JV Science Team Meeting Minutes, 29–30 January 2020
Upper Mississippi River / Great Lakes Joint Venture

The JV Science Team met at the Illinois DNR State Headquarters following the Midwest Fish & Wildlife Conference in Springfield. Several Science Team members developed the meeting agenda and participation was inspiring. To inform new members, Greg Soulliere began the meeting with a presentation describing the evolution (since 2003) and role of the JV Science Team. Member and guest introductions were followed by invited presentations.

Technical Committee members present: John Coluccy (DU), Mike Eichholz (SIU), Dave Ewert (TNC), Bob Gates (OSU), Dave Luukkonen (MSU), Frank Nelson (MDC), Mark Nelson (USFS), Rich Schultheis (KS PW), Greg Soulliere (FWS-JV), and Wayne Thogmartin (USGS).

Ad hoc Bird-group Subcommittee members present: Mohammed Al-Saffar (FWS-JV), Auriel Fournier (INHS), Drew Fowler (WDNR), Shawn Graff (ABC), Jim Herkert (IL Audubon), Adam Janke (ISU), Sarah Kendrick (MDOC), Brian Loges (FWS-Refuges), Mike Monfils (MI NFI), Rachael Pierce (FWS-MB), Sarah Sanders (Audubon), Brendan Shirkey (WPMC), John Simpson (WPBC), Kelly VanBeek (FWS-MB), Mitch Weegman (UMO), and Tom Will (FWS-MB).

Guests: Ashley Gramza (AR F&G), Ellen Herbert (DU), Kali Rush (DU), and Eric Schenck.

Highlights from presentations (29 January)

A meeting of the full Science Team began at 1:00PM on the afternoon of the 29th. Presentations and discussion related to bird conservation planning, integration of biological and social objectives, and research updates was our focus this afternoon. Listed below are titles, presenters, and key points.

Integrating ecological services into wetland bird conservation (Ellen Herbert, DU)
>   DU planning increasingly recognizes overlap in the habitat needs of breeding and nonbreeding ducks, concerns of people, and the field of Human Dimensions (HD). Ellen provided several examples of integrating social objectives into waterfowl planning, including consideration of up-steam and downstream connections associated with habitat delivery and the economic values of bird habitat to people (e.g., reducing flood risk).

U.S. NABCI Human Dimensions Working Group update and Arkansas social science efforts (Ashley Gramza, Arkansas Fish and Game)
>   Human Dimensions = social science, and examples of nontraditional ways to integrate social science were described. NABCI developed a guidance document to help planners, with examples of how JVs are addressing social objectives. NABCI also developed a Relevancy Tool to help understand how vibrant bird habitats are linked to human health. Local scale planners should also consider demographics, settlement history, governance, development pressure, social context, landowner characteristics and attitudes. Past assumptions made by bird scientists about people are often uninformed.

Ecological / social assessments for wetland planning in Missouri (Frank Nelson, MDOC)
>   The Missouri Dept. of Conservation has taken a team approach to wetland planning, clearly identifying social and ecological goals, and finding common ground for collaboration. They

have used hydro-geomorphic analysis to understand systems and increase long-term efficiency, especially regarding infrastructure need and placement. MDOC staff also used Structured Decision Making (SDM) and Beta modeling to determine habitat suitability and distribution, and conducted multiple surveys to gather public perceptions.

Overview on NFWF wetland restoration evaluation tool (Bob Gates, OSU)

About two years ago, the National Fish and Wildlife Foundation hired a group to assess wetland bird habitat restorations completed as a result of the Sustain Our Great Lakes initiative. The shorebird and waterfowl portions of the assessment used energetics and other information from JV strategies, resulting in a strong link to these JV tools. Bob encouraged the group to use JV focal species and plan for enough habitat to have a population impact, at least at the local scale. The period to measure response is 3 years, with a target of 20% increase in local energy values for waterfowl and shorebirds. This effort may provide a means evaluate some JV assumptions.

Moving waterbird conservation forward in the Midwest (Rachael Pierce, FWS, and Mike Monfils, Michigan Natural Features Inventory)

The 10-year history of the Midwest Marsh Bird Working group was reviewed. In 2019, teams were established (Data Analysis, Data Synthesis, and Communication Teams) to assess the secretive marsh bird survey effort. The JV is currently funding (with others) a data synthesis for the whole Mississippi Flyway. In addition, the Working Group recently revised the goal and objectives of the spring marsh-bird survey. Results of an analysis to estimate population abundance for secretive marsh birds were reviewed. Estimates were substantially higher than used in the 2018 JV Waterbird Strategy. In some cases, results indicated different abundance trends during the 10-year period, however, the number of states (i.e., total survey points and habitat quality of points) varied from year to year.

Correction factors for marsh bird abundance estimates in Ohio (Brendan Shirkey, Winous Point Marsh Conservancy)

A distance sampling approach was used to estimate local population abundance of two rail species, and researchers determined a survey correction factor using marked individuals with transmitters. Approaching to within 30m of marked Soras (n= 40) and Virginia Rails (n=174), researchers found that about half these birds responded to the playback caller. Using resulting survey correction factors, there were an estimated 1,100 rails at Winous Point; however, there appears to be substantial immigration from the area during the 6-week survey period.

ACAD update and feedback (Tom Will, FWS)

The Avian Conservation Assessment Database (ACAD) is a vulnerability assessment based on six factors (global or regional), completed for 1,600 bird species from all taxa. Also included are two importance scores at the BCR scale (how important is the BCR for species). The assessment, available via PIF, was completed for the breeding period. In 2020-21, a similar non-breeding season vulnerability assessment will be conducted, including migration and the stationary non-breeding period. Landbird species population abundances were estimated in 2019, based on BBS data, and are now available at the BCR scale. Tom also conducted a survey of Midwest Avian Data Center use by Science Team members.

Combining BBS and PIF data to quantify Illinois bird population declines (Jim Herkert, Illinois Audubon)

Using simple analysis, BBS population trend data and PIF abundance data were combined to estimate and display change in abundance in dramatic form for several species breeding in

the state of Illinois. The estimated decline in total breeding birds was quite impressive, with some very significant (about 10 species), resulting in 15 year total decline from about 90 million to 78 million. Much like the 2019 Rosenberg et al. 3-billion bird paper, a few species are responsible for the majority of the decline. Interestingly, some birds breeding in the same locations have abundance trends moving in opposite directions (Meadowlark and Dickcissel).

New approaches to JV Landbird Strategy revision (Kelly VanBeek, FWS)
An update on the JV Landbird Habitat Conservation Strategy revision was provided, including results of the 2019 landbird stakeholder survey. Using feedback from the JV Board and from the stakeholder survey, the number of JV focal species for the revision has been reduced and emphasis on decision support tools that include social objectives has increased. The new strategy will be highlighting habitats (forests and grasslands) first, rather than focal species, and a chapter focusing on urban / developed landscapes will be included.

NWI wetlands vs. wet lands: rates of inundation during key periods (Mike Eichholz, SIU)
Mike presented John O'Connor's research regarding measures of inundation for Illinois wetlands identified in the National Wetland Inventory (NWI). Ground surveys were conducted across the state during three periods important to wetland birds -- spring, in June, and during late summer / early fall (shorebird migration). About 40% of wetlands were inundated based on this 2-year assessment. Only 1-2% of wetlands were mudflats during late summer, and some were too vegetated for shorebirds. Another approach to this effort will include machine learning to predict inundation through modeling. The third approach looks more promising, using Synthetic Radar (SAR) to detect inundation.

Landscape change analysis for JV landbird planning (Mohammed Al Saffar, FWS-JV)
Multiple models depicting change and predicted change in primary land covers across the JV region between 1938 and 2025 were reviewed. The most significant land cover change and predicted change for the region, based on the National Land Cover Data (NLCD), is expansion of developed land. Developed land is classed as high, medium, and low intensity, plus there is a developed open-land category; the developed land class may provide important bird habitat conservation opportunity. A county-level change analysis depicting cover type gains and losses was also presented.

Highlights from Bird-group Committee Breakout Sessions (30 January)

JV Landbird Committee (VanBeek and Tonra, Co-chairs)
Attendees: Mohammed Al-Saffar, Dave Ewert, Shawn Graff, Jim Herkert, Sarah Kendrick, Mark Nelson, Greg Soulliere, Wayne Thogmartin, Kelly VanBeek, and Tom Will.

Unlike the other bird-group committees, the landbird committee met on two mornings, the 29th and 30th. Chris was unable to attend the meeting, so Kelly chaired the meeting and Greg took the following notes during our discussion.

1/29/20
- Mark lead us through an outline and flowchart he developed to help review the foundation for the decision support tools (DSTs) proposed at the December 2019 meeting. We discussed uncertainties he had regarding the purpose of the DSTs and different potential data sources.
     - We must consider in the DSTs how best to influence those that conduct and financially support bird conservation decisions.

- Let partners know these are priorities at the regional scale but we can help with local scale planning (urban habitats, key birding areas).
- There was uncertainty about which social objectives we should consider, but the JV Board can help in this regard.

- Mohammed reviewed questions related to models for forest, grassland, and urban DSTs that lead to substantial discussion and the following key points.
  - We need to consider the diverse needs of focal species; different tools/information are required for different focal species. Grassland Bird Conservation Area (GBCA) models worth reviewing include the tiered approach (levels 1, 2, and 3; three different bird models) in the PPJV and Wisconsin's GBCA approach.
  - We must think critically about scale, especially with our three grassland focal species. For example, Eastern Meadowlark (EAME) populations require much larger landscape considerations than, for example, Henslow's Sparrow (HESP) populations because EAME is more widespread and uses a variety of habitats in large, grassy landscapes. HESP appears reliant on permanently conserved grasslands often in smaller landscapes like the Chicago Area Grasslands.
  - Perhaps we can use STEM models to identify habitat areas rather than cover type analysis for the grassland DST. We likely need both.
  - The Urban chapter may be the best place to integrate multiple social objectives; this chapter will likely use a very different format compared to the Forest and Grassland chapters.
  - Perhaps the Urban chapter can incorporate the Bird City approach, using existing documentation about what can be done for birds in urban areas.
  - There are focal species beyond chimney swift (current urban focal species) that should be considered in the Urban chapter.
  - Wayne cautioned against using the "fuzzy" analysis to smooth map images when providing local management decisions, but local decisions are not the intent of the regional landbird strategy.
  - Mark offered to work with Mohammed on the spatial analysis for forests (and grasslands).

- We decided the Urban Chapter would not include separate forest and grassland DSTs, and may not include a spatial decision support tool at all but rather focus on best management practices (BMPs). Tom, Dave, Greg, and Chris will compose this chapter, incorporating Dave's draft stopover habitat information, using the existing outline. Stopover information will also be included in the Grassland and Forest chapters, dissecting relevant pieces from Dave's draft stopover section.

- By the end of the morning, our discussion lead to a reduced and refined list of DSTs, most focusing on grassland and forest birds, plus a few basic maps for the Urban chapter.

Action items - Landbirds:
1) **Greg and Mohammed will provide a revised list of models/maps to the full committee by 7 February for a final review, requesting a fast turnaround on any additional comments.**
2) **Mohammed (with help from Mark, Wayne, and others) will develop the highest priority DSTs to be used in the strategy ASAP (during the next few months).**

1/30/20
The Landbird Committee discussed the plight of several species of concern and that lacking government policy changes (e.g., agricultural policy), opportunities to reverse downward population trends are unlikely. Species like the Eastern Meadowlark, for example, requires grasslands/herbaceous cover in extensive open landscapes whereas Henslow's Sparrows have

been successful in less open and "smaller" landscapes like the Chicago grasslands with meaningful range-wide population impacts because of its small population size (400,000 birds range-wide). Based on recent trends, aspirational objectives for many landbird species will, realistically, focus on slowing the downward population trajectory and, maybe, eventually, stabilize regional population abundance. This challenge of JVs addressing landscape-scale population declines was better recognized in the 2016 PIF Plan (vs the 2004 Plan). Key points from the committee discussion included:

- Failing to do meaningful habitat conservation, some landbird populations will be non-viable in the not too distant future. We need to express in this strategy that with current (society-driven) landscape change, what we have been doing as a bird conservation community is not enough for landbird species is steep decline.
- Having lofty aspirational goals (e.g., 2004 PIF Plan) is probably meaningless, but quantifying habitat needs for realistic population abundances will provide a foundation for habitat implementation, and preparation for potential policy changes that could positively influence bird habitats.
- The Recovering America's Wildlife Act may provide a partial solution to this massive habitat-loss problem. The landbird strategy can provide the framework for meaningful conservation. This may be demonstrated in a strategy figure(s), perhaps using the comeback of Henslow's Sparrow and its linkage to CRP as a success story.
- Henslow's may also be a species to rally around for state agencies represented on the Board, as they are reliant on and successful in permanently protected grasslands, with Chicago Wilderness providing an example of a successful approach for sustaining HESP populations.
- Grassland birds are an especially great concern for this region. We need to determine the areal extent of grasslands and the amount added to the conservation estate in recent years. Building on existing conservation areas (vs. starting new) is more logical for species requiring large habitat areas. Review the latest Protected Areas Database of the United States (PAD-US) for current protected areas by plant community type.
- Meaningful change for birds must move beyond agency lands, and perhaps the JV Board will need to collaborate on seeking policy change.
- The revised strategy might develop a suite of conservation paths with one focus being simply to prevent "quasi-extinction" (completed loss of species detection on long-term surveys such as BBS). Combining the estimated "half-life" and quasi-extinction information with the habitat trend information will help inform strategy readers of the plight of several focal species.
- We should also include examples of how bird habitats provide value to people, such as translating our habitat objectives into relevant units of ecological services to society.
- We need aspirational population and habitat objectives, but they should be framed in the context of quasi-extinction reality. Wayne offered to assist with this discussion. Ideally, we could produce multiple scenarios that highlight population outcomes given different levels of habitat delivery.

The last part of our committee meeting was spent reviewing the focal species list for the revised landbird strategy. We removed Prairie Warbler (low occurrence in JV region) and added Cerulean Warbler to represent mature deciduous forest (final list below). The need to include in the strategy at least brief species accounts (e.g., 1-pg each in an appendix) was mentioned to help implementers understand the distribution and abundance of focal species, population trends, and general habitat conservation recommendations. We also discussed the need to weave game species information into the text of the strategy, particularly where habitat conservation can be easily integrated for game and non-game birds, and especially for Northern Bobwhite whose populations are nearing quasi-extinction in much of the JV region.

Table 1. Focal species (by habitat category) used for landbird conservation planning in the Upper Mississippi / Great Lakes Joint Venture (JV) region, including color-coded population status and vulnerability, regional primary (X) and secondary (x) period of occurence, Bird Conservation Regions (BCRs) of greatest conservation importance in the JV region, and breeding population (BPOP) goals largely from 2016 PIF Plan.

Habitat category, species and ACAD status[a]	Period of occurrence		BCRs	BPOP objectives (compared to 2016)	
	Breeding	Non-breeding[b]		By 2026	By 2046
Forests and barrens					
Kirtland's Warbler	X	x	12, 23	Follow Recovery Plan (maintain)	
Golden-winged Warbler	X	x	12, 23	Follow Recovery Plan (increase >25%)	
Red-headed Woodpecke	X	x	12, 23, 22, 13, 24	Slow decline >60%	Increase >5%
Eastern Whip-poor-will	X	x	12, 23, 22, 24	Slow decline >60%	Increase >5%
Wood Thrush	X	x	12, 23, 22, 13, 24	Slow decline >60%	Increase >5%
Cerulean Warbler	X	x	23, 13, 24	Slow decline >60%	Increase >5%
Canada Warbler	X	x	12, 23	Slow decline >60%	Increase >5%
American Tree Sparrow		X	23, 13, 24		
Blackpoll Warbler		X	12		
Rusty Blackbird		X	12		
Grasslands					
Henslow's Sparrow	X	x	12, 23, 22, 24	Slow decline >60%	Increase >5%
Bobolink	X	x	12, 23, 22, 13, 24	Slow decline >60%	Increase >5%
Short-eared Owl		X	22, 24		
Eastern Meadowlark	X	x	12, 23, 22	Slow decline >45%	Stablize, <25% loss
Urban					
Chimney Swift	X	x	12, 23, 22, 13, 24	Slow decline >60%	Increase >5%

[a]Avian Conservation Assessment Database (ACAD) provides a science-based species status relative to extinction risk depicted here using color-coded *Watch Lists for the continental scale* : Red = high/urgent conservation need, Yellow = moderate need, and Blue = common birds in steep decline.
[b]Species occurring primarily during the non-breeding period will not have JV regional population objectives.

Action items – Landbirds (continued)**:**

    3) **By 24 February, Wayne will develop a couple paragraphs for the draft strategy regarding "half-life" and "quasi-extinction" to help explain urgent conservation need for some species.**

    4) **Committee leads for the Forest (Katie), Grassland (Sarah), and Urban (Tom) chapters of the strategy will continue to develop these portions of the document following the revised outline (as of 12/2020) and above discussion. Chapter drafts are due to Greg by 5 March.**

    5) **Greg will compile all completed strategy draft sections and incorporate committee review comments by 13 March.**

    6) **Kelly (and/or Chris) and Greg will provide the JV Management Board a strategy-revision update, plus request feedback on key issues at their late March 2020 meeting in Ann Arbor.**

JV Waterbird Committee (Pierce and Monfils, Co-Chairs)
Attendees: Auriel Fournier (portion), Brian Loges, Mike Monfils, Frank Nelson, Rachael Pierce, Sarah Sanders, Rich Schultheis, and Ashley Gramza (portion).

- The group discussed information regarding marsh bird monitoring important to share with the Mississippi Flyway Council. Three main points were identified.
  - Tracking population trends for some species is possible, especially with additional and more consistent survey effort.
  - Explain why the marsh bird survey should be a priority (e.g., wildlife action plants, T and E species, and harvest).
  - Exploring new ways to coordinate the regional survey could increase overall efficiency (state vs. regional roles).
- Discussed that understanding how marsh birds respond to wetland management targeted for waterfowl remains a priority and there are great opportunities for multi-state research/monitoring to be implemented that could build upon our regional survey effort.

- Discussed how to begin updating research and monitoring needs to address evaluation objectives identified in the 2018 JV Waterbird Habitat Conservation Strategy. The following process was identified:
  - Use information gathered from colonial waterbird meeting to form the basis of possible JV priorities.
  - Recommended the same approach by having the Midwest Marsh Bird Working Group identify a set of research and monitoring needs.
  - Once the Midwest Marsh Bird Working Group has identified needs, then the Waterbird Committee could review information from both groups to identify and revise the key evaluation priorities for the JV.
  - This could be done at the 2021 JV Science Team meeting with homework ahead of time (e.g., review documents, potential phone conference, and draft set of priorities).
  - Ashley Gramza joined the end of the meeting during a discussion about how (and if) social science should be incorporated into our research and monitoring priorities.

Action items – Waterbirds:
1) **Co-chairs Mike and or Rachael will present Midwest marsh bird monitoring information and results of the JV-supported population abundance project at the February 2020 Mississippi Flyway Council meeting.**
2) **By winter 2021, Rachael and Mike will work with committee members to review, refine, and prioritize research and monitoring needs, starting with the current lists on the JV website.**

JV Waterfowl Committee Attendees: John Coluccy, Mike Eichholz, Auriel Fournier (portion), Drew Fowler, Bob Gates, Adam Janke, Dave Luukkonen, John Simpson, Mitch Weegman, and Callie Rush (DU) and Ashley Gramza (portion).

- The Arkansas Waterfowl Hunter Access to Private Lands Program was described (Gramza).
- BDJV status update (Coluccy). Budget adjustments suggested species-specific JV's might be cut. The BDJV will continue at a reduced capacity perhaps with a ½-time employee (reporting to Devers) and funding for research projects $350,000 per year next three years. Recent RFPs focused on breeding-ground issues – hopefully satellite projects that track birds from winter grounds to settling in breeding areas.
- Waterfowl habitat and population research in Iowa (Janke). Update on five ongoing waterfowl projects in Iowa.
  - Spring waterfowl use of wetlands in the PPR portion of Iowa,
  - Duck brood use/surveys by drones,
  - Ecology of Canada geese in urban areas of Iowa,
  - Improving waterfowl surveys to better inform conservation decisions,
  - Movement ecology of post-fledging trumpeter swans.
  Adam also gave an update on ongoing waterfowl monitoring and management work by IDNR. Future research interests in Iowa includes more work to understand wetland use by migrating waterfowl and linking water quality and waterfowl habitat relationships.
- JV Waterfowl Strategy objectives and use (Committee). There was a long group discussion about identity of the JV, continuing the bioenergetics approach, and incorporating other metrics into the Waterfowl Conservation Plan – ecosystem goods and services and little discussion on social services. Where do we go from here if we abandon or discontinue bioenergetics modeling to generate non-breeding habitat objectives?

- Great Lakes mallard movements, habitat selection, survival and productivity (Luukkonen). Harvest derivations suggest GL mallards are important to regional harvest, though Ontario likely is underrepresented due to lack of banding. GL mallard BPOPs declining since 2006, no longer tracking continental populations, and failed to increase when Great Lakes water levels increased 2008 -2018. Singer, Arnold, and other's work generally suggest that harvest rate and harvest is not driving observed population declines. Proposing US basin-wide transmitter project to investigate a variety of hypotheses related to productivity and understanding philopatry. Funding was close from MI DNR but fell through and currently seeking funding from the Great Lakes Fish and Wildlife Restoration Act (GLFWRA). Also seeking other state agency partners for both funding and logistical/project support.
- American Black Duck Decision Support Tool expansion project (Coluccy). ACJV, BDJV, and DU worked together to develop this bioenergetics model. Decision support tool to guide and evaluate habitat delivery and implementation, replaces old "expert opinion" model. Expanding plan across entire Black Duck non-breeding range. HUC12-level habitat objectives.
- Promoting JV Waterfowl Strategy to implementation network (Simpson). Discussed how to stimulate its use by the habitat implementation community including habitat delivery, planning, and funding sides of network. Also discussed promoting plan/introducing plan to other ecosystem goods and services planning groups.
  - Annual webinars to provide shorter-term updates on revisions/changes to partners instead of waiting for 10-year revisions
  - Better communication between JV's and flyway councils
  - Promote the development and use of state-level step-down plans. Wisconsin's HUC-12 level plan has been successful in energizing and focusing delivery.
  - Ensure JV staff or representatives can help states when developing wetlands, waterfowl, and habitat action-plan efforts – this is kind of the model that the ACJV employs. It also assures strong links between JV and state level plans.
  - Re-engage JV Board to ensure they are promoting plan to implementers.
- Moving forward with key evaluation strategies (Committee). Come together and critically evaluate future direction of JV objectives – how can we incorporate more ecosystem goods and services into our objectives and what would that look like. How does that influence/change our current research and monitoring needs?

Action items – Waterfowl:

- **By June 2020, co-chairs John and John will plan a conference call or summer meeting to review, refine, and rank lists of waterfowl research and monitoring needs, beginning with the current lists available on the JV website.**
- **By September 2020, John and John will develop a fall meeting plan to further discuss bioenergetics-based habitat objectives, integration of ecosystem goods and services, final lists of prioritized research and monitoring needs, plus collaboration opportunity for research agencies and organizations to address these needs (re 2021 JV Flex-fund RFP).**

The JV Science Team meeting adjourned at 12:30 PM on the 30th. Greg and bird-group committee chairs compiled these minutes.

Committees of the UM/GL Joint Venture Science Team *(November 2019)*

JV Science Team
Greg Soulliere, Chair

Bird-group Committees
(<u>Ad Hoc committees</u>: Technical guidance through species and modeling expertise for JV conservation planning and evaluation)

Technical Committee
(<u>Standing committee</u>: Technical guidance through science-evaluation proposal reviews and recommendations for JV financial support)

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Mike Eichholz (SIU)

Dave Ewert (ABC)

Robert Gates (OSU)

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Frank Nelson (MO DOC)

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