Midwest Marshbird 3-Year Action Plan

Priority 1: Analyze Current Data

Analyze the current data that has been collected using the Johnson et al. framework. Can baselines be developed? Need to explore data to see what it can tell us at different scales to understand feasibility of monitoring and its limitations.

Current projects:

1. Analyze Johnson et al framework data to get population estimates for target species. Different techniques will be used to inform level of effort needed to get population estimates with various levels of precision.
    a. Michigan Natural Features Inventory (MNFI; Monfils) currently has a project with the JV to estimate population sizes for target marsh bird species using data from MI, MN, OH, and WI (and possibly IL). Several modeling techniques will be compared and the results will be used to assess the future survey effort needed to achieve various levels of precision in population estimates.
    b. Illinois Critical Trends Assessment Program (CTAP) has a long-term dataset on wetland use by marshbirds in Illinois; T.J. Benson at the University of Illinois / Illinois Natural History Survey is the PI and contact.
2. Assess detection probability for Sora and Virginia Rail.
    a. Winous Point currently has a proof of concept project funded (in part) by the JV. They will also be evaluating distance sampling and looking at producing site-specific population estimates. Mike (MNFI) and Brendan (WPMC) are communicating and sharing complementary project information.

Next steps:

3. Incorporate landscape characteristics information into Johnson et al analyses. Some work on this is ongoing.
    a. MNFI has conducted some work on this using MI and some OH data; Mike will share his methods and final report with INHS.
    b. Illinois Natural History Survey is doing a project on this now.
    c. Ben Kahler (Ohio State thesis) and Dave Krementz (Bolenbaugh et al. 2011) have published work.
    d. Need to summarize existing efforts.
    e. Hold a meeting in fall or winter (2018) to determine next steps.
    f. Search for resources to complete this action.
4. Using the Johnson et al. framework data, determine the power to detect trends based on different thresholds. Use this information to help inform level of monitoring effort going forward.
    a. MNFI is planning to incorporate this as part of their population estimate analysis (see above)**.**
        i. Need the working group to identify what needs to be evaluated at a regional scale (e.g., species, level of change, time frame).
        ii. Need to identify the timeframe within which this needs to be finished.
        iii. Will search for additional resources and potential partners **IF** more work is needed.

5. Explore other data sets to determine the power to detect trends based on different thresholds. Compare or combine with Johnson et al. data.
    a. Search for resources to complete this action.
    b. Potential partners: National Audubon (Nicole Michel), Bird Studies Canada (Doug Tozer), Great Lakes Coastal Wetlands Consortium (Bob Howe?), MNFI.
6. Work with Point Blue to complete marshbird platform for bulk data upload and analysis tools for basic visualization and data summaries. Work with partners to get additional datasets into the data center.
    a. Working group to assist in identifying important datasets for upload.
7. Frequently share updates on the status of ongoing analyses with group as available.
8. After analyses, determine how to continue monitoring for key regional needs (population trends, habitat management, etc.).
    a. Continue Johnson et al. framework during analyses.

Priority 2: Better Understanding Habitat Associations

There is a need to better understand the quality of habitat that results in improved rates of occupancy. Additionally, what are the specific habitat associations required by marsh bird species / guilds, and how can we distinguish high quality habitat that results in improved:

a. Breeding success
b. Survival (concerns about sinks)
c. Body condition

There is also a need to better understand marsh bird biology during the full annual cycle (e.g., migration, wintering):

d. Habitat requirements during migration and wintering periods (e.g., what, how much, and where is it needed)
e. Timing of migration
f. Duration of stopover
g. Determine if there are habitat bottlenecks (e.g., BCR 22) in the Midwest region that require greater conservation focus (do marsh birds readily fly long distances, passing over habitat deficient landscapes?).

Some of this could potentially be learned through adaptive management processes if this objective was considered at the onset of management actions.

Current/past projects:

1. Indiana currently has a project to identify habitat associations and management impacts for 8 secretive marsh birds occurring across Indiana [IN DNR and National Audubon].
2. Heath Hagy and Aaron Yetter through the University of Illinois / Illinois Natural History Survey have an ongoing project examining potential factors that influence productivity of marshbirds (Sora, American Coot, Common gallinule, Pied-billed Grebe, Least Bittern, Black-necked Stilt, etc.) at Emiquon Preserve in central Illinois; Project should be completed in 2019.
3. Heath Hagy and Aaron Yetter through the University of Illinois / Illinois Natural History Survey have two projects examining factors affecting marsh bird occupancy of wetlands across Illinois; Graduate students are Therin Bradshaw (Western Illinois University) and Abigail Blake-Bradshaw (UI-Urbana/Champaign; Projects should be completed in summer 2018.

4. Lisa Webb at the University of Missouri has two projects that have examined habitat associations of breeding marshbirds.
5. The JV waterbird plan identified habitat associations and descriptions of quality habitat based on the literature and expert opinion (e.g., American Bittern, King Rail, Sora, Yellow Rail).
6. Current project on King Rail using satellite data [Winous Point].

Next Steps:

7. Prioritize research needs in relation to understanding habitat associations; work with the JV to fund needed research.
    a. Hold a webinar or another face-to-face meeting to develop and refine list of research and monitoring priorities by late Fall 2018.
8. Consult with other dataset owners to see what information they may have to bring to bear on habitat associations.
    a. Provide opportunities to have other dataset owners (MMP, Coastal Monitoring Program, others?) share what they have learned about habitat associations for marshbirds (webinar opportunities).
9. Coordinate and learn from each other as information becomes available.
    a. Provide opportunities to share published manuscripts and grey literature thru updates on webinars/ conference calls.
    b. Look for opportunities to collaborate on projects to better understand habitat needs across the region.
    c. Develop a mechanism for partners to easily share information and communicate both internally and externally (e.g., JV website, Facebook page, Research Gate, etc).

Priority 3: Managing For Marshbirds and Waterfowl

Need to continue growing our understanding of how to manage for marshbirds without negative impacts to waterfowl; migratory habitat needs and timing should be considered. There is some research available.

Next Steps:

1. Synthesize current research that examines management for marshbirds, especially in relation to waterfowl management.
    a. Therin Bradshaw, from University of Illinois/ Illinois Natural History Survey – will be developing a chapter for his thesis that could fulfill part of this need.
    b. Nicole (?), from University of Illinois may also have information to share.
    c. Lisa Webb's students, may also have information to share.
    d. Nina Hill, University of MN, is currently finishing her thesis on the effects of invasive cattail management on marshbirds.
    e. Tyler Harms and Rachel Vanausdall's work in IA may be relevant.
    f. MNFI has two relevant ongoing studies: 1) comparing marsh bird use of impounded and unimpounded wetlands in MI, OH, and WI; and 2) assessing marsh bird use of altered and rehabilitated wetlands in BCR 12 of Michigan.
    g. Consider developing a white paper.
2. Identify priority needs.
    a. By late Fall 2018, identify next steps for research or management.
    b. Develop projects to address priority needs.

3. Identify areas (both spatially and temporally) where waterfowl management is occurring, what type of management is occurring, and how might it conflict with marshbird needs. What regions do we think are having potential conflicts?
    a. BCR 22 has the most limited wetland base in the Midwest region and many of the existing public wetlands are managed for waterfowl. Can wildlife management areas provide value to both bird groups, and is the greatest conservation concern for marsh birds during the breeding or non-breeding period?
    b. May consider developing a simple database (that could be updated through time) of known locations for waterfowl management. At a minimum this would provide a means for communicating with partners about marshbird needs (e.g., adaptive management to help fill information gaps).
    c. Include state wetland managers (especially BCR 22) early-on and throughout the discussion as they could be obstacles or keys to success, depending on buy-in.