Survey Protocol Summary for Eastern Black Rail (*Laterallus jamaicensis jamaicensis*)

Contact

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Call-response surveys (sometimes also referred to as call playback surveys) are the most widely and consistently used technique to survey for presence and abundance of secretive marsh birds (Conway 2015). Only an individual trained to perform this survey method should do so. This technique does NOT require a surveying individual to hold a valid bird banding permit issued by the U.S. Geological Survey, Bird Banding Lab under the Migratory Bird Treaty Act, or a Threatened Species Recovery Permit issued by the U.S. Fish and Wildlife Service under the U.S. Endangered Species Act. Please see Eastern Black Rail Capture and Banding Guidance October 2020 for standard capturing and banding techniques.

Goal

This document summarizes the basic structure and function for the most common technique used to survey for eastern black rails (*Laterallus jamaicensis jamaicensis*, black rails).

Current Call-response Survey Protocol Use

Black rails are particularly secretive and require a species- specific protocol. Due to their behavior and habitat structure, black rails are rarely seen. In addition, they do not call as regularly as other taxa such as songbirds or even other rails. Therefore, observers use recordings of black rail calls in an attempt to elicit responses from birds that may be present.

Currently, there are multiple survey protocols in use throughout the United States. Call-response Survey Protocols are currently evolving. Researchers may find different survey techniques that have been used on similar species, but never attempted with black rails. Those methods should be vetted and authorized by a local black rail researcher and black rail U.S. Fish and Wildlife Service Lead in their state prior to use with black rails. Although protocols used for black rails have varied somewhat with geography and time, all protocols share the following attributes:

1. Survey points are placed within known or potential black rail habitat with a minimum of 400 meters (0.25 miles) between points to ensure that birds counted at one point are not counted at another point.
2. Surveys are done during the breeding season to maximize response. Breeding season varies with latitude and may vary with habitat, so consult local experts to understand what the best period is for you. While black rails are occasionally detectable during the non-breeding season the detection rates are much lower and call-response surveys are not considered reliable to detect presence during this period. Consider other techniques if you need to document presence during the non-breeding season.

3. Surveys are also timed to coincide with the time of day that is known or suspected to maximize the likelihood of birds responding to playback. For many of the northern states this is during the night, while in the southern states (roughly below 36° latitude in the coastal zone) this appears to be during the periods around dawn and dusk, though this is a generalization. Routes should be timed so that all points are completed within this peak period. Consult local experts on the best timing.
4. Points are visited multiple times throughout the season. Standard occupancy practice calls for a minimum of three visits, but with black rails a minimum of five visits is ideal given low detection rates. Five visits or more greatly increase the likelihood of detecting the species if it is in fact present.
5. A survey consists of 1-2 observers arriving at a point, recording pertinent environmental variables (ex. – wind speed, cloud cover, etc.), setting up playback equipment, and conducting the bird survey. The playback protocol and sound file typically include at least two minutes of a passive listening period followed by some combination of black rail calls interspersed with silence over a set period of time. Playback sequence may also include calls of heterospecific marsh birds such as Virginia rail, king rail and clapper rail which have been known to elicit responses from black rails. No protocol includes playback lasting longer than 15 minutes.
6. No point is surveyed more than once a day and typically there is a minimum of five days and an average of two weeks between visits to the same point. A shorter interval between visits may be used during short-term rapid assessments and other experimental conditions but is not recommended for long-term monitoring.

Exemplar protocols with detailed information and playback files are available upon request from local Ecological Services Field Offices. Anyone designing and/or carrying out black rail surveys should be aware of the underlying assumptions and limitations of using this type of technique (Legare et al. 1999, Conway et al. 2004, Conway and Gibbs 2005, 2011).

Local Ecological Service Field Office Contacts

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