

# Design and Implementation of Secretive Marsh-bird Monitoring Program in Iowa

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**Collaborators:** Iowa Department of Natural Resources  
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## Goals and Objectives:

- Refine existing methodology for surveying secretive marsh birds in Iowa
- Design and implement a survey for estimating the abundance of secretive marsh birds (bitterns and rails) in Iowa and suggest how this could be used as a long-term monitoring tool

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Assess general habitat associations of secretive marsh birds in Iowa relative to wetland characteristics

## Progress:

### *Site Selection*

Study sites were randomly selected from the National Wetlands Inventory (NWI) database (USFWS 2009) with a few modifications to meet the objectives of this study. We arranged wetlands into six different classes based on area (ha) to ensure that potential area-dependent species would be sampled. Had we selected wetlands purely at random, most of the larger wetlands would have been missed because >95% of the wetlands in the NWI database are <5 ha. The six different classes were as follows: 0-5 ha, 5-10 ha, 10-20 ha, 20-30 ha, 30-40 ha, and >40 ha. A sample of 50 wetlands was randomly selected from each size class, except only 26 wetlands were selected for the 30-40 ha size class due to the small number of wetlands within that class. Survey points were randomly assigned to each wetland within each size class. One point was assigned to wetlands in both the 0-5 ha and 5-10 ha class, two points were assigned to wetlands in the 10-20 ha class, three points to those in the 20-30 ha class, four to those in the 30-40 ha class, and five to those wetlands in the >40 ha class. Survey points were placed at least 400m apart to avoid double-counting individual birds and to maximize coverage at each wetland (Conway 2008).

### *Bird and Habitat Surveys*

Call-playback surveys were conducted by Tyler Harms (M.S. student) and Holly Wilkens (summer technician) in accordance with the North American Marsh Bird Monitoring Protocol (Conway 2008). Surveys were conducted once at each survey point from 16 May to 7 July 2009. A select number of points were re-surveyed from 7 July to 15 July 2009 to provide data on bird response rates late in the survey season. Habitat at each survey point was measured and included percent cover of wetland vegetation and open water within a 50 m radius of the center of the point, dominant vegetation type, and vegetation height within a 50 m radius.

## Results

We surveyed a total of 324 points at 82 different wetlands from 16 May to 15 July across the state of Iowa. All eight of our study species were detected at least once. We ended our survey season with a total of 620 detections, averaging 1.88 detections per point. We detected almost 1.5 times as many Least Bitterns, Virginia Rails, and Pied-billed Grebes from 1 June to 15 July than from 16 May to 31 May, highlighting the importance of continuing surveys beyond 31 May in Iowa. The five types of vegetation that were found most commonly on surveyed wetlands in Iowa were cattail (*Typha spp.*), bulrush (*Scirpus spp.*), sedge (*Carex spp.*), reed canary grass (*Phalaris arundinacea*), and woody (trees and shrubs). The most common and frequently dominant type of vegetation at survey points was cattail (*Typha spp.*). We also measured percent coverage of open water with approximately 81% of points having >0% coverage of open water and an average water depth of 15.13cm at each point (minimum depth of 0.0cm and a maximum depth of 71.0cm).

## Future Plans:

In 2010 we plan to follow the North American Marsh Bird Monitoring Protocol exactly, conducting bird surveys during the suggested time of 15 April to 31 May (Conway 2008). As in 2009, we plan to extend the survey season to 15 July to gain an insight into marsh-bird distribution and abundance during the latter stages of the breeding season. We also plan to assess the effect of repeat visits to a sample of wetlands on inferences about the marsh-bird community and will implement this during the 2010 survey season. We will continue to collect habitat measurements at each survey point to assess any habitat associations of these species of birds relative to wetland characteristics across the state. This would also allow us to determine annual habitat changes at different wetlands.