Secretive marsh birds, which include rails, bitterns, and gallinules, are marsh-dependent species that have experienced population declines associated with wetland loss and degradation across much of North America and are of high conservation concern. Standardized marsh bird monitoring surveys have been conducted across North America over the past decade to monitor population trends and investigate habitat relationships for these secretive species, however, the efficacy and efficiency of these monitoring efforts have not been evaluated specifically for Ohio. During 2016-2018 we conducted variations on the frequency and timing of standardized marsh bird monitoring surveys and captured, radio-marked, and tracked the movements of Virginia rail and sora at coastal wetlands in northwestern Ohio in the western basin of Lake Erie to evaluate the effect of survey frequency, timing, and level population closure on occupancy and abundance estimates derived from standardized monitoring surveys. We also assessed fine-scale habitat associations of secretive marsh birds. The results of this study indicate that large numbers of Virginia rail and sora are emigrating from northern Ohio during the breeding and survey monitoring season when the population was assumed to be closed. Also, increased survey frequency across the survey season increased precision in estimates of occupancy and abundance for marsh birds, and vegetation composition, structure, arrangement, and water depth all played important roles in secretive marsh bird habitat associations. These results can be used to inform management of wetlands for suitable marsh bird habitat and tailor monitoring efforts for secretive marsh birds in northwestern Ohio.

James Hansen

Survey Methods and Habitat Associations of Secretive Marsh Birds in Coastal Wetlands of the Western Lake Erie Basin

Advisors: Dr. Robert Gates, Dr. Christopher Tonra