sulawesi east to Buru; and Sumba (race uncertain), Alor, Sawu, Roti and Timor; recorded recently (perhaps this race) in Borneo (western Sabah, West Kalimantan).

- *G. p. pelewensis*. Endemic to the Palau Islands.
- SUBSPECIES
- *G. p. xerophilus*. This race is found in Gunungapi (north-central Lesser Sundas).
- *G. p. wilkinsoni*. This race is found in Flores.
- *G. p. lacustris*. This race is found in Northern New Guinea.
- *G. p. reductus*. This race is found in the central highlands and northeastern coastal New Guinea, including Long Island.
- *G. p. anachoretæ*. This race is found in the northwestern Bismarck Archipelago, in Pelleluhu Atoll (Ninigo Islands), Kaniet (Anchorite) Islands and Hermit Islands.
- *G. p. admiralitatis*. This race is found on the Admiralty Islands.
- *G. p. praedo*. This race is found on Skoki Island, off southwestern Manus (Admiralty Islands).
- *G. p. lesouefi*. This race is found in New Hanover, the Tabar Islands and Tanga Islands, and possibly New Ireland (Bismarck Archipelago).
- *G. p. meyeri*. This race is found in New Britain and the Witu Islands (Bismarck Archipelago).
- *G. p. christophori*. This race is found in the Solomon Islands.
- *G. p. mellori*. This race is found in southern New Guinea, Australia and Norfolk Island.
- *G. p. assimilis*. This race is found in New Zealand (including Stewart Island).
- *G. p. tounelierii*. This race is found in the Coral Sea islets, from southeastern New Guinea archipelagos and Great Barrier Reef eastward to Surprise Group (off northern New Caledonia).
- *G. p. swindellsii*. This race is found in New Caledonia and the Loyalty Islands.
- *G. p. sethsmithi*. This race is found in Vanuatu and Fiji.
- *G. p. ecaudatus*. This race is found in Tonga.
- *G. p. goodsoni*. This race is found in Samoa and Niue Island.
- *G. p. macquariensis*. This race is found on Macquarie Island (recently extinct).

Common Name: Guam Rail
Scientific Name: *Gallirallus owstoni*

Size: 11 inches (28 cm)

Habitat: Oceania; endemic to Guam where it is now extinct in the wild. A captive-bred population is been introduced to Rota in the south Northern Mariana Islands.

It formerly occurred in most habitats on Guam, including forest, secondary grassland, mown grass, along roads and under telephone lines. It prefers scrub, mixed woodland and scrub, and fern thickets. It is absent from interior of mature forest and wetland habitats.



Status: **Critically Endangered.** **Global Population:** **Extinct in the Wild.** In past, this rail was widely distributed and abundant, despite being hunted by local

people with dogs and snares, and the presence of introduced predators such as feral pigs and cats. Before 1960s population was estimated as 10,000s. It declined rapidly during 1970s, along with most other indigenous birds, as a result of the spread throughout the island of the introduced brown tree snake (*Boiga irregularis*). By 1981, the population had declined to 2000 birds, and by 1983, to less than 100. The species was declared “extinct in the wild” in 1987.

In 1983, a captive breeding program was set up, and about 180 breeding birds are located on Guam, and in 16, in zoos in the United States. The captive breeding has been very successful with the founding birds showing surprisingly good genetic diversity. These results helped to establish a self-sustaining experimental population on the snake-free island of Rota in the south Northern Mariana Islands. Actions are also being taken to extirpate brown tree snake from Guam, so as to permit reintroduction there; birds released on Rota recently bred for first time (reported 1996), and further introductions planned in order to bolster population on Rota.

Diet: Snails, slugs, insects (*Orthoptera*, *Dermaptera* and *Lepidoptera*), geckos and some vegetable matter. It will also eat fish, tomatoes, melon, palm leaves, and carrion (amphibians crushed by cars). The introduced giant African snail (*Achatina fulica*) became an important food when it expanded its range into most of the island's habitats.

It takes food items from ground surface and chases low-flying insects (especially butterflies). It takes seeds and flowers from low grasses and shrubs, stretching up to reach items 40cm above ground. It often forages along field edges and roadsides, but seldom far from cover. It is most active at dawn and dusk, and will forages at night.

Nesting: Sexes alike but female smaller. In fresh plumage, the adult has indistinct, dull olive-buff breast band which becomes abraded to leave breast clear gray. Some individuals have a pronounced reddish tinge on the nape. It is darker than the Buff-banded Rail and lacks chestnut on its face, breast and usually nape, the black and white barring on more remiges, decreasing from extensive, bold barring on the outer primaries to narrow barring on the secondaries as brown of feather centers becomes broader. It has uniform brown upperparts with no spots or bars and its black bill has a gray base. Juvenile s are similar to adults but with less extensive areas of gray on the neck, breast and supercilium.

It breeds throughout year, but possibly with peak period during rains, July through November. It is monogamous and territorial. Nests are located on dry ground in the dense grass. It is a shallow cup of interwoven loose and rooted grass and built by both sexes. 3-4 eggs are laid and the incubation period is about 19 days, Incubation is shared by both sexes. The hatching is asynchronous. Chicks leave nest within 24 hours of hatching, but are fed and

cared for by both parents. Chicks begin to attain juvenile feathers during 4th week of life and reach adult weight at 7 weeks. The post-juvenile moult is apparently complete at 16 weeks.

Cool Facts: This rail is virtually flightless; it can fly for only 1–3m.

Special Thanks to my beta testers...

Alisa and Flinthawk

Species Accuracy and Reference Materials

Many birds of the same species do vary considerably in color. This package tries to emulate the colors and markings in the most commonly found variants.

The author-artist has tried to make these species as accurate to their real life counterparts as possible. With the use of one generic model to create dozens of unique bird species, some give and take is bound to occur. The texture maps were created in Painter with as much accuracy as possible. Photographic references from photographs from various Internet searches and several field guides were used.

Field Guide Sources:

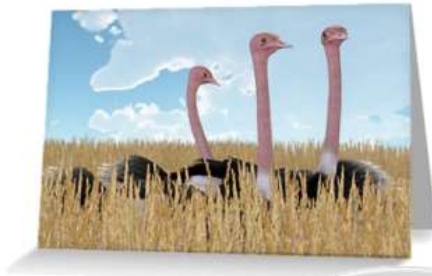
- **Wikipedia** (<https://www.wikipedia.org>)
- **BirdForum.net** (<http://www.birdforum.net>)
- **Birdlife International** (<http://www.birdlife.org>)
- **Cornell Labs Birds of the World** (<https://birdsoftheworld.org/bow/home>)

Other Resources:

- Songbird ReMix.com
- [Songbird ReMix on Facebook](https://www.facebook.com/SongbirdReMix)

**Songbird
ReMix**

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