
Project Title:	Black Rail Status Survey for Coastal and Interior Florida
Project Duration:	March 1, 2016 to December 31, 2017, Statewide March 1, to September 2016 for St. Marks and St. Vincent National Wildlife Refuges.
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INTRODUCTION

The eastern black rail (*Laterallus jamaicensis jamaicensis*) appears to have declined at a rapid rate over the past several decades. Although little range-wide data exist on this highly secretive marshbird, systematic surveys conducted at 200+ points in Maryland showed an approximately 85% reduction in occurrence between 1992 and 2007 (David Brinker, Maryland DNR, pers. comm.). Anecdotal reports (Michael Legare, USFWS, and Michael Wilson, Center for Conservation Biology, pers. comm.) suggest that this pattern is repeating itself throughout all of the Atlantic states, including Florida. As early as 1990, this species was considered to be of highest concern by Florida state biologists and received a Millsap score of 31 (Millsap et al. 1990) – a score recently raised to 32.9 by the Florida Fish and Wildlife Conservation Commission (FWC). Florida also included the black rail as a Species of Greatest Conservation Need in its State Wildlife Action Plan (FWC 2011). Currently, the U.S. Fish and Wildlife Service (USFWS) has been tasked with determining if this subspecies meets federal listing criteria under the Endangered Species Act.

Historically in Florida breeding rails have been confirmed at several saltmarsh and interior freshwater locations (Runde et al. 1990). However, what little survey data is available is almost two decades old or older, and survey coverage was incredibly sparse compared to the amount of possible habitat, particularly in interior freshwater marshes. Florida is in dire need of a large scale intensive systematic survey to thoroughly document the status of this difficult to detect and highly at-risk species.

This project aims to fill the existing gaps in knowledge about the status of black rails in Florida by a) re-surveying sites previously occupied by black rails to determine if rails still populate these sites and b) surveying new sites with potential rail habitat.

OBJECTIVES

1. Determine if black rails continue to occupy sites where they have historically been present.
2. Document distribution across the state by surveying new sites with potentially suitable black rail habitat.
3. Develop an occupancy model for Florida marshes based on habitat variables collected both in the field and remotely.

METHODS

Survey methods and analysis:

Black rail surveys will be conducted using a standardized call playback technique. The call playback survey will be a 10-min sequence of alternating silent listening periods and species playback in the following order: 1) 2 min silence, 2) 4 min black rail calls, 3) 1 min silence, 4) 2 min clapper rail calls, 5) 1 min silence. This protocol is the same as the one used in South Carolina and similar to those used in previous survey efforts in New Jersey, Maryland, Virginia, North Carolina, and Georgia. The only difference between this protocol and those other states being the replacement of a Virginia rail call with a clapper rail call since Virginia rails do not breed in Florida. Counts will be conducted in weather conducive to detecting birds, excluding periods of rain, wind velocities >20 kph, or high ambient noise. Survey protocol at each survey point will follow a standard operating procedure described below:

- Each survey point will be located with a WAAS enabled GPS unit and marked with flagging for future surveys.
- All surveys will be conducted between 0.5 hour before sunrise and 3 hours after sunrise. Surveys may also be conducted in the evening starting 3 hours before sunset. (Legare et al. 1999)
- Temperature, weather, noise level, and wind speed will be recorded. For salt marshes tidal stage will be collected via computer after surveys are completed, as wind strongly influences tidal stage along the Gulf Coast.
- A single observer will be used.
- All detections will be recorded at minute intervals until the end of the survey.
- All birds heard or seen for an unlimited distance from each survey point will be recorded. Points will be a minimum of 400 m apart.
- The distance to each bird will be visually estimated. Laser rangefinders will be used to train staff on estimating distances in the salt marsh.
- Spot mapping of detected birds will be used to reduce the probability of double-counting individuals.
- Each count point will be visited on 3 occasions, with each replicate separated by 7-10 days.

Once during the season, we will estimate percent cover (in 5% increments) of the following habitat components within a 50 m radius of each count point: bare ground, water, and any type of vegetation present (which could include various wetland plant to species, upland vegetation, shrubs, etc.). Information also will be obtained through remote sensing on marsh patch size, management history, distance to habitat edge, and edge characteristics.

We envision this project to be a 2-year survey effort, where new sites will be surveyed in each year as well as any sites with positive detections being surveyed in the second year with a nearby random set of non-occupied points for resurvey. We estimate that we can survey a minimum of 300 points per year. Detection probability and occupancy, along with their associations with habitat variables will be estimated using occupancy models (McKenzie et al. 2003).

PROGRESS

Surveys were conducted between 18 April and 23 June 2016 on St. Marks and St. Vincent NWR. There were six survey routes on St. Marks and three on St. Vincent (Figures 1 - 3). Each route had between

6 and 8 locations with an average of 7 for a total of 65 survey locations. We were able to run three replicates on each of the nine routes for a total of 27 routes and 195 survey locations.

We did hear Black Rail on both of the National Wildlife Refuges. St. Vincent NWR was our most consistent survey location over all of our surveys in 2016. We detect Black Rail at 7 to 9 different locations on St. Vincent NWR and at two location on St. Marks NWR. Some suspected vocalizations were heard brief and faint at two of the 9 locations on St. Vincent to confirm for sure. Three location had two individuals at the survey points (one at St. Marks, two at St. Vincent). Only one location on St. Vincent had Black Rails at each of the three survey replicates.

Please see the accompanying Excel file that has 5 tabs associated with Metadata, All Survey Coordinates, Visit Covariates, Black Rail Detections, and Incidental Species.

LITERATURE CITED

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Figure 1. Black Rail playback surveys locations on St. Vincent National Wildlife Refuge in 2016.



Figure 2. Black Rail playback surveys locations and routes on St. Marks National Wildlife Refuge in 2016.

