

## Black Rail

*Laterallus jamaicensis*

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### DESCRIPTION

#### Taxonomy and Basic Descriptions



The Black Rail is the smallest North American rail measuring 10-15 cm (4 -6 in.) in length and 35 g (1.2 oz.) in weight (Eddleman et al. 1994). Adult rails have strikingly red irises, a dark gray to blackish head, gray neck and breast, rufous nape, and a black and white patterned back. Adult males have darker chins and breasts compared to females, but are comparable in size (Eddleman et al. 1994). Juveniles are similar in appearance to adults but are duller overall (Sibley 2003). There are currently 5 subspecies, two of which nest in North America: the Eastern Black Rail (*L. jamaicensis jamaicensis*) and the California Black Rail (*L. jamaicensis coturniculus*). The Eastern Black Rail is the subspecies found in along the Atlantic coast, gulf coast, and mid-western region of the U.S. (Eddleman et al. 1994).

#### Status

The Black Rail is currently under consideration by the USFWS to be listed under the Endangered Species Act. The Southeast US Waterbird Plan (Hunter et al. 2006) lists the Black Rail as in need of Immediate Management and of Continental and Regional Concern. In South Carolina, the Black Rail is a state “species of concern”. Because the Black Rail is a very small, secretive bird, and has historically been rare and unevenly distributed, population trends are difficult to monitor. Where surveys have been conducted, data suggest that the Eastern Black Rail has experienced a sharp population decline during the past 15 years. Retractions in breeding range, the loss of sites, and the reduction of individuals at historical strongholds have been documented in the northeast (M. Wilson, presentation at Black Rail Workshop, 2013).

#### POPULATION SIZE AND DISTRIBUTION

The population size and distribution is not well known for Black Rails along the Atlantic and Gulf Coasts. In the Southeast United States Regional Waterbird Conservation Plan (Hunter et al. 2006), the authors state that that the Southeast U.S. is likely to support most of the remaining eastern breeding populations and that there are likely less than 5,000 pairs. During discussions at the 2013 Black Rail workshops, biologists from states throughout the range concluded that the information that is currently available suggests that far fewer than 5,000 pairs likely remain.

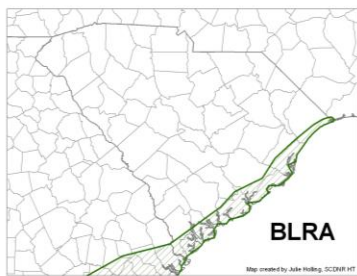
The Eastern Black Rail is believed to breed along the Atlantic coast from Connecticut to south Florida. Along the gulf coast and in the Midwest, breeding populations of this subspecies are known in Texas, Colorado, Kansas, Oklahoma, Minnesota, and Michigan. The northern and inland extents of the breeding range are not well defined.

In South Carolina, there is only one confirmed nesting record from 1903. Calling locations are

spotty, with Bear Island WMA in Colleton County supporting the most significant population located to date. During an extensive marsh bird survey conducted by SCDNR during 1991 and 1992 breeding seasons, a total of 38 Black Rails were counted at the following sites: Bear Island WMA (31), the Yawkey Center Heritage Plantation (5) and at the Santee Coastal Reserve (2) (Cely et al. 1993). Black Rails have also been reported in isolated wetlands in the upstate.

During the nonbreeding season, Eastern Black Rails generally migrate to the southern portion of their breeding range. South Carolina provides habitat for Black Rails throughout the year. The California subspecies generally is not migratory but is known to move from site to site as conditions change.

## HABITAT AND NATURAL COMMUNITY REQUIREMENTS



Freshwater and brackish marshes, wet meadows, and flooded grasslands in the Coastal Zone are believed to be the primary habitats of the Black Rail. It is typically found in black-needle rush marshes (*Juncus roemerianus*) and “high marsh” (infrequently flooded) on the edges of marshes, waterfowl impoundments and other wetlands. Cryptic nests are typically built in clumps of vegetation in elevated areas surrounded by a mix of small pools of water and areas with moist soil (Eddleman et al.

1994). Black Rails do not use marsh with significant amounts of standing water and require stable water levels at their nest sites. Succession to woody plants is detrimental to this species. Black Rails are believed to feed primarily on small invertebrates and seeds (Eddleman et al. 1994). They require foraging habitat near their nests sites.

## CHALLENGES

Black Rails face many of the challenges identified for other species in the Marsh Birds guild, but also face unique challenges due to their specific habitat requirements. Factors limiting population size are not well known, but habitat availability likely plays a large role in regulating populations (Eddleman et al. 1994). Wetlands in the Southeastern United States represented 89% of the total wetland lost in the United States in the mid-1980s (Hefner et al. 1994).

Although managed impoundments benefit many species in the Marsh Bird guild, traditional impoundment management practices for waterfowl typically do not create suitable nesting habitat for Black Rails. In South Carolina, most managed wetlands target waterfowl and other species that benefit from deeper water and substantial fluctuations in water levels.

Rapid and expansive coastal development has created many challenges for Black Rails and other coastal species. In addition to direct habitat loss, development also alters the ways that remaining Black Rail habitat is managed. Ditching shallow wetlands and creating deeper reservoirs for mosquito control has resulted in the loss of suitable nesting habitat. In the Northeastern U.S., aggressive mosquito control programs using insecticides at sites that formerly supported large populations of Black Rails may have eliminated their invertebrate prey source (Eddleman et al. 1996, discussions during Black Rail Workshop, 2013). The effects of insecticides on Black Rails

are unknown.

Fire suppression causes habitat loss because plant succession reduces the suitability of high marsh and shallow wetland habitat. Prescribed burning is an important tool for managing Black Rail habitat. As development increases along the coasts, managers are more reluctant to use fire as a management tool, and regulations restricting burning have increased. Slow-burning (backing and flanking) fires that leave a mosaic of burned and unburned areas maintain suitable habitat for Black Rails. High marsh habitat should not be burned every year because it takes a couple of years for suitable vegetation to re-grow. Fast-moving and multipoint fires can result in Black Rail mortality (discussion at Black Rail Workshop, 2013). Black Rails are reluctant to fly and need to be able to reach pockets of unburned vegetation to survive. Burning during the nesting season can result in the loss of adults and young. The use of aerial ignition to burn huge areas quickly and “clean burns” in which no patches of vegetation are left are probably particularly dangerous practices for rails and other wetland species.

Effects of climate change and sea level rise are currently being studied. Sea level rise is expected to be particularly detrimental to high marsh habitat. High marshes are likely to flood at a rate too high for sediment accretion and will be converted to low marsh faster than new high marsh habitat can form. In some areas that have been altered by development, modifications to the shoreline will prevent marsh transgression. As the amount of high marsh between forested areas and low marsh becomes narrower, Black Rails might be pushed into habitat that is more accessible to predators. Increases in storm frequency and intensity may lower productivity if nests are overwashed or foraging habitat is flooded.

As interest in birding and nature photography continues to increase, disturbance at popular birding spots may become a threat. Vocalization playback equipment has become readily available and may be used to lure rails into view. Due to the small, hidden nature of nests, trampling is also a potential problem. Ethical birding practices are particularly critical when searching for a rare species such as the Black Rail.

## CONSERVATION ACCOMPLISHMENTS

The continued preservation of wetland habitats is beneficial to the Black Rail. Preservation of areas such as the ACE Basin, national wildlife refuges, and SCDNR wildlife management areas along the coast provide resources for this species. During 2013, the Center for Conservation Biology organized Black Rail Workshops in Delaware and South Carolina. State, federal, university, and non-governmental biologists from at least 7 states participated in the workshop in South Carolina. Research and management priorities were set by the group.

## CONSERVATION RECOMMENDATIONS

- Conduct Research to Inform Management Decisions
  - Extensively survey appropriate habitat to determine if the Black Rail has declined in South Carolina since surveys were last conducted during 1991-92. Use standardized protocol specific to Black Rails rather than the Conway (2004) marsh bird protocol.

- If significant numbers of Black Rails are found to be nesting in South Carolina, determine if they are nesting successfully and what factors limit productivity. Factors that should be considered include predation, invasive species (fire ants, feral cats, *phragmites*, etc), prey availability, nest overwash/unstable water levels, mortality during prescribed burning using multipoint aerial application techniques.
- Research basic life history and management needs in South Carolina's wetland habitats. Determine habitat requirements and best management practices.
- Survey during the nonbreeding season and study habitat use by wintering and migrant birds.
- Coordinate research efforts with other states along the Atlantic and gulf coasts.
- Develop and Implement Habitat Management Strategies
  - More information is needed to refine management recommendations, but the following practices are likely to benefit Black Rails:
    - Protect and manage high marsh habitat.
    - Retard plant succession. When Black Rails and other marsh birds are present, use slow burning techniques (backing and flanking) and avoid clean burns that do not leave patches of vegetation where rails can hide. Avoid burning during nesting season. Burn approximately every 3 years. Disking, mowing, and other measures that restore natural disturbance regimes can also be used.
    - Manage shallow water impoundments that have topographic variations. To avoid killing invertebrate prey supply, maintain consistent salinity level and do not allow soil to complete dry out. Rotate management among impoundment and flood or burn periodically to set back succession.
- Support Outreach and Public Education
  - Advocate for management specific to Black Rails on both public and private properties.
  - Create resources with impoundment management recommendations and high marsh habitat management recommendations.
  - Raise public awareness about status and conservation needs of the Black Rail.

## MEASURES OF SUCCESS

The first measure of success would be to implement long-term population monitoring studies which would yield information about distribution, population status, and trends. The next step is to increase quantity and quality of habitat by implementing the above-mentioned conservation recommendations. The ultimate measure of success is to increase populations to a sustainable level.

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Note: Much of the general information included in this account was provided during presentations given by Michael Wilson (Center for Conservation Biology), Michael Legare (USFWS), and other biologists with knowledge of the species at the Black Rail Status and Conservation Workshop, Savannah National Wildlife Refuge, November 12-14, 2013.